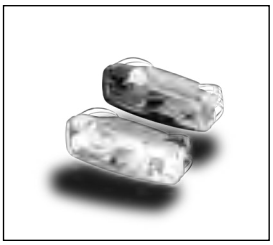
Lightalarms

Lights the way to safety

LIFE SAFETY EQUIPMENT



Thomas&Betts

A Member of the ABB Group

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Thinking *Inside* the Box

Our North American Manufacturing Center of Excellence is Second to None

We design and manufacture our high-performance products at a state-of-the-art North American Center of Excellence. Our dedicated expert teams work together under one roof, giving us unparalleled capabilities in design, innovation, and quality design to assembly to order completion.

We are Designers

Creativity, innovation, and commitment are values shared by everyone at our center of excellence. We have an unlimited capacity for design, and take great pride in creating solution-based products that meet our customers' needs. When an application presents a challenging issue, our expert design team can develop a product that solves the problem. Quality, safety, ease of installation, and long-term reliability are designed into each product from the beginning, ensuring excellence.

We are Engineers and Creators

Combined Experience: Over 100 Years

Our highly skilled mechanical, electrical and software engineers are specialists with proven expertise in the emergency lighting industry. The entire operations team is centralized for maximum synergy from initial design to final assembly and testing.

The new AOI (automated optical inspection) machine added to the Thomas & Betts printed circuit board operation in 2012 is one of the first of its kind in use in North America.

We are Innovators and Builders

As part of Thomas & Betts, a member of the ABB Group, our center of excellence benefits from frequent investment in the latest manufacturing technology. Automation is integrated throughout our manufacturing operations, optimizing efficiency to produce thousands of precision final assemblies each day.

North American Manufacturing Facility

We are a Solution-Based, Vertically Integrated Manufacturer

With over 150 people on our North American manufacturing team, we have complete control over lead time, service, and quality. Our manufacturing capabilities include plastic components, metal binding, circuit boards and final assembly, including small inverters. We can produce exactly what we need without waiting for a large production run or overseas shipment.

We are Developers and Forward Thinkers

Our manufacturing capabilities are so broad, with the capacity for such high volume that we support not only our own production needs, but also manufacture parts for ABB as well. Our team is known for solving issues with solution-based products.

We are Quality Assurance

With everything under one roof in our center of excellence, we can ensure that our high internal quality and performance standards are met at every step in the process, from design to production to order fulfillment. All orders undergo functional testing using our specialized quality inspection facilities.

The Thomas & Betts North American facility is an emergency lighting center of excellence thanks to the commitment, expertise, and creativity of every employee.

Since 2001, the Thomas & Betts manufacturing facility has been ISO 1400 & OHSAS 18001 compliant.

We are At Your Service

Combined Experience: Over 80 Years

Our North American service team is dedicated to ensuring customer satisfaction. With the comprehensive engineering, manufacturing, and testing resources available at our center of excellence, we are committed to providing solutions.

State of the Art
Nexus® Emergency Lighting Management System

Are you prepared for a safety inspection?

Building & Life Safety Codes oblige building owners/managers to ensure the safe evacuation of a building in the event of an emergency. In the interest of public safety, building owners/managers must meet the outlined requirements for exit signs and emergency lighting equipment, including the following:

- Conduct a discharge test every month.
- Conduct functional tests annually.
- Keep a log book of maintenance information.

Complying with these requirements can be labor intensive and costly, especially in large buildings where testing every emergency light requires many man-hours.

Disrupting the power supply during lengthy inspections can also put public safety at risk.

Manage Testing with Nexus® to Save Time and Costs

Nexus® is a real-time monitoring system that manages the status of your entire emergency lighting and Exit Sign system from a central control unit. Nexus® runs diagnostics, performs required monthly and annual functional tests, generates maintenance logs and runs compliance reports.

Available in wired or wireless (RF) versions, Nexus® installations often pay for themselves in less than two (2) years. In addition to operational savings, Nexus® helps increase system reliability and performance and reduces the risk of failed inspections. One building or a group of properties under the same management can be monitored with Nexus®.

Maximize System Availability

By allowing maintenance personnel to easily maintain and monitor the emergency lighting system without having to manually check each unit, Nexus® reduces the hours required to disrupt the power supply for inspections. With Nexus®, monthly tests and reports on the status of all emergency lights and exit signs can be done individually, in groups, or together.

Advantages of the Nexus® system include saving labor; maximizing system availability by testing units in groups and stages rather than setting all units in recovery mode; and the convenience of self-monitoring. Nexus® indicates the location of a faulty unit and reports it instantly without requiring a manual search.

Update Status Instantly

Nexus® passes messages both to and from the emergency units to instruct the units to perform all mandatory testing by communicating between the emergency units and a centrally located controller.

Nexus® is a proven system supported by a 5-year warranty, and can contribute to LEED certification and support green building initiatives.

For Nexus® compatibility please, refer to individual product pages for complete details

Small System Example

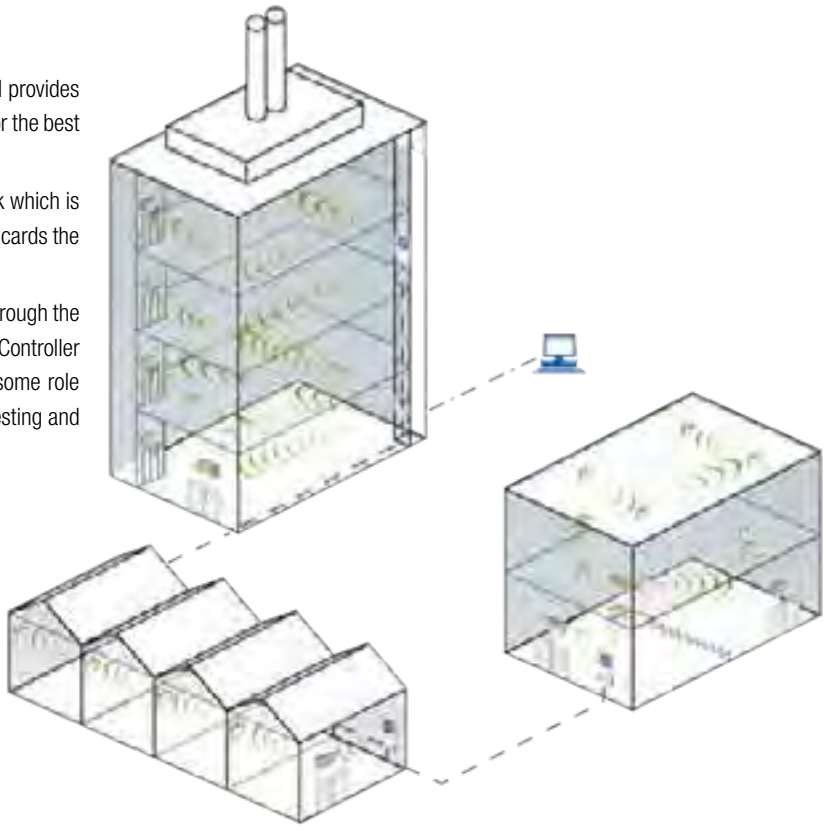
In a system of less than 100 units it is most likely that the only hardware required, other than the emergency units themselves, is a controller. All communication would occur wirelessly and installation would not vary greatly from a non-monitored system. Once the units are in place, the system will establish the mesh network. The building itself could be quite large as each unit only needs to be able to communicate with its close neighbors and does not need to communicate directly with the controller.

Large System Example

The Nexus® RF system has been designed to be extremely flexible and provides for a range of system options. Each large site will need to be assessed for the best system solution with the assistance of Thomas & Betts technical staff.

The basic Nexus® RF system is designed to run on an Ethernet network which is present in most modern buildings however through a range of interface cards the backbone of the network could be WLAN.

As with the small system example, site performance will be optimized through the careful selection and placement of Area Controller Routers and the Area Controller to form efficient clusters. Building layout and materials will also play some role in determining the best solution to deliver a highly effective means of testing and maintenance requirements.



High Output MR16 LED Emergency Lighting

MR16 LED Illumination

With the remarkable technology development in the last decade, the light-emitting diode (LED) is becoming the preferred solution in lighting applications. The emergency lighting industry is no exception: today virtually every new product introduced to market includes "white light" light LEDs for emergency illumination. Extremely efficient and long-lasting, LED lamps become the natural alternative to incandescent lamps due to three main advantages:

- **Lamp efficacy**: 50 - 100 lumen per watt compared to 15 - 30 lumen per watt for the best halogen lamp. Allowing for smaller batteries and units and/or remote capacity
- **Operational life**: 30,000+ hours, equivalent to a lifetime warranty in emergency lighting.
- **Lower lamp temperature**: (80 - 120°C) is a huge benefit for lighting in hazardous locations.

MR16 LED Lamp Benefits

- Reduces total cost of ownership, uses few fixture due to superior illumination, thus reducing instillations cost and future maintenance of the entire system.
- UL-recognized components.
- Available for standard battery voltages 6V, 12V and 24V as well as 120V operation.
- Energy-efficient LED MR16 lamp provides equivalent lighting performance to a much higher watt halogen MR16 lamp.
- Reduces required battery capacity by 75%, for Battery Units and Remote heads.
- Small profile, compact white lighting is ideal for architectural applications.
- Typical 30,000 hours of Operational Life.
- Vibration-resistant LED stands up to industrial environments.
- Ideal for indoor and outdoor use.

200-220-Lumen 4W MR16 LED

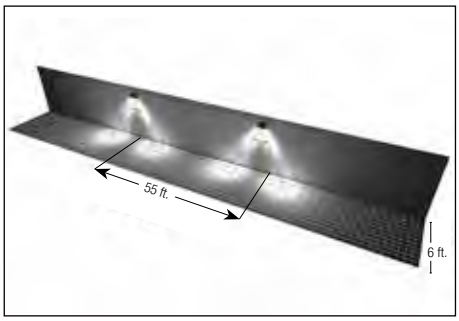
Leading the technology trend, **Lightalarms®** offers a complete series of 4W MR16 LED lamps available for all the standard battery voltages: 6V, 12V, 24V and 120V. With up to 30,000 hours of operational life and a luminous flux of typically 200 to 220 lumens, they are available with most emergency heads designed to hold an MR16 lamp and meet the majority of illumination specifications. For example: one pair of LED emergency heads installed at a height of 7.5ft illuminates a 6ft by 55ft path of egress.

340-Lumen 5W MR16 LED

Keeping pace with technology, in 2012 we introduced a 12V-5W MR16 LED lamp. With a typical luminous flux of 340 lumens, this lamp has the same lighting performance as a 20W high-output halogen MR16. A twin emergency head installed at a height of 7.5ft illuminates 70ft path of egress.

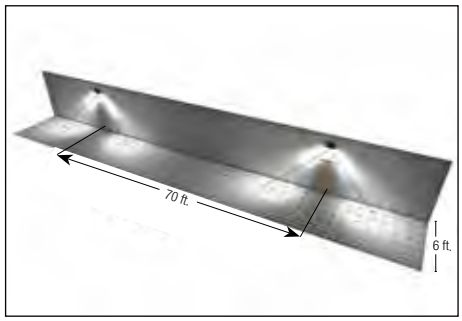
540-590 Lumen 6W MR16 LED

A 6W MR16 LED lamp delivers up to 590 lumens for an average spacing in emergency lighting of 106 feet with an efficacy of 98.3 Lm/w, it is over 6 times the efficacy of a MR16 35W halogen with similar light output. This lamp can deliver the highest linear foot of illumination per watt on a path of egress! (spacing in feet / watt) 8.83ft compare to 1.37ft for a MR16 35W.



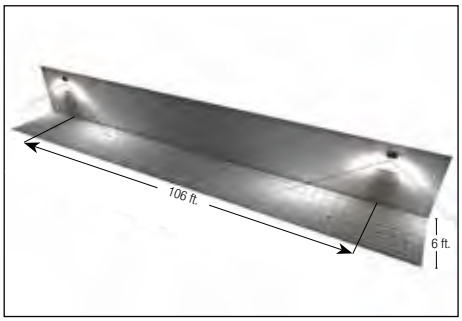
55-ft. Path of egress
2 X 4W MR16 LED

Based on an average of 1 foot candle



70-ft. Path of egress
2 X 5W MR16 LED

Based on an average of 1 foot candle



106-ft. Path of egress
2 X 6W MR16 LED

Based on an average of 1 foot candle

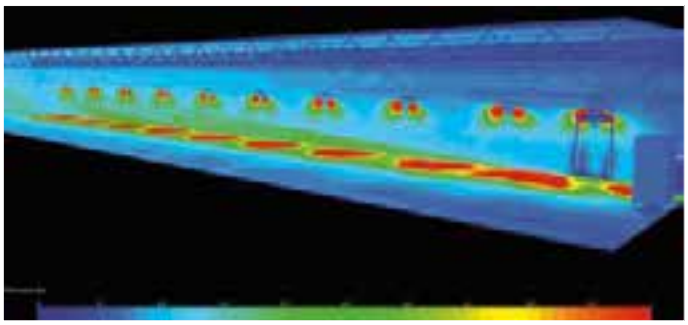
Case Study: Fewer MR16 LED units required

Emergency lighting units with MR16 LED lamps provide the same illumination at floor level using significantly less units.

- Reduced Installation Costs, less product needed and labor.
- Reduced Energy Costs, keeping batteries charged at full capacity to be ready to respond to an emergency situation at any time.
- Reduced Maintenance and Testing Cost, less units to maintain and test in the Emergency Lighting System.
- Reduced Lamp Replacement Cost, LED lamps have a 30,000+ hour lamp life compare to only a few hundred hour typical with incandescent lamps.
- Reduced Environmental impact, less product materials, less batteries, less transportation, less packaging, less labor, less waste.

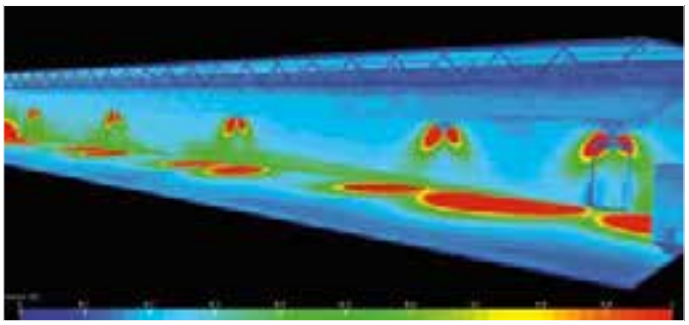
Compare

Where the building code requires an average of 1 foot-candle and a minimum of 0.1 foot-candle at floor level along the path of egress on a 150' x 9' x 9' corridor with an egress door at one end, a 150' x 6' path of egress, and a 7.5' unit mounting height.



Standard wedge-base 9W Incandescent Lamp

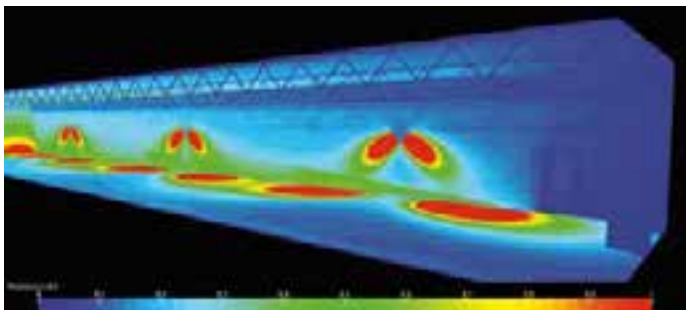
Standard Emergency Lighting Units with 9W wedge-base incandescent lamps requires a total of 10 double-head units or remotes



4W MR16 LED lamps

Same Standard Emergency Lighting Units with 4W MR16 LED lamps requires a total of 5 double-head units or remotes

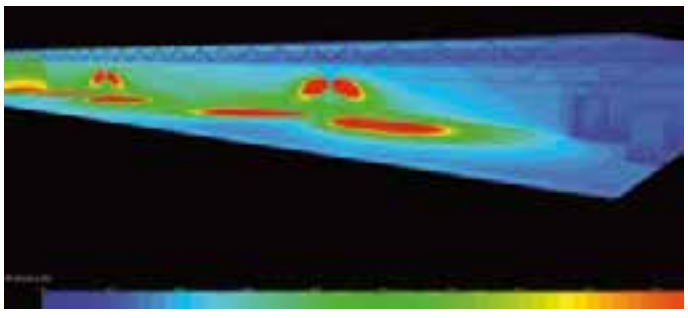
MR 16 LED LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT NUMBER
LD1	6	4	199	580.0097-L
LD7	12	4	220	580.0093-L
LD13	24	4	220	580.0098-L
LD14	24	6	590	580.0100-L
LD25	120	4	204	580.0095-L



5W MR16 LED lamps

Same Standard Emergency Lighting Units with 5W MR16 LED lamps requires a total of 3 double-head units or remotes

MR 16 LED LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT NUMBER
LD9	12	5	340	580.0104-L



New! 6W MR16 LED lamps

Same Standard Emergency Lighting Units with 6W MR16 LED lamps requires a total of 2 double-head units or remotes

MR 16 LED LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT NUMBER
LD10	12	6	540	580.0106-L
LD14	24	6	590	580.0100-L

Circuitry

Improved Diagnostics Circuitry

Self-Testing & Monitoring Diagnostic Circuitry

By incorporating diagnostics features with a high-powered 8-bit microcontroller, our Improved Diagnostics system ensures unsurpassed reliability in one, totally contained system. In the event of a unit malfunction, the Improved Diagnostics system produces an audible warning in the form of an intermittent beep and the LED indicator associated with the fault will illuminate continuously. When the problem is acknowledged by depressing the alarm/silence/test button, the alarm is silenced and the LED indicator changes to a flashing mode until the problem is corrected.

- Continually monitors system parameters
- ncorporates state-of-the-art microcontroller technology
- D includes audio and visual service alarms
- DNA non-audible version for visual service alarms only
- Self-testing in accordance with NFPA101, Life Safety Code minimum 30 seconds every 30 days, 30 minutes every six months and 90 minutes annually.

Features

Battery Failure

- (Red) Illuminates if the battery is shorted or battery voltage drops below preset value. Will also detect incorrect battery (ie. 6VDC vs. 12VDC)

Battery Disconnect

- (Red) Illuminates if the battery circuit is open.

Charger Failure

- Red) Illuminates when charger is not functioning properly by monitoring the charger current.

Lamp Failure

- (Red) Illuminates when one or more emergency lamps fail. Also monitors remote lamps.

Service Alarm

- (Red) Illuminates when a fault is detected that requires a qualified service technician.

AC-On

- Green) Lit when line voltage is present.

Charger On

- Amber) Illuminates when charger is recharging the battery.

Alarm Silence / Manual Test Switch

- Button is used to acknowledge and silence audible alarms.
- Also functions as a manual test switch to simulate a power failure.

Self Testing

- Unit tests itself every thirty days for a minimum 30 seconds, thirty minutes on the sixth month and ninety minutes annually.

TO ORDER FOR COMPATIBLE UNIT

Add Suffix: -ID (for audible circuit) to model number
Add Suffix: -IDNA (for non-audible circuit) to model number

Improved diagnostics (ID or IDNA) includes a Time Delay function, if needed it can be enabled/disabled in the field (15 min) or it can be preset at the factory by including the suffix ID-TD* or IDNA-TD* (*5 min., or *10 min., or *15 min.)

Pulse Type Circuitry

Prolongs the life of a battery through pulse charging

Lightalarms® PulseType circuitry utilizes the latest in solid state design to provide a technically advanced charger combined with features and functions that promote long reliable battery life and excellent unit performance.

The design of the PulseType circuit takes into account the long periods of inactivity typical of standby emergency equipment. Batteries are kept at full capacity by a pulse charge that allows the battery to cycle continuously. This greatly reduces the problem of grid corrosion and dramatically increases battery performance.

Lightalarms® computer-tests all active components on the circuit boards during assembly. Critical functions such as brownout, low voltage disconnect, and charge voltage are individually monitored and adjusted at the factory.

Features

120/277V Input

- Capability to operate with 120Vor 277V input.

Fused Output Circuit for Units with Remote Capacity

- Emergency units up to 54W have a single fused output circuit. Units over 54W have two fused output circuits supplied standard.

Dual Diagnostic Indicator Lights

- Dual indicators, red and amber continuously monitor the condition of the battery, charge circuit and presence of AC.

Temperature Compensation

- At high ambient temperatures, batteries need less charge voltage to recharge.
- At cold temperatures, batteries require a higher charge to maintain full capacity.
- The PulseType charger automatically adjusts the charge voltage to precisely what the batteries require at a given temperature.

Sealed Relay

- Sealed relay protects against environmental contaminants.

Low Voltage Battery Disconnect

- The lighting load is disconnected from the battery at 87.5% of nominal battery voltage. This prevents deep discharge damage to the battery.

Brownout Protection

- Emergency lamps energized when AC voltage falls to approx. 80% of nominal voltage, the level at which most fluorescent and HID fixtures extinguish.

Battery Lockout

- This labor saving feature prevents the battery from discharging when the unit is installed to a non-energized circuit. The battery is electronically locked out until the unit is energized with AC power. Contractors do not have to return to a job site to connect batteries when the building's main power is turned on. They can install the unit and connect the battery in one convenient operation.

Reverse Polarity Protection

- A polarized plug is used to connect the battery to the circuit board, thus preventing damage from occurring to the system.

Current Limited Output

- Extends battery life by preventing overheating and battery gassing during recharge.

Popular Options

Lightalarms® Emergency Lighting Units and Exit Signs are available with a range of options that can be added to enhance performance, simplify testing or adapt emergency battery units or exit signs for use in specific environments. Please refer to individual product pages to verify availability of individual options on specific equipment.

Voltmeter

Option provides a visual indication, in the test mode, of the unit's battery voltage. The good/check meter face allows maintenance personnel to recognize charger and battery function.

Add Suffix: -V

Ammeter

Option provides an indication of charge current when the unit is in the equalize mode.This verifies charger capability and the current acceptance of the battery.

Add Suffix: -A

Dual Circuit (Exit Signs)

Option provides two AC input circuits to permit 2 separate AC sources to energize the sign.

Add Suffix: -2

Tamper Proof/Vandal Resistant Screws

Tamper proof screws may be used on certain units to avoid unauthorized entry to circuitry or vandalism.

Add Suffix: -VR

Lamp Disconnect Switch

Option will disconnect lamp load when area is not in use during prolonged power failure. The switch may also be used to reactivate emergency power to remote or unit heads.

Add Suffix: -DS

Photocell Test Switch

Allows for testing of an emergency battery unit, a Self-Powered battery back-up exit sign or combination unit by means of illuminating, with a flashlight, a photocell mounted in the bottom of the fixture.

For product compatibility please contact the factory.

Add Suffix: -P or -PST depending on series

Flasher

The flasher option is used within Exit Signs to draw additional attention to the exit discharge area. When there is an emergency situation, the exit legend will illuminate as well as begin to flash thus drawing additional attention to the Exit Sign leading to a exit discharge.

Add Suffix: -FL

Flasher/Buzzer

The flasher/buzzer option is used within Exit Signs to draw additional attention to the exit discharge area. When there is an emergency situation, the exit legend will illuminate as well as begin to flash and admit an audible buzzer thus drawing additional attention to the Exit Sign leading to a exit discharge.

Add Suffix: -FB

Fire Alarm Activated Flasher

Fire Alarm Activated Flasher option is for an Exit Sign that is wired into the Fire Alarm system of a building via 24 volt wire. When the fire alarm is activated the exit legend will flash to draw additional attention to the exit discharge area. This flashing option will only activate when the fire system is activated.

Add Suffix: -FAF

Fire Alarm activated Flasher/Buzzer

Fire Alarm activated Flasher/Buzzer option is for an Exit Sign that is wired into the Fire Alarm system of a building via 24 volt wire. When the fire alarm is activated, the exit legend will flash and the Exit Sign will buzz to draw additional attention to the exit discharge area. This option will only activate when the fire system is activated.

Add Suffix: -FBF

Time Delay

Option is designed to be used in areas where HID type lamps are used for normal lighting. As these lamps require several minutes to re-strike and to produce their nominal lighting output, it is necessary to also hold the emergency lighting on for this period, even after the AC utility has been restored. A time delay unit can be helpful in areas where it is difficult to directly access an emergency lighting unit's test switch. The power to the unit can be briefly switched off and on at the breaker panel, and the maintenance person can then return to the unit and observe a timed emergency operation.

Add Suffix: -T1 (5 minutes), -T2 (10 minutes), -T3 (15 minutes)

Damp Location

Option for environments that are subject to moderate amounts of moisture (humidity), and a temperature range between 10°C (50°F) and 40°C (104°F). Example: partially protected exterior areas such as canopies, stairwells, etc.

Add Suffix: -DL

Improved Diagnostic Circuitry (for exit signs)

Option is designed to continuously monitor the charger assembly, battery and LED assembly current. If a fault is indicated, the external service required indicator will illuminate. The diagnostic/self test will self test for minimum 30 seconds every 30 days, 30 minutes every six months and 90 minutes annually. Meets NFPA 101 Life Safety Code requirements for periodic testing.

Improved Diagnostic (Audible) **Add Suffix:** -ID

Improved Diagnostic (Non-Audible) **Add Suffix:** -IDNA

Improved Diagnostic Circuitry (for battery units)

Improved Diagnostic (Audible) **Add Suffix:** -ID

Improved Diagnostic (Non-Audible) **Add Suffix:** -IDNA

For complete details refer to page 8.

EXIT SIGNS

Exit Signs Series

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ARCHITECTURAL
Simplicity™ Premium™
SLED, SPLED Series

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COMMERCIAL
Simplicity™ Economizer™
SE, SES, SEN Series

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COMMERCIAL
Simplicity™ Universal™
UEA, UEN Series

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ARCHITECTURAL
Genesis™ "over the door"
and "floor proximity"
Tandem Series

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ARCHITECTURAL
Genesis™ GX, GXE Series

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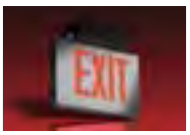
COMMERCIAL
Galaxy™ XD, XDN Series

24

COMMERCIAL
Galaxy™ Slim
TX, TXE Series

25



COMMERCIAL
Galaxy™ XDPC Series

26-27

WITH LED LAMP HEADS

COMMERCIAL
UX4 LED Steel Exit &
Combination Series

28-29

ARCHITECTURAL
Grande™ Exit Series

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WITH LED LAMP HEADS

ARCHITECTURAL
Grande™ Combination
Series

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COMMERCIAL
Quick™ QLX, QLXN Series

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WITH LED LAMP HEADS

COMMERCIAL
Quick™ UQLXN-2MR
Combination Series

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COMMERCIAL
Quick™ UQLXN-2SQ &
Quick™ UQLXN-0R-ID
Combination Series

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COMMERCIAL
Cluster™ LED UQLXN500-
2LED Combo & ELF652D
Series

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INDUSTRIAL NEMA 4X
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WITH LED LAMP HEADS

INDUSTRIAL NEMA 4X
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Combination Series

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INDUSTRIAL
Class I, Division 2
Severe™ XVHZ, XVEHZ
Series

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WITH LED LAMP HEADS

INDUSTRIAL
Class I, Division 2
Severe™
XVH, XVH12N & XVH12H
Combination Series

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INDUSTRIAL
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X402, EXP Exit and
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SELF-LUMINOUS
XT Tritium™ Series

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PENDANT MOUNT
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CUSTOM SIGNAGE
Special Wording Panels

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About Exit Signs

Unlike Battery Units, Exit Signs must be illuminated at all times, 24 hours, 7 days a week, during normal operation. During an emergency operation situation, such as a loss of AC power, the Exit Sign must be illuminated for a minimum of 90 minutes.

Legend

An Exit Sign legend is defined as a single word "EXIT" with chevron indicators to direct occupants of a building to the nearest exiting point of that building. Legends are required to meet visibility, brightness, uniformity, and lettering/background contrast maximum to minimum ratios. Legend standards require EXIT lettering dimensions to be a minimum of 6 inches high with a ¾ inch stroke, and chevron indicators that are visible at 50 feet. Exit legends are available in red or green as required by local code requirements.

Illumination

The most popular light source to illuminate an Exit Sign is Light Emitting Diodes (LED) which all our Exit Signs offer. We use red or green long-life, energy-efficient LEDs. LEDs are very energy efficient, limiting the energy each Exit Sign uses 24 hours a days, 7 days a week. The long life limits the maintenance required to replace lamps.

There are two different methods typically used to illuminate an EXIT legend. The most common method is found in back-lit signs, which use an LED light source located behind the legend, illuminating through a red or green diffuser. The edge-lit method uses a clear, white or mirrored acrylic face panel on which the legend is etched or silk-screened, and the LED light source is installed in the Exit Sign housing along the top edge of the panel, allowing the light to travel through the acrylic to illuminate the etched or a silk-screened legend. In general, back-lit Exit Signs are more economical and acrylic edge-lit Exit Signs are more high-end, elegant fixtures.

Operational Types

There are typically 3 types of Exit Sign designs, **AC-Only, AC/DC and Self-Powered** that ensure that an Exit Sign will work under normal operation conditions and in emergency operation mode. An **AC-Only** Exit Sign is illuminated under normal operation conditions by the AC utility power supplied to a building; emergency operation mode power is supplied by an AC inverter or generator. An **AC/DC** Exit Sign is illuminated under normal operation by the AC utility power supplied to a building; emergency operation power is supplied by a DC power source, such as a battery unit with extra battery capacity to ensure that both the Exit Sign and the battery unit will run for 90 minutes. A **Self-Powered** or Battery Back-up Exit Sign is illuminated under normal operation by the AC utility power supplied to a building; emergency operation power is supplied by a battery contained inside the Exit Sign housing, providing illumination for a minimum of 90 minutes. A **Combination Unit** is also self-contained and commonly includes an Exit Sign and a two-headed battery unit combined into one unit. The Exit Sign is illuminated under normal operation, while the two heads only illuminate during emergency operation mode.

Environments

Exit Signs are required in every type of environment. **Lightalarms®** manufactures Exit Signs to meet the requirements of most environments and applications. An exit housing for a **standard type** environment has a NEMA 1-rated housing that provides protection against incidental contact with the enclosed equipment, battery/electronics or wiring. These housings are what you would expect to see in an office type application. For **vandal-resistant applications,** standard Exit Signs can be made vandal resistant by using polycarbonate shields and/or tamper resistant screws, or a vandal-resistant Exit Sign such as the Severe™ Family Exit Series can be used. A **Damp location** is an area that is indirectly subjected to moisture and typically uncontrolled temperatures, for example in a courtyard under an eave. **NEMA 4X-rated** Exit Signs are designed for **harsh or corrosive environments** where oil-, water-, and dust-tight construction is required. There are different NEMA ratings based on the application environment. **Hazardous Location-rated** equipment must be a type which will NOT itself contribute to the ignition of flammable or explosive substances present in the location of the emergency lighting unit. Hazardous Locations include oil refineries, paint shops, dry cleaning plants, textile mills etc. Hazardous Location-rated equipment is divided into different Classes and Groups, depending on the specific gases or chemicals present.

Options

Besides offering many different types of Exit Sign housings for various environments **Lightalarms®** also provides a wide choice of options to meet specific customer requirements. **Self-Diagnostic/Self-Test** features are designed to continuously monitor every critical function of the Exit Sign, battery, charger, LED lamps and lamp heads supplied with a Combination Unit to ensure that the unit is working properly and is ready for an emergency situation. The **flasher option** allows the exit panel to flash to indicate that there is an emergency situation, thus drawing attention to the exit. The **flasher/buzzer** option allows the exit panel to flash and sound a buzzer to indicate that there is an emergency situation, thus drawing attention to the exit. A **Fire Alarm activated flasher/buzzer** is connected to a fire alarm system via a 24V wire and will cause the Exit Sign panel to flash and sound a buzzer when a fire alarm is activated. The **Dual Circuit** feature allows input from a utility AC source as well as a secondary utility AC source. The **Time Delay** feature allows a Combination Unit to stay illuminated after the AC power is restored thus allowing HID lamps that may need re-striking to reach full illumination before returning to normal operation. **Damp location** operation is for Exit Signs that will be subjected to slight moisture and typically uncontrolled temperatures. The **Cold Weather** option allows the batteries inside of an Exit Sign to maintain an optimal temperature range to work properly to provide emergency back-up operation. **Vandal-resistant screws and polycarbonate shields** provide extra protection in areas where the Exit Sign may be subject to vandalism.

Quick Reference Chart

	SIMPLICITY™ PREMIUM SERIES (PAGE 14-15)	SIMPLICITY™ ECONOMIZER SERIES (PAGES 16-17)	SIMPLICITY™ UNIVERSAL SERIES (PAGES 18-19)	GENESIS™ FLOOR PROXIMITY SERIES (PAGES 20-21)	GENESIS™ GX, GXE SERIES (PAGES 22-23)	GALAXY™ XD, XDN SERIES (PAGE 24)	GALAXY™ SLIM SERIES (PAGE 25)	GALAXY™ XDPC SERIES (PAGES 26-27)	UX4 LED SERIES (PAGES 28-29)	GRANDE™ SERIES (PAGES 30-31)	GRANDE™ COMBINATION SERIES (PAGES 32-33)	QUICK™ QLX, QLXN SERIES (PAGE 34)	QUICK™ 2MRS COMBINATION SERIES (PAGE 35)	QUICK™ 2SQ COMBINATION SERIES (PAGES 36-37)	SEVERE™ XV SERIES (PAGES 40-41)	SEVERE™ XV COMBINATION SERIES (PAGES 42-43)	SEVERE™ XVHZ SERIES (PAGES 44-45)	SEVERE™ XVHZ COMBINATION SERIES (PAGES 46-47)	EXP SERIES (PAGES 48-49)	XT SERIES (PAGE 50)
APPLICATION																				
Architectural	X			X	X					X	X									
Commercial		X				X	X	X	X			X	X	X						
Industrial															X	X	X	X	X	X
Remote Capacity								X	X		X			X		X			X	
Damp Listed					X	X	X			X	X	X	X	X	X	X				
NEMA 4X															X	X				
Hazardous Locations																	X	X	X	X
HOUSING																				
Aluminum	X	X		X	X	X	X	X											X	
Thermoplastic										X	X	X	X	X						X
Steel									X											
Polyvinyl Chloride															X	X	X	X		
EXIT LEGEND																				
6 inch Letters	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8 inch Letters	X	X			X															
COLOR																				
White	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X				X
Black	X			X	X	X	X	X	X	X	X				X	X				X
Aluminium body or face	X	X		X	X	X	X	X	X	X	X				X	X				
Gray															X	X	X	X	X	
Custom	X				X															
ILLUMINATION																				
Red LED	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Green LED	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Self-Luminious Tritium																				X
AVAILABLE OPTIONS																				
Self-Diagnostic	X				X	X		X		X	X			X	X	X	X	X		
Flasher/Buzzer	X				X	X		X	X	X	X				X	X				
Fire Alarm Active Flasher	X				X	X		X	X	X	X				X	X				
Dual Circuit	X			X	X	X			X	X	X				X					
Time Delay								X			X								X	
Cold Weather															X	X	X			
Vandal Resistant Screws				X	X	X		X		X	X				X	X	X	X		
Vandal Resistant Screws & Face Plate				X	X	X		X		X	X									
SPECIAL WORDING	X	X			X	X		X	X	X	X				X	X	X	X		
ACCESSORIES																				
Pendant Mount	X				X	X			X		X				X	X			X	X
Wire Guard - (Wall)					X				X	X		X	X	X						
Wire Guard - (Ceiling)					X				X	X		X								
Wire Guard - (End)					X				X	X		X								
Vandal Resistant Shield - (Wall)				X	X					X	X									
Vandal Resistant 4X Shield - (Wall)					X															
ORIGIN																				
North America	X	X		X	X	X		X	X	X	X				X	X	X	X	X	X

NOTE: This is a quick reference guide only. Refer to individual product pages for complete details regarding applicable models.

SIMPLICITY™ PREMIUM SLED & SPLED SERIES

Premium Die-Cast Aluminum and Laser-Etched Acrylic Edge-Lit Exit Sign

FEATURES

Construction

- Housing, trim plate, trim ring and canopy made of die-cast aluminum
- U-shaped clear acrylic Legend panel features laser-etched letters and chevrons
- Choice of 6 inch or 8 inch EXIT lettering legend, available in Red or Green

Mounting

- Modular design allows for Surface or Recessed Mount
- Single face model includes (1) legend panel, (1) housing, (1) trim ring, (1) trim plate, (1) canopy and 27 inch adjustable bar hangers
- Double face model includes (1) legend panel (with EXIT etched on each side), (1) housing, (1) trim ring, (1) trim plate, (1) canopy and 27 inch adjustable bar hangers and (1) canopy
- Canopy included for surface wall, end or ceiling mount applications
- Trim ring included for recessed wall or ceiling mount applications.
- Housing provided with conduit knock-out 1/2", top, back and end.
- (D) dome or (P) pyramid trim plate used for surface or recessed wall or ceiling mount applications
- (Z) flat trim plate used for recessed ceiling mount only applications

Finishes

- Choice of finishes: white, black or brushed aluminum, custom colors available.
- Choice of Legend panel colors: red on clear (single face only), red on white, red on mirror, green on clear (single face only), green on white or green on mirror

Chevrons

- Laser-etched as specified
- UA option includes, (4) field installed stick-on translucent chevrons, (2) for single face, (4) for double face

LEDS

- Red or Green Long-Life Light Emitting Diodes (LED) illumination
- Optional White LEDs for custom special wording panels available

Self-Diagnostics

- Self-Powered models available with or without Improved Diagnostics
- NEXUS® Wired system compatible

Special Wording Panels

- Available. Contact your sales representative with your design requirements

Approvals

- Listed to UL 924 Standards
- Meets NFPA101 (Life Safety Code), NFPA 70 NEC, OSHA illumination standards

Warranty

- Five Year full warranty (subject to proper installation and maintenance)

CHEVRON DESIGNATION

Chevron Right (R)
Single Face

Chevron Left (L)
Single Face

Single Face, Double Chevron (1D)
Double Face, Double Chevron (2D)

Double Face, Single Chevron (RL)
Represents each side of a double face panel.

*Wording and chevrons not to scale. For illustration purposes only.

Flat Trim

Dome Trim Plate

Pyramid Trim Plate

SPECIFICATIONS

Supply and Install **Lightalarms® Simplicity™ Premium SLED, SPLED** Series.

The Exit Sign specified with (D) dome or (P) pyramid trim plate, single face shall be standard with (1) legend panel, (1) housing, (1) trim ring, (1) trim plate, (1) canopy and 27 inch adjustable bar hangers and specified as double face shall be standard with (1) legend panel (with EXIT etched on each side), (1) housing, (1) trim ring, (1) trim plate, (1) canopy and 27 inch adjustable bar hangers.

The Exit Sign specified with (Z) flat trim plate, recessed ceiling mount only, single face shall be standard with (1) legend panel, (1) backbox, (1) flat trim plate, and 27 inch adjustable bar and specified as double face shall be standard with (1) legend panel (with EXIT etched on each side), (1) backbox, (1) flat trim plate and 27 inch adjustable bar hangers. (D) dome or (P) pyramid trim plate models housing, trim ring, trim plate and canopy shall be made of die-cast aluminum. (Z) flat trim plate models backbox shall be made of 20 gauge steel and flat trim of die cast aluminum. Housing, trim ring, trim plate and canopy shall be in color, (W) white, (B) black or (A) brushed aluminum. Legend panel colors shall be, (RC) red on clear, (RW) red on white, (RM) red on mirror, (GC) green on clear (GW) green on white or (GM) green on mirror. The unit shall have the trim plate snap and lock in the housing with torsion spring retainers, thereby eliminating any visible screws or hardware. The legend panel shall be clear acrylic, U-shape and the letters and chevrons engraved by laser as specified. The (D) dome or (P) pyramid trim plate model Exit Sign shall be suitable for surface mount, wall, end or ceiling as well as recessed mount wall or ceiling applications. The (Z) flat trim plate recessed mount single face or double face shall be suitable for recessed ceiling installations only. The illumination source shall be Light Emitting Diodes (LED) in (R) red or (G) green color. The LEDs shall provide illumination in normal and emergency operation mode. The LEDs shall be mounted inside the Exit Sign housing on a PCB strip. A color matching LED sensitive EXIT legend silkscreened in (R) red or (G) green, then outlined laser etched, provides the 6" or 8" high by ¾" stroke EXIT letters with even illumination and no visible LEDs or hot spots. AC-Only models shall be 120/277VAC, 60Hz, with a power consumption of less then 1.4W. AC/DC models shall be 120/277VAC, 60Hz, with a power consumption of less then 1.4W and allows for DC operation from 6VDC to 24VDC, drawing less then 1.4W. Self-Powered models shall be 120/277VAC, 60Hz, with a power consumption of less then 2.3W and supplied with a sealed maintenance-free Nickel-Cadmium battery, providing at least 90 minutes illumination upon AC failure. When specified, the Self-Powered Exit Sign with Improved Diagnostics shall include a self-test and silent diagnostic function, managed by a micro-controller; it shall execute automatic tests for one minute every 30 days, 30 minutes every 60 days and 90 minutes annually. A diagnostic circuit shall continuously monitor the performance of the battery, charger module and LED lamps. When a fault is detected the pilot light shall change color from green to red and flash with a specific code. The red light is steady-on in case of a battery disconnect; it will flash with one blink for battery failure; two blinks for charger failure and four blinks for LED lamp failure. A label with the diagnostic legend shall be visible next to the pilot light. The Exit Sign shall be tested by the Underwriters Laboratories and listed to UL 924 standards. Meets NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards. Includes a five-year full warranty.

The Exit Sign shall be **Lightalarms®** Model _____.

ACCESSORIES

(Order as a separate item)

Pendant, White	**PW-***
Pendant, Black	**PB-***
Pendant, Gray	**PA-***

*Specify pendant length (12", 24", 36", etc).

TYPE _____

CATALOG # _____

_____

NOTES _____

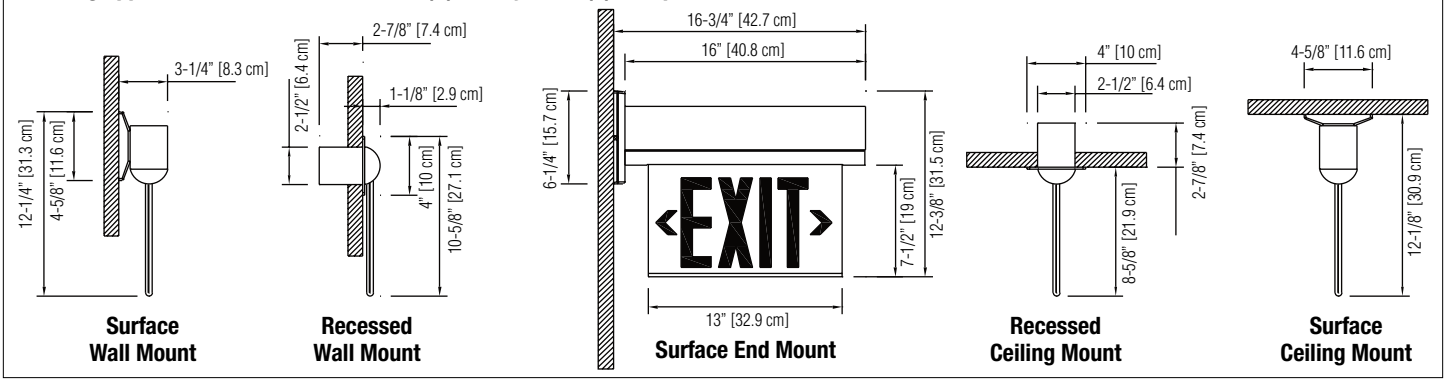
_____

The Simplicity™ Premium Series combines a clean, modular design with state-of-the art technology, ease of installation for surface or recessed mount applications and options to meet the most prestigious interiors

DIMENSIONS

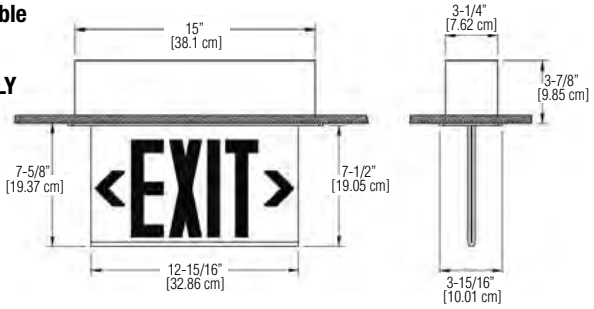
Dimensions are approximate and subject to change.

Mounting applications available with Dome (D) and Pyramid (P) trim plates



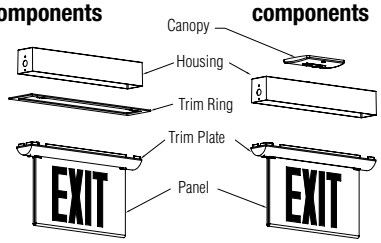
Mounting application available with Flat (Z) trim plate

Recessed Ceiling Mount ONLY



For Recessed Mount, use these components

For Surface Mount, use these components



POWER CONSUMPTION CHART

MODEL	AC SPECS		DC SPECS	
AC-Only	120-277VAC, 60Hz	Less than 1.4W	–	–
AC/DC	120-277VAC, 60Hz	Less than 1.4W	6 to 24VDC	Less than 1.4W
Self-Powered	120/277VAC, 60Hz	Less than 2.3W	Nickel-Cadmium battery	Min. 90 minutes
Self-Powered diagnostic	120/277VAC, 60Hz	Less than 2.3W	Nickel-Cadmium battery	Min. 90 minutes

ORDERING FORMAT

LEGEND	SERIES	HOUSING COLOR	LEGEND COLOR	PANEL BACKGROUND COLOR	TRIM PLATE	CHEVRON	OPTIONS
Blank= 6" EXIT legend **8**= 8" EXIT legend	**SLEDN**= AC-Only **SPLEDN**= Self-Powered	**A**= Brushed Aluminum **W**= White **B**= Black **DB**= Dark Bronze (painted) **PB**= Polished Brass **CH**= Polished Chrome	**R**= Red **G**= Green	**C**= Clear (single face only) **W**= White (single or double face) **M**= Mirror (single or double face)	**D**= Dome **P**= Pyramid **Z**= Flat Trim	**Blank**= No Chevron (single face sign) **2**= No Chevron (double face sign) **L**= Left Chevron (on a single face sign) **R**= Right Chevron (on a single face sign) **RL**= Left & Right Chevron (double face sign, one chevron on each side) **1D**= Double Chevron (on single face) **2D**= Double Chevron (double face sign, two chevrons on each side) **UA**= (2 Qty) for single & (4 Qty) for doubles Universal field stick on chevrons per face	**Blank**= No option **-X**= Less back box shipped separate **-LP**= Panel shipped separately **-FAF**= Fire Alarm Flasher (SP Only) **-FB**= Flasher & Buzzer (SP Only) **-ID**= Self-test and diagnostic (SP Only) **-Y**= Two circuits (AC Only) **-DC**= AC/DC model 6 to 24VDC **NEX**= NEXUS® Wired[1] **NEXRF**= NEXUS® Wireless[1] [1] Consult your sales representative For Special Wording, please contact your sales representative

EXAMPLE: SPLEDNARWDL

SIMPLICITY™ ECONOMIZER SE, SES & SEN SERIES

Surface or Recessed Mount Edge-Lit Exit Sign

FEATURES

Construction

- Surface mount model housing made of extruded aluminum, canopy made of die-cast aluminum
- Recessed mount model housing made of 20 gauge steel, includes formed steel flat trim plate and bar hangers
- Legend panel features a curved contour for maximum illumination and clarity
- 6 inch EXIT lettering legend available in Red or Green
- 8 inch EXIT lettering legend in Red only

Mounting

Surface Mount Models

- Single face model includes (1) legend panel, (1) housing and (1) canopy
- Double face model includes (1) legend panel (with EXIT printed on each side), (1) housing and (1) canopy
- Canopy included for wall, end or ceiling mount applications

Recessed Ceiling Mount Only Models

- Single face model includes (1) legend panel, (1) backbox and bar hangers
- Double face model includes (1) legend panel (with EXIT printed on each side), (1) backbox and bar hangers

Finishes

- Choice of housing and trim plate finishes, off white or textured aluminum
- Choice of Legend panel colors, red on clear, red on white, red on mirror, green on clear or green on mirror

Chevrons

- Field installed stick-on translucent chevrons, (2) for single face, (4) for double face

LEDs

- Red or Green Long-Life Light Emitting Diodes (LED) illumination

Self-Diagnostics

- Not Available

Special Wording Panels

- Available. Contact your sales representative with your design requirements

Approvals

- Listed to UL 924 Standards
- Meets NFPA101 (Life Safety Code), NFPA 70 NEC, OSHA illumination standards

Warranty

- Three Year full warranty (subject to proper installation and maintenance)

SPECIFICATIONS

Supply and Install **Lightalarms® Simplicity™ Economizer SE, SES, SEN** Series.

The Exit Sign specified as surface mount single face shall be standard with (1) legend panel, (1) housing and (1) canopy and specified as double face shall be standard with (1) legend panel (with EXIT printed on each side) (1) housing and (1) canopy. The Exit Sign specified as recessed mount single face shall be standard with (1) legend panel, (1) backbox and bar hangers and specified as double face shall be standard with (1) legend panel (with EXIT printed on each side) backbox and bar hangers.

Surface mount models housing shall be made of extruded aluminum, canopy made of die-cast aluminum. Housing and canopy shall be matching in color, (OW) off white or (TA) textured aluminum. Recessed ceiling mount only models housing shall be made of 20 gauge steel, includes formed steel flat trim plate and bar hangers. Trim plate shall be in color, (OW) off white or (TA) textured aluminum. Legend panel colors shall be (RC) red on clear, (RW) red on white, (RM) red on mirror, (GC) green on clear or (GM) green on mirror.

Click-to-open housing door allows easy access to legend panel and electrical wiring. The legend panel shall come standard with (4) field installed stick-on translucent directional chevron indicators. The surface mount single face Exit Sign shall be suitable for surface wall, end or ceiling installations. The surface mount double face Exit Sign shall be suitable for surface end or ceiling installations. The recessed mount single face or double face Exit Sign shall be suitable for recessed ceiling installations.

The illumination source shall be Light Emitting Diodes (LED) in (R) red or (G) green color. The LEDs shall provide illumination in normal and emergency operation mode. The LEDs shall be mounted inside the Exit Sign housing on a PCB strip. A color matching LED sensitive EXIT legend silkscreened in (R) red or (G) green, provides the 6" high by ¾" stroke EXIT letters with even illumination and no visible LEDs or hot spots.

AC-Only models shall be 120/277VAC, 50/60Hz, with power consumption of less than 2W.

AC/DC models shall be 120/277VAC, 50/60Hz, with power consumption of less than 2W and allows for DC operation from 6VDC to 24VDC, drawing less then 1.5W.

Self-Powered models shall be 120/277VAC, 50/60Hz, with power consumption of less than 3W and be supplied with a sealed maintenance-free Nickel-Cadmium battery, providing at least 90 minutes illumination upon AC failure.

The Exit Sign shall be tested by Underwriters Laboratories and listed to UL 924 standards. Meets NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards. Includes a three-year full warranty.

The Exit Sign shall be **Lightalarms®** Model _____.

RECESSED MOUNT MODELS

TYPE _____

CATALOG # _____

_____

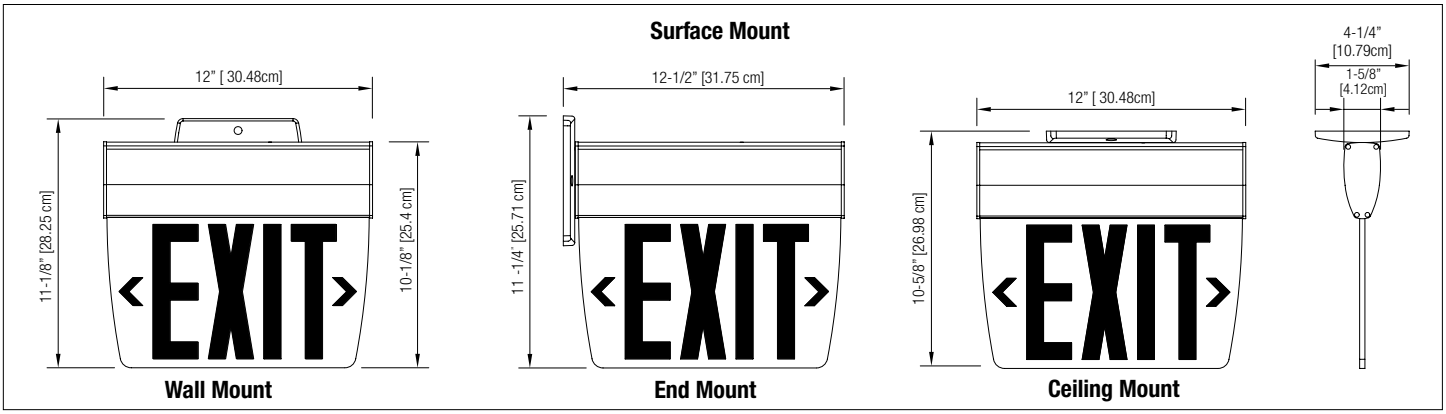
NOTES _____

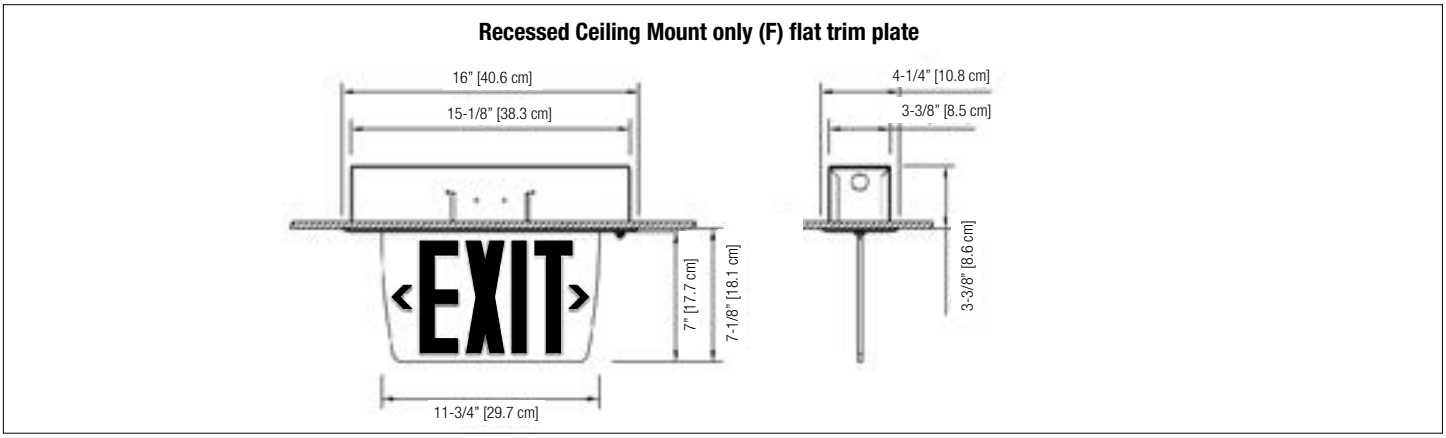
_____

The Simplicity™ Economizer Edge-Lit Exit Sign combines value and elegance complementing any interior design

DIMENSIONS

Dimensions are approximate and subject to change.





POWER CONSUMPTION CHART

MODEL	AC SPECS		DC SPECS	
AC-Only	120/277VAC, 50/60Hz	Less than 2W	–	–
AC/DC	120/277VAC, 50/60Hz	Less than 2W	6 to 24VDC	Less than 1.5W
Self-Powered	120/277VAC, 50/60Hz	Less than 3W	Nickel-Cadmium battery	Minimum of 90 minutes

ORDERING FORMAT

6 INCH SERIES	TRIM	HOUSING COLOR	LEGEND COLOR	FACE
SE= AC-Only **SES**= AC/DC **SEN**= Self-Powered	**Blank**= Surface Mount Only **F**= Recessed Mount Only (flat trim)	**TA**= Textured Aluminum **OW**= Off White	**RC**= Red on clear[1] **RW**= Red on white **RM**= Red on mirror **GC**= Green on clear[1] **GM**= Green on mirror *Green on white not available. [1] Single face only.	**1**= Single face **2**= Double face
8 INCH SERIES	**TRIM**	**HOUSING COLOR**	**LEGEND COLOR**	**FACE**
8SE= AC-Only **8SES**= AC/DC **8SEN**= Self-Powered	**Blank**= Surface Mount	**TA**= Textured Aluminum **OW**= Off White	**RC**= Red on clear[1] **RW**= Red on white **RM**= Red on mirror [1] Single face only.	**1**= Single face **2**= Double face

EXAMPLE: SEFOWRC1

SIMPLICITY™ EDGE-LIT SERIES

Single and Double face, Surface and Recessed* Mount Edge-Lit Exit Sign

FEATURES

Construction

- Extruded Aluminum Housing
- Impact resistant Thermoplastic plastic end caps and canopy
- High grade acrylic panel
- 6 inch EXIT lettering legend, available in Red or Green
- Damp location Listed

Mounting

Universal Mount Model

- Double face acrylic panel with mirror background, field adaptable for single face
- Pivoting panel design allows for recessed, surface, wall or ceiling mount installation
- A ratcheting mechanism allows the panel to be set in place from 0° to 180° for wall or sloped ceiling mounting
- Canopy included for surface wall, end or ceiling mount application
- Trim plate, 27 inch adjustable T-Bar hangers and a junction box included for recessed* application

Finishes

- Satin Aluminum housing
- Black end caps and matching canopy
- Choice of Legend panel color, red on mirror or green on mirror

Chevrons

- (4) Factory installed translucent chevrons, allowing for easy peel-off removal as required

LEDs

- Red or Green long life Light Emitting Diodes (LED) Illumination

Self-Diagnostics

- Not available

Special Wording Panels

- Not available

Approvals

- Listed to UL 924 Standards
- UL Listed for Damp location (32°F to 104°F, 0°C to 40°C)
- Meets, NFPA101, (Life Safety Code) NFPA 70-NEC and OSHA illumination Standards

Warranty

- Three Year full warranty (subject to proper installation and maintenance)

* Not intended for closed ceilings such as plaster and sheetrock.

SPECIFICATIONS

Supply and Install **Lightalarms® Simplicity™ Universal Edge-Lit** Series.

The Exit Sign specified as universal mount shall be standard with (1) legend panel, design for both single face or double face applications with (1) additional mirror panel (4) peel-off translucent directional chevrons; (1) housing, (1) canopy (1) Trim plate (2) 27 inch T-Bar Hangers* and (1) junction box.

Universal mount model housing shall be fabricated of extruded aluminum; canopy and end caps shall be impact resistant Thermoplastic. Housing shall be in color satin aluminum with canopy and end caps in black. Legend panel colors shall be, (RM) red on mirror, (GM) green on mirror as specified.

Acrylic panel shall be in double face EXIT legend configuration printed in red or green, as specified, on a mirror background. If a single face is required, an addition at mirror panel is supplied to be field installed covering the additional EXIT face legend. The acrylic panel shall pivot and ratchet lock into positions from 0° to 180° to allow for wall, flat or sloped ceiling applications. (4) Factory installed translucent chevrons, allowing for easy peel-off removal to be configured in the field as required by Code.

The illumination source shall be Light Emitting Diodes (LED) in (R) red or (G) green color. The LEDs shall provide illumination in normal and emergency operation mode. The LEDs shall be mounted inside the Exit Sign housing on a PCB strip. A color matching LED sensitive EXIT legend silkscreened in (R) red or (G) green, provides the 6" high by ¾" stroke EXIT letters with even illumination and no visible LEDs or hot spots.

AC-Only models shall be 120/277VAC, 60Hz, with a power consumption of less then 4W.

Self-Powered models shall be 120/277VAC, 60Hz, with a power consumption of less than 4W and supplied with a sealed maintenance-free nickel cadmium battery, providing a minimum of 90 minutes illumination upon AC failure.

The Exit Sign shall be tested by the Underwriting Laboratories and listed to UL 924 standards. Meeting NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards. Includes a three-year full warranty.

The Exit Sign shall be **Lightalarms®** Model: _____ .

NEW! **UNIVERSAL PANEL**

TYPE _____

CATALOG # _____

_____

NOTES _____

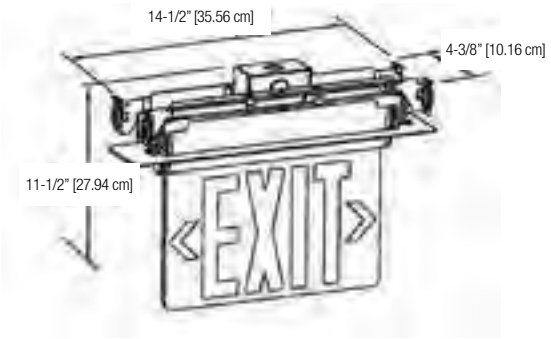
_____

The Simplicity™ Edge-Lit Exit Sign offers an edge-lit exit that comes complete "all in one box" with a double face exit panel, field adaptable to single face and all the mounting hardware for surface and recess mount applications

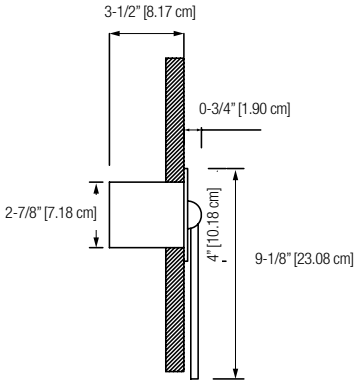
DIMENSIONS

Dimensions are approximate and subject to change.

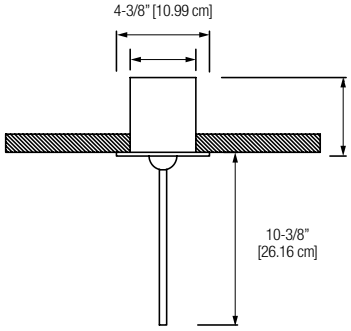
Recessed Ceiling Mount



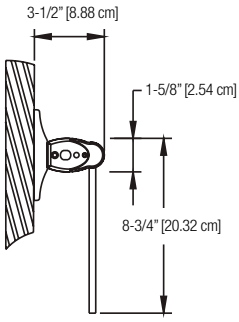
Recessed Wall Mount (side view)



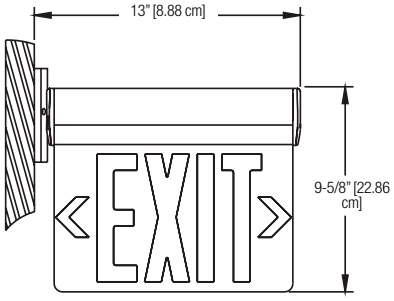
Recessed Ceiling Mount (side view)



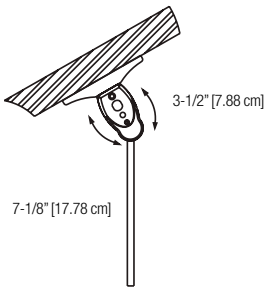
Surface Wall Mount



Surface End Mount



Surface Sloped Ceiling Mount



POWER CONSUMPTION CHART

MODEL		AC SPECS		DC SPECS	
Red	AC-Only	120VAC, 60Hz	2.0-2.6W	–	–
		277VAC, 60Hz	2.6-3.1W	–	–
	Self-Powered	120VAC, 60Hz	2.0-2.6W	Nickel-Cadmium battery	Minimum 90 Minutes
		277VAC, 60Hz	2.6-3.1W	Nickel-Cadmium battery	Minimum 90 Minutes
Green	AC-Only	120VAC, 60Hz	2.8-3.3W	–	–
		277VAC, 60Hz	3.5-4W	–	–
	Self-Powered	120VAC, 60Hz	2.8-3.3W	Nickel-Cadmium battery	Minimum 90 Minutes
		277VAC, 60Hz	3.5-4W	Nickel-Cadmium battery	Minimum 90 Minutes

ORDERING FORMAT

LEGEND	SERIES	LEGEND COLOR
6= 6" EXIT single and double face with universal chevrons and mounting for surface or recessed	**UEA**= AC Only **UEN**= Self-Powered	**RM**= Red on Mirror **GM**= Green on Mirror

EXAMPLE: 6UEARM

GENESIS™ "OVER THE DOOR" & "FLOOR PROXIMITY" TANDEM SERIES

Genesis™ Master with Remote Floor Proximity LED Exit

FEATURES

Genesis™ GXM, GXEM "Over the Door" & FP-GX "Floor Proximity" Tandem Exit Signs (must be ordered together)

Construction

- GXM, GXEM "Over the Door" exit faceplate, backplate and canopy are made of die-cast aluminum
- GXM, GXEM offers a choice of 6 inch or 8 inch EXIT lettering legend, available in Red or Green
- FP-GX "Floor Proximity" exit faceplate is made of die-cast aluminum; backbox is made of 20 gauge steel
- FP-GX offers 6 inch EXIT lettering legend, available in Red or Green

Mounting

- GXM, GXEM Surface Mount only
- Single face model includes (1) faceplate, (1) back-plate and (1) canopy
- Canopy included for ceiling mount applications
- Backplate features universal knockouts for a standard 4 inch junction box, used in wall mount applications
- FP-GX Surface Mount or Recessed Mount
- Single face model only

Finishes

- Choice of finishes: white, black or brushed aluminum

Chevrons

- GXM, GXEM faceplate includes two field-selectable, knock-out chevron indicators
- FP-GX faceplate does not include chevron indicators

LEDs

- Red or Green Long-Life Light Emitting Diodes (LED) illumination

Self-Diagnostics

- GXM, GXEM Self-Powered model standard with Improved Diagnostics

Special Wording Panel

- Not Available

Approvals

- Listed to UL 924 Standards
- CSA-US Approved
- Meets NFPA101 (Life Safety Code), NFPA 70 NEC, OSHA illumination standards

Warranty

- Five-Year full warranty (subject to proper installation and maintenance)

ACCESSORIES

Wire Guard (for floor proximity recessed)	**WG11-L**

SPECIFICATIONS

Supply and Install **Lightalarms® Genesis™ GXM, GXEM & FP-GX** Series.

The GXM, GXEM Exit Sign specified as single face shall be standard with (1) faceplate, (1) backplate and (1) canopy. FP-GX Exit Sign shall be specified as single face, surface mount or recessed mount.

The GXM, GXEM faceplate, backplate and canopy shall be constructed of die-cast aluminum. Backplate and canopy shall be matching in color, (W) white (B) black or (A) brushed aluminum Faceplate shall be (W) white, (B) black or (A) brushed aluminum with a (R) red or (G) green legend.

Snap together clam shell design, allows for no screws being necessary to hold the faceplate(s) or backplate together. The faceplate shall come standard with two field-selectable, removable knockout chevron indicators. The single face Exit Sign shall be suitable for surface mount, wall, end or ceiling installations.

The FP-GX faceplate shall be constructed of die-cast aluminum. Faceplate shall be (W) white, (B) black or (A) brushed aluminum with a (R) red or (G) green legend. Four screws shall be necessary to hold the faceplate and backbox together. The faceplate does not have chevron indicators. The single face Exit Sign shall be suitable for wall surface mount, or wall recessed mount installations.

The illumination source shall be Light Emitting Diodes (LED) in (R) red or (G) green color. The LEDs shall provide illumination in normal and emergency operation mode. The LEDs shall be mounted inside the Exit Sign housing. A color matching LED sensitive legend diffuser of (R) red or (G) green, shall be mounted in front of the LEDs to provide the 6" or 8" inch high by ¾" stroke EXIT letters with even illumination and no visible LEDs or hot spots.

GXM, AC-Only models shall be 120/277VAC, 60Hz, with a power consumption of 1.5W.

GXEM, Self-Powered models shall be 120/277VAC, 60Hz, with a power consumption of 3.8W and supplied with a sealed maintenance-free Nickel-Cadmium battery, providing at least 90 minutes illumination upon AC failure to itself including the FP-GX Exit Sign.

GXEM Self-Powered Exit Sign with Improved Diagnostics shall include a self-test and silent diagnostic function, managed by a micro-controller; it shall execute automatic tests for one minute every 30 days, 30 minutes every 60 days and 90 minutes annually. A diagnostic circuit shall continuously monitor the performance of the battery, charger module and LED lamps. When a fault is detected the pilot light shall change color from green to red and flash with a specific code. The red light is steady-on in case of a battery disconnect; it will flash with one blink for battery failure; two blinks for charger failure and four blinks for LED lamp failure. A label with the diagnostic legend shall be visible next to the pilot light.

FP-GX, Exit Sign emergency operation is provided by a GXEM Exit Sign or a GXE Exit Sign with a AC-Only 2 circuit back-up system.

The Exit Sign shall be CSA-US Approved, evaluated to UL 924 Standards, and meet NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards. Includes a five-year full warranty.

The "over the door" Exit Sign shall be **Lightalarms®** Model

_____

The "floor proximity" Exit Sign shall be **Lightalarms®** Model

_____

TYPE _____

CATALOG # _____

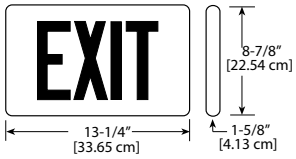
NOTES _____

Combine style, performance and durability with added safety. The floof level indicator provides a egress path even if the ceiling Exit Sign is not totally visible due to rising smoke.

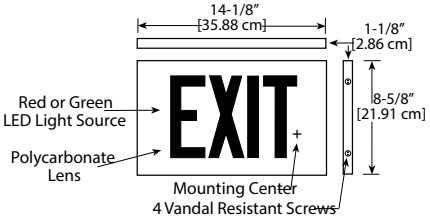
DIMENSIONS

Dimensions are approximate and subject to change.

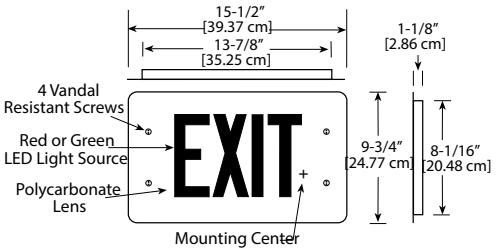
Over the Door Exits



Floor Proximity Surface Mount Exits

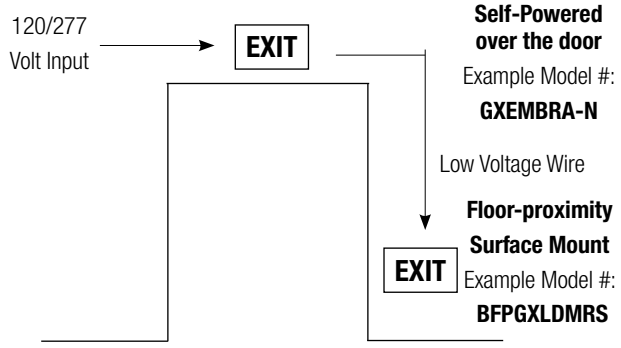


Floor Proximity Recessed Mount Exits

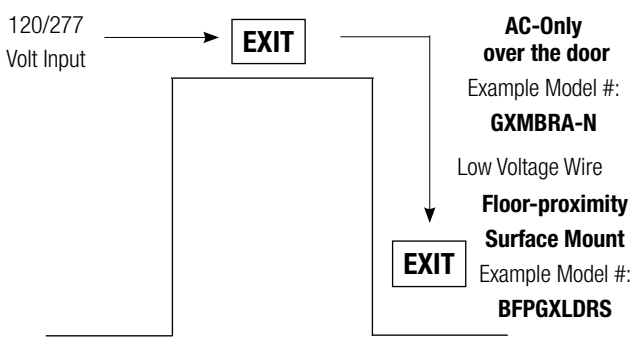


HOW TO ORDER TYPICAL APPLICATIONS (Must be ordered as a Tandem, over the door with a floor proximity Exit Sign)

Self-Powered GXEM (over the door) exit with a FPGXLDM (floor proximity) exit tandem



AC-Only GXM (over the door exit) with a FPGXLD (floor proximity) exit tandem



POWER CONSUMPTION CHART

	MODEL	AC SPECS		DC SPECS	
RED	AC-Only	120/277VAC, 60Hz	1.5W	–	–
	AC-2 Circuit	120/120VAC and 277/277VAC, 60Hz	2.6W	–	–
	Self-Powered	120/277VAC, 60Hz	3.8W	Nickel-Cadmium battery	Minimum of 90 minutes
GREEN	AC-Only	120/277VAC, 60Hz	0.9W	–	–
	AC-2 Circuit	120/120VAC and 277/277VAC, 60Hz	3.3W	–	–
	Self-Powered	120/277VAC, 60Hz	5W	Nickel-Cadmium battery	Minimum of 90 minutes

ORDERING FORMAT (Must order "Over the Door" GX or GXM Exit Sign and a "Floor Proximity" FP-GL Exit Sign as a tandem)

Over the Door Exit Sign

SERIES	FRAME COLOR	LEGEND COLOR	FACE PLATE COLOR	VERSION	OPTION
GXM= AC-Only or 2 circuit model **GXEM**= Self-Powered	**A**= Brushed Aluminum Body **B**= Black Body **W**= White Body	**R**= Red **G**= Green	**A**= Brushed Aluminum **B**= Black **W**= White	**-N**	**-2**= 2 circuit (120/120 or 277/277) (For use with GXM Series)

EXAMPLE: GXEMBRA-N

Floor Proximity Exit Sign

FRAME COLOR	SERIES	LEGEND COLOR	TRIM	OPTION
A= Brushed Aluminum Body **B**= Black Body **W**= White Body	**FPGXLD=** For use with GXM Series	**R**= Red **G**= Green	**R**= Recessed Mount **S**= Surface Mount	**-VR**= Vandal Resistant Polycarbonate lens and screws

EXAMPLE: BFPGXLDMRS

GENESIS™ GX & GXE SERIES

Die-Cast Aluminum LED Exit Sign

FEATURES

Construction

- Faceplate, backplate and canopy are made of die-cast aluminum
- Choice of 6 inch or 8 inch EXIT lettering legend, available in Red or Green

Mounting

- Surface Mount
- Single face model includes (1) faceplate, (1) back-plate and (1) canopy
- Double face model includes (2) faceplates and (1) canopy
- Canopy included for end or ceiling mount applications
- Backplate features universal knockouts for a standard 4 inch junction box, used in wall mount applications

Finishes

- Choice of finishes: white, black or brushed aluminum
- Optional Dark Bronze or Polished Brass available

Chevrons

- Faceplate includes two field-selectable, knock-out chevron indicators

LEDs

- Red or Green Long-Life Light Emitting Diodes (LED) illumination

Self-Diagnostics

- Self-Powered models standard with Improved Diagnostics
- NEXUS® Wired or Wireless system compatible

Special Wording Panel

- Available. Contact your sales representative with your design requirements

Approvals

- CSA-US Approved
- Evaluated to UL 924. Damp location optional (50°F to 104°F, 10°C to 40°C)
- Meets NFPA101 (Life Safety Code), NFPA 70 NEC, OSHA illumination standards

Warranty

- Five-Year full warranty (subject to proper installation and maintenance)

ACCESSORIES

(Order as a separate item)

Pendant Mount White	**GPW-***
Pendant Mount Black	**GPB-***
Pendant Mount Gray	**GPA-***
Wire Guard (Wall Mount) (6 in.)	**WG13-L**
Wire Guard (Ceiling Mount) (6 in.)	**WG14-L**
Wire Guard (End Mount) (6 in.)	**WG15-L**
Vandal Shield (Wall Mount)	**VRC**
Vandal Shield, NEMA-4X (Wall Mount)	**VRC-4X**

*Specify length of pendant (12", 24", 36", etc.)

SPECIFICATIONS

Supply and Install **Lightalarms® Genesis™ GX, GXE** Series.

The Exit Sign specified as single face shall be standard with (1) faceplate, (1) backplate and (1) canopy and specified as double face shall be standard with (2) faceplates and (1) canopy.

The faceplate, backplate and canopy shall be constructed of die-cast aluminum. Frame, backplate and canopy shall be matching in color, (W) white (B) black or (A) brushed aluminum Faceplate shall be (W) white, (B) black or (A) brushed aluminum with a (R) red or (G) green legend.

Snap together clam shell design, allows for no screws being necessary to hold the faceplate(s) or backplate together. The faceplate shall come standard with two field-selectable, removable knockout chevron indicators. The single face Exit Sign shall be suitable for surface mount, wall, end or ceiling installations. The double face Exit Sign shall be suitable for surface mount, end or ceiling installations.

The illumination source shall be Light Emitting Diodes (LED) in (R) red or (G) green color. The LEDs shall provide illumination in normal and emergency operation mode. The LEDs shall be mounted inside the Exit Sign housing. A color matching LED sensitive legend diffuser of (R) red or (G) green, shall be mounted in front of the LEDs to provide the 6" or 8" inch high by 3/4" stroke EXIT letters with even illumination and no visible LEDs or hot spots.

AC-Only models shall be 120-347VAC, 50/60Hz with power consumption of 1.25W in 6" and 2.5W in 8" models and include wiring to allow for DC emergency operation from an external 6VDC to 48VDC battery source, consuming only 1.5W in DC-remote operation.

Self-Powered models shall be 120-347VAC, 50/60Hz, with power consumption of 1.5W in 6" and 2.6W in 8" models and supplied with a sealed maintenance-free Nickel-Cadmium battery, providing at least 90 minutes illumination upon AC failure.

Self-Powered Exit Sign with Improved Diagnostics shall include a self-test and silent diagnostic function, managed by a micro-controller; it shall execute automatic tests for one minute every 30 days, 30 minutes every 60 days and 90 minutes annually. A diagnostic circuit shall continuously monitor the performance of the battery, charger module and LED lamps. When a fault is detected the pilot light shall change color from green to red and flash with a specific code. The red light is steady-on in case of a battery disconnect; it will flash with one blink for battery failure; two blinks for charger failure and four blinks for LED lamp failure. A label with the diagnostic legend shall be visible next to the pilot light.

The Exit Sign shall be CSA-US Approved and evaluated to UL 924 standard for Damp location optional (50°F to 104°F, 10°C to 40°C). The Exit Sign shall meet NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards. Includes a five-year full warranty.

The Exit Sign shall be **Lightalarms®** Model _____.

TYPE _____

CATALOG # _____

_____

NOTES _____

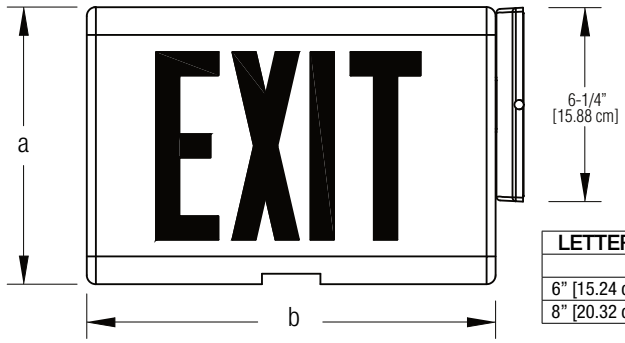
_____

nexus

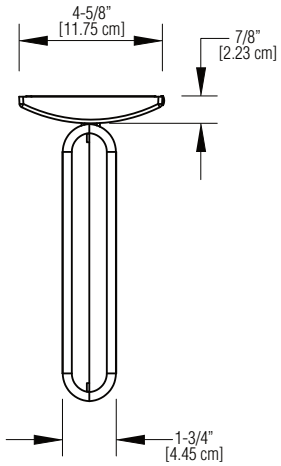
Combine visual appeal, durability and energy efficiency in a compact, contemporary design. For added reliability choose Self-Powered models that include self-diagnostics as a standard feature.

DIMENSIONS

Dimensions are approximate and subject to change.



LETTERS	DIMENSIONS	
	Dim a	**Dim b**
6" [15.24 cm]	8-7/8" [22.54 cm]	13-1/16" [33.18 cm]
8" [20.32 cm]	10-1/2" [26.67 cm]	15-1/4" [38.74 cm]



POWER CONSUMPTION CHART

MODEL (6 inch EXIT legend)	AC SPECS		DC SPECS	
AC-only	120/347VAC, 50/60Hz	1.25W	–	–
AC/DC	120/347VAC, 50/60Hz	1.25W	6 to 48VDC	Less than 1.5W
Self-Powered	120/347VAC, 50/60Hz	1.6W	Nickel-Cadmium battery	Minimum of 90 minutes

MODEL (8 inch EXIT legend)	AC SPECS		DC SPECS	
AC-only	120/347VAC, 50/60Hz	2.5W		
AC/DC	120/347VAC, 50/60Hz	2.5W	6 to 48VDC	1.6W
Self-Powered	120/347VAC, 50/60Hz	2.9W	Nickel-Cadmium battery	Minimum of 90 minutes

ORDERING FORMAT

NO. OF FACE	SERIES	BACK PLATE/ FRAME COLOR	LEGEND COLOR	FACE PLATE COLOR	DIAGNOSTIC OPTION[1]	OPTIONS	VERSION
Blank= 6" single face **2**= 6" double face **8**= 8" single face **82**= 8" double face	**GX**= AC-Only **GXE**= Self-Powered	**A**= Brushed Aluminum **B**= Black **W**= White **Optional** **DB**= Dark Bronze (painted) **PB**= Polished Brass **CH**= Polished Chrome	**R**= Red **G**= Green	**A**= Brushed Aluminum **B**= Black **W**= White **Optional** **DB**= Dark Bronze (painted) **PB**= Polished Brass **CH**= Polished Chrome	**Blank**= Standard Improved Diagnostic (non-audible) **NEX**= NEXUS® Wired[2,3] [1] Available with Self-Powered GXE exit only [2] NEX is CSA-US approved only [3] Consult your sales representative	**Blank**= No option **-DC**= AC/DC 6-48VDC[1] **-DL**= Damp location **-FAF**= Fire Alarm Flasher **-FB**= Flasher Buzzer (Self-Powered only)[2] **-VR**= Vandal Resistant Screws **-LVR**= Vandal Resistant Polycarbonate lens and screws **-Y**= Open faceplate and Special wording faceplate **-2**= 2 Circuit (120/120 or 277/277, AC-Only) [1] Available with GX model only [2] Not available with Nexus® option	**-N**

EXAMPLE: GXEARA-N

Lightalarms

nexus id improved diagnostics UL

GALAXY™ XD & XDN SERIES

Die-Cast Aluminum LED Exit Sign. Superior workmanship, versatile mounting capabilities and long lasting LED performance in an economical design

TYPE _____

CATALOG # _____

NOTES _____

FEATURES

Construction
- Frame, faceplate, backplate and canopy are made of die-cast aluminum
- 6 inch EXIT lettering legend available in Red or Green

Mounting
- Surface Mount
- Single face model includes (1) faceplate, (1) back-plate and (1) canopy
- Double face model includes (2) faceplates and (1) canopy
- Canopy included for end or ceiling mount applications
- Backplate features universal knockouts for a standard 4 inch junction box used in wall mount applications

Finishes
- Choice of finishes: white, black or brushed aluminum

Chevrons
- Faceplate includes two field-selectable, knock-out, chevron indicators

LEDs
- Red or Green Long-Life Light Emitting Diodes (LED) illumination

Self-Diagnostics
- Self-Powered models available with or without Improved Diagnostics
- NEXUS® wired or wireless system compatible.

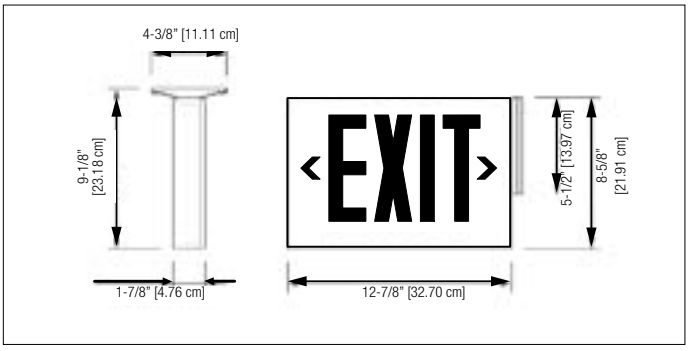
Special Wording Panels:
- Available. Contact your sales representative with your design requirements

Approvals
- Listed to UL 924 Standards
- Option: UL listed for Damp location (50°F to 104°F, 10°C to 40°C)
- Meets NFPA101 (Life Safety Code), NFPA 70 NEC, OSHA illumination standards

Warranty
- Five-Year full warranty (subject to proper installation and maintenance)

DIMENSIONS

Dimensions are approximate and subject to change.



SPECIFICATIONS

Supply and Install **Lightalarms® Galaxy™ XD, XDN** Series.

The Exit Sign specified as single face shall be standard with (1) faceplate, (1) backplate and (1) canopy and specified as double face shall be standard with (2) faceplates and (1) canopy.

The frame, faceplate, backplate and canopy shall be constructed of die-cast aluminum. Frame, backplate and canopy shall be matching in color, (W) white (B) black or (A) brushed aluminum. Faceplate shall be (W) white, (B) black or (A) brushed aluminum with a (R) red or (G) green legend.

Snap together design, no screws needed to hold the frame, faceplate(s) or backplate together. The faceplate includes two removable knockout chevrons. Single face Exit Sign shall be for surface, wall, end or ceiling installations. Double face Exit Sign shall be for surface, end or ceiling installations.

Illumination source shall be Light Emitting Diodes (LED) in (R) red or (G) green color. The LEDs shall provide illumination in normal and emergency operation mode. A color matching LED sensitive legend of (R) red or (G) green, shall be mounted in front of the LEDs to provide 6" high by 3/4" stroke EXIT letters evenly illuminated, no visible LEDs or hot spots.

AC-Only models; 120/277VAC, 60Hz, power consumption less than 2.5W.

AC/DC models; 120/277VDC, 60Hz, power consumption less than 2W, DC operation, 6VDC to 48VDC, using less than 1.5W.

Self-Powered models; 120/277VAC, 60Hz, power consumption less than 3W, with Self-Diagnostics option, less than 2.8W, each supplied with a sealed maintenance-free Nickel-Cadmium battery, providing at least 90 minutes illumination upon AC failure.

Self-Powered Exit Sign with Improved Diagnostics include a self-test and diagnostic function, managed by a micro-controller; it shall execute automatic tests for one minute every 30 days, 30 minutes every 60 days and 90 minutes annually. Diagnostic circuit shall continuously monitor the performance of the battery, charger and LED lamps. When a fault is detected the pilot light will change from green to red and flash. Flash legend indicating the fault shall be next to the pilot light.

The Exit Sign shall be listed to UL 924 standards, UL listed for Damp location (50°F to 104°F, 10°C to 40°C) optional and meet NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards. Includes a five-year full warranty.

The Exit Sign shall be **Lightalarms®** Model _____.

POWER CONSUMPTION CHART

MODEL	AC SPECS		DC SPECS	
AC-Only	120/277VAC, 60Hz	Less than 2.5W	–	–
AC / DC-remote	120/277VAC, 60Hz	Less than 2W	6 to 48VDC	Less than 1.5W
Self-Powered	120/277VAC, 60Hz	Less than 3.3W	Nickel-Cadmium battery	Min. 90 minutes
Self-Powered with Diagnostic	120/277VAC, 60Hz	Less than 2.8W	Nickel-Cadmium battery	Min. 90 minutes

ORDERING FORMAT

NO. OF FACE	SERIES	BACKPLATE/ FRAME COLOR	LEGEND/FACEPLATE COLOR	OPTIONS
1= Single face **2**= Double face	**Standard Models** **XDA**= AC-Only **XDC**= AC/DC **XDND**= Self-Powered WITH Improved Diagnostics **XDN**= Self-Powered WITHOUT Improved Diagnostics **Optional Models** **XD21**= Dual AC circuit (2 x 120V) **XD22**= Dual AC circuit (2 x 277V) **XDNEX**= NEXUS® Wired[1] **XDNEXRF**= NEXUS® Wireless[1] [1] Consult your sales representative.	**B**= Black **W**= White **A**= Brushed aluminum	**RB**= Red/Black **GB**= Green/Black **RW**= Red/White **GW**= Green/White **RA**= Red/Brushed Aluminum **GA**= Green/Brushed Aluminum	**Blank**= No option **-FB**= Flasher buzzer[1] **-FL**= Flasher[1] **-FAF**= Fire Alarm Flasher (not available with XDN model) **-FBF**= Fire alarm activated flasher and Flasher Buzzer[1] **-VR**= Vandal Resistant Screws **-LVR**= Vandal Resistant Polycarbonate lens and screws **-DL**= Damp location (50°F minimum, 104°F maximum ambient, 10°C minimum, 40°C maximum) **-Y**= Open faceplate and special wording faceplate For Pendant Kit see p. 51 [1] Available with XDND, XDNEX, and XDNEXRF only.

EXAMPLE: 2XDABRB

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

GALAXY™ SLIM TX & TXE SERIES

Die-Cast aluminum slim profile Exit Sign with long-lasting LED performance

FEATURES

Construction
- Faceplate, backplate and canopy are made of die-cast aluminum
- 6 inch EXIT lettering legend, available in Red or Green

Mounting
- Surface Mount
- Single face model includes (1) faceplate, (1) back-plate and (1) canopy
- Double face model includes (2) faceplates and (1) canopy
- Canopy included for end or ceiling mount applications
- Backplate features universal knockouts for a standard 4 inch junction box, used in wall mount applications

Finishes
- Choice of finishes: all white, or black with brushed aluminum faceplate
- Clear lacquer finish inhibits fingerprints and other contaminants

Chevrons
- Faceplate includes two field-selectable, knock-out chevron indicators

LEDs
- Red or Green Long-Life Light Emitting Diodes (LED) illumination

Self-Diagnostics
- Not Available

Special Wording Panels
- Not Available

Approvals
- Listed to UL 924 Standards for Damp location (32°F to 122°F, 0°C to 50°C)
- Meets NFPA101 (Life Safety Code), NFPA 70 NEC, OSHA illumination standards

Warranty
- Five-Year full warranty (subject to proper installation and maintenance)

ACCESSORIES

(Order as a separate item)

Wire Guard (Wall Mount)	**WG1-L**
Wire Guard (Ceiling Mount and End Mount)	**WG5-L**

POWER CONSUMPTION CHART

MODEL	AC SPECS			DC SPECS	
AC-Only	120/277VAC, 60Hz	Typical 1W	Less than 1.5W	–	–
Self-Powered	120/277VAC, 60Hz	Less than 3.3W	Less than 1.5W	Ni-Cd battery	Min. 90 minutes

SPECIFICATIONS

Supply and Install **Lightalarms® Galaxy™ Slim TX, TXE** Series.

The Exit Sign specified as single face shall be standard with (1) faceplate, (1) backplate and (1) canopy and specified as double face shall be standard with (2) faceplates and (1) canopy.

The faceplate, backplate and canopy shall be constructed of die-cast aluminum. Backplate and canopy shall be matching in color, (W) white or (B) black. Faceplate shall be (W) white (with a white backplate) or (A) brushed aluminum (with a black backplate) covered with a clear lacquer finish.

Snap together design, allows for no screws being necessary to hold the faceplate(s) or backplate together. The faceplate shall come standard with two field-selectable, removable knockout chevron indicators. The single face Exit Sign shall be suitable for surface mount, wall, end or ceiling installations. The double face Exit Sign shall be suitable for surface mount, end or ceiling installations.

The illumination source shall be Light Emitting Diodes (LED) in (R) red or (G) green color. The LEDs shall provide illumination in normal and emergency operation mode. The LEDs shall be mounted inside the Exit Sign housing. A color matching LED sensitive legend diffuser of (R) red or (G) green, shall be mounted in front of the LEDs to provide the 6" high by ¾" stroke EXIT letters with even illumination and no visible LEDs or hot spots.

AC-Only models shall be 120/277VAC, 60Hz, with a maximum power consumption of 1.5W.

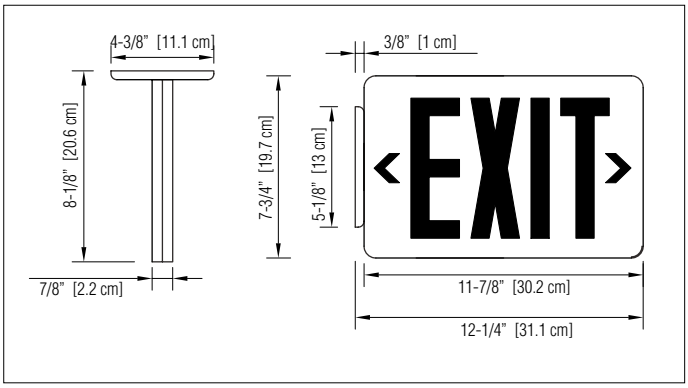
Self-Powered models shall be 120/277VAC, 60Hz, maximum 1.5W and supplied with a sealed maintenance-free Nickel-Cadmium battery, providing at least 90 minutes illumination upon AC failure.

The Exit Sign shall be tested by Underwriters Laboratories, listed to UL 924 standards, and UL listed for Damp location (32°F to 122°F, 0°C to 50°C) and meets NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards. Includes a five-year full warranty.

The Exit Sign shall be **Lightalarms®** Model _____.

DIMENSIONS

Dimensions are approximate and subject to change.



ORDERING FORMAT

NO. OF FACE	SERIES	BACKPLATE COLOR	LEGEND COLOR	FACEPLATE COLOR
Blank= Single Face **2**= Double Face	**TX**= AC-Only **TXE**= Self-Powered	**W**= White **B**= Black	**R**= Red **G**= Green	**W**= White (only available with white backplate) **A**= Brushed Aluminium (only available with black backplate)

EXAMPLE: TXEWRW

GALAXY™ XDPC SERIES

Die-Cast Aluminum Remote Capacity Exit Sign

FEATURES

Construction

- Frame, faceplate, backplate and canopy are made of die-cast aluminum
- 6 inch EXIT lettering legend, available in Red or Green

Mounting

- Surface Mount
- Single face model includes (1) faceplate, (1) back plate and (1) canopy
- Double face model includes (2) faceplates and (1) canopy
- Canopy included for wall, end or ceiling mount applications

Finishes

- Choice of finishes: white, black or brushed aluminum

Chevrons

- Faceplate includes two field-selectable, knock-out chevron indicators

LEDs

- Red or Green Long-Life Light Emitting Diodes (LED) illumination

Remote Capacity

- PCL Model, (Lead-Calcium battery) 6V-9W remote load capacity (20+ hours of operation with no remote load connected)
- PCN Model, (Nickel-Metal Hydride battery) 6V-12W remote load capacity (20+ hours of operation with no remote load connected)
- PCX Model, (Nickel-Metal Hydride battery) 6V-24W remote load capacity (40+ hours of operation with no remote load connected)

Self-Diagnostics

- Self-Powered models available with or without Improved Diagnostics

Special Wording Panels

- Available. Contact your sales representative with your design requirements

Approvals

- Listed to UL 924 Standards
- Option: UL listed for Damp location (32°F to 122°F, 0°C to 50°C)
- Meets NFPA101 (Life Safety Code), NFPA 70 NEC, OSHA illumination standards

Warranty

- Five-Year full warranty (subject to proper installation and maintenance)

ACCESSORIES

Wire Guard, Back Mount	**WG13-L**
Wire Guard, Ceiling Mount	**WG14-L**

SPECIFICATIONS

Supply and Install **Lightalarms® Galaxy™ XD** Series.

The Exit Sign specified as single face shall be standard with (1) faceplate, (1) backplate and (1) canopy and specified as double face shall be standard with (2) faceplates and (1) canopy.

The frame, faceplate, backplate and canopy shall be constructed of die-cast aluminum. Frame, backplate and canopy shall be matching in color, (W) white (B) black or (A) brushed aluminum Faceplate shall be (W) white, (B) black or (A) brushed aluminum with a (R) red or (G) green legend.

Snap together design, allows for no screws being necessary to hold the faceplate(s) or backplate together. The faceplate shall come standard with two field-selectable, removable knockout chevron indicators. The single face Exit Sign shall be suitable for surface mount, wall, end or ceiling installations. The double face Exit Sign shall be suitable for surface mount, end or ceiling installations.

The illumination source shall be Light Emitting Diodes (LED) in (R) red or (G) green color. The LEDs shall provide illumination in normal and emergency operation mode. The LEDs shall be mounted inside the Exit Sign housing. A color matching LED sensitive legend diffuser of (R) red or (G) green, shall be mounted in front of the LEDs to provide the 6" high by 3/4" stroke EXIT letters with even illumination and no visible LEDs or hot spots.

PCL Self-Powered models shall be 120/277VAC, 60Hz, 0.13/0.06Amp and supplied with a sealed maintenance-free Lead-Calcium battery, with 6V-9W remote capacity, providing at least 90 minutes illumination upon AC failure.

PCN Self-Powered models shall be 120/277VAC, 60Hz, and supplied with a sealed maintenance-free Nickel-Metal Hydride battery, with 6V-12W remote capacity, providing at least 90 minutes illumination upon AC failure.

PCX Self-Powered models shall be 120/277VAC, 60Hz, 0.13/0.06Amp and supplied with a sealed maintenance-free Nickel-Metal Hydride battery, with 6V-24W remote capacity, providing at least 90 minutes illumination upon AC failure.

When specified, the unit equipment with Improved Diagnostics shall include a self-test and diagnostic function, managed by a micro-controller; it shall execute automatic tests for one minute every 30 days, 30 minutes every 60 days and 90 minutes annually. A diagnostic circuit shall continuously monitor the performance of the battery, charger module and LED lamps. If a fault is indicated, the external service required indicator will illuminate.

The Exit Sign shall be tested by the Underwriters Laboratories, listed to UL 924 standards, and UL listed for Damp location (32°F to 122°F, 0°C to 50°C). The Exit Sign shall meet NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards. Includes a five-year full warranty.

The Exit Sign shall be **Lightalarms®** Model _____.

TYPE _____

CATALOG # _____

_____

NOTES _____

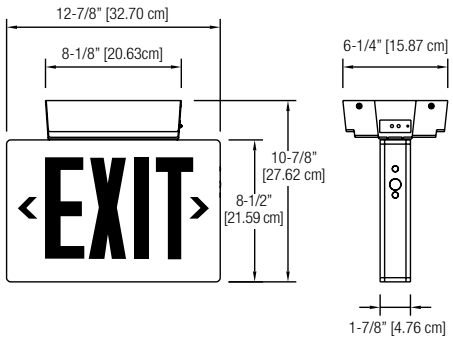
_____

Self-Powered LED Exit Signs with excess battery capacity to power remote emergency head or Exit Signs

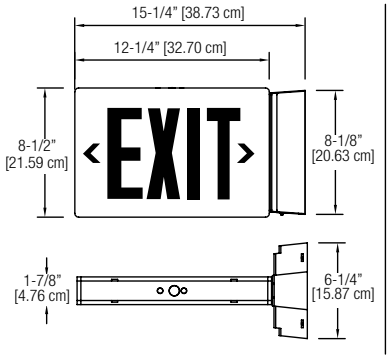
DIMENSIONS

Dimensions are approximate and subject to change.

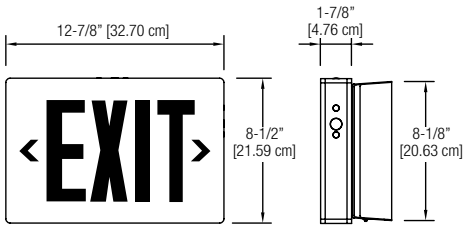
Ceiling Mount



End Mount



Back Mount



POWER CONSUMPTION/UNIT RATING CHART

SERIES	AC SPECS		DC SPECS - WATTS TO 87.5% OF RATED BATTERY VOLTAGE*					
	AC Input	**Maximum**	**Voltage**	**Battery**	**1-1/2 hrs.**	**2 hrs.**	**3 hrs.**	**4 hrs.**
XDPCL	120/277VAC, 60Hz	0.13/0.06A 15W	6V	Lead-Calcium	9	–	–	–
XDPCN			6V	Nickel-Metal Hydride	12	9	–	–
XDPCL			6V	Nickel-Metal Hydride	24	18	12	9

*National Electrical Code Specification

ORDERING FORMAT

NO. OF FACE	SERIES	BATTERY	BACKPLATE/FRAME COLOR	LEGEND/FACEPLATE COLOR	OPTIONS
1= Single face **2**= Double face	**XDPC**= LED Exit	**Lead-Calcium** **PCL**= 6V-9W remote capacity **Nickel Metal Hydride** **PCN**= 6V-12W remote capacity **PCX**= 6V-24W remote capacity	**B**= Black **W**= White **A**= Brushed Aluminum	**RB**= Red/Black **GB**= Green/Black **RW**= Red/White **GW**= Green/White **RA**= Red/Brushed Aluminum **GA**= Green/Brushed Aluminum	**Blank**= No options **-ID**= Improved Diagnostics (audible) **-IDNA**= Improved Diagnostics (non-audible) **-T1**= Time Delay (5 minutes)[1] **-T2**= Time Delay (10 minutes)[1] **-T3**= Time Delay (15 minutes)[1] **-FB**= Flasher Buzzer[2] **-FAF**= Fire Alarm Flasher[2] **-DL**= Damp location **-VR**= Vandal Resistant Screws **-LVR**= Vandal Resistant Polycarbonate lens and screws [1] Comes standard with ID and IDNA options [2] Not available with ID and IDNA options

EXAMPLE: 2XDPCLBRAIDNA

UX4 LED STEEL EXIT & COMBINATION SERIES

Steel LED Exit Signs and Combination Units

FEATURES

Construction
- Frame, faceplate and backplate are made of 20 gauge steel, canopy is made of Thermoplastic
- 6 inch EXIT lettering legend, available in Red or Green

Mounting
- Surface Mount
- Model includes (2) faceplates, (1) backplate and (1) canopy
- Canopy included for end or ceiling mount applications
- Backplate features universal knockouts for a standard 4 inch junction box, used in wall mount applications

Finishes
- Choice of finishes: white or black
- Optional brushed aluminum faceplate available

Chevrons
- Faceplate includes two field-selectable, knock-out chevron indicators

Exit Legend LEDs
- Red or Green Long-Life Light Emitting Diodes (LED) illumination

Remote Capacity/Combination units
- UX4E Model, Lead-Calcium battery, 6V-30W total battery capacity
- UX4EN Model, Nickel-Cadmium battery, 6V-24W total battery capacity
- UX4EX Model Nickel-Cadmium battery, 6V-20W total battery capacity

Exit sign
- UX4 Model, Exit Sign, AC-Only, 120/277VAC, 50/60Hz
- UX4N Model, Nickel-Cadmium battery

Lamp Head Source
- Choice of Wedge Base Incandescent 6V up to 9W
- Choice of Bi-Pin Halogen 6V up to 12W
- Choice of MR16 6V up to 10W

Self-Diagnostics
- Self-Powered E and EX models available with or without Improved Diagnostics

Special Wording Panels
- Available. Contact your sales representative with your design requirements

Approvals
- Listed to UL 924 Standards
- Meets NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards

Warranty
- Three-Year full warranty (subject to proper installation and maintenance)

ACCESSORIES

(Order as a separate item)

White Pendant	**PW-***
Black Pendant	**PB-***
Wire Guard (Exit-Ceiling or End Mount)	**WG5-L**
Wire Guard (Exit-Wall Mount)	**WG12-L**
Wire Guard (Combination Unit-Wall Mount)	**WG6-L**

*Specify Pendant length (12", 24", 36" etc.)

SPECIFICATIONS

Supply and Install **Lightalarms® UX4 LED** Steel Exit & Combination Series.

The Exit Sign or combination unit shall be standard with (2) faceplates, (1) backplate and (1) canopy.

The frame, faceplate, and backplate shall be constructed of 20 gauge steel, canopy shall be Thermoplastic. Frame, faceplate, backplate and canopy shall be matching in color, (W) white or (B) black. Faceplate shall be (W) white or (B) black with a (R) red or (G) green legend.

The faceplate shall come standard with two field-selectable, removable knockout chevron indicators. The Exit Sign or Combination Unit shall be suitable for surface mount, wall, end or ceiling installations.

The Exit illumination source shall be Light Emitting Diodes (LED) in (R) red or (G) green color. The LEDs shall provide illumination in normal and emergency operation mode. The LEDs shall be mounted inside the Exit Sign housing. A color matching LED sensitive legend diffuser of (R) red or (G) green, shall be mounted in front of the LEDs to provide the 6" high by ¾" stroke EXIT letters with even illumination and no visible LEDs or hot spots.

AC-Only UX4 models shall be 120/277VAC, 60Hz, with a power consumption of less than 1.5W and also wired for AC/DC 6VDC to 24VDC operation.

Self-Powered UX4N models shall be 120/277VAC, 60Hz, with a power consumption of less than 3W and supplied with a sealed maintenance-free Nickel-Cadmium battery, providing at least 90 minutes, illumination upon AC failure.

Combination UX4E models shall be 120/277VAC, 60Hz, with power consumption of less than 5W and supplied with a sealed maintenance-free 6V-30W load capacity Lead-Calcium battery providing at least 90 minutes, illumination upon AC failure.

Combination models UX4EN model shall be 120/277VAC, 60Hz, with a power consumption of less then 5W and supplied with a sealed maintenance-free 6V-24W load capacity Nickel-Cadmium battery providing at least 90 minutes, illumination upon AC failure.

The Exit Sign shall be tested by Underwriters Laboratories, listed to UL 924 standards. The Exit Sign or Combination Unit shall meet NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards. Includes a three-year full warranty.

The Exit Sign or Combination Unit shall be **Lightalarms®** Model _____.

POWER CONSUMPTION CHART

MODEL	AC SPECS		DC SPECS	
AC-Only	120/277VAC, 50/60Hz	Less than 1.5W	–	–
AC/DC	120/277VAC, 50/60Hz	Less than 1.5W	6 to 24VDC	Less than 1.5W
Self-Powered	120/277VAC, 50/60Hz	Less than 3W	Nickel-Cadmium	Minimum 90 minutes
Combination	120/277VAC, 50/60Hz	Less than 5W	See Unit Rating Chart	

UNIT RATING CHART (Combination Unit)

BATTERY TYPE	DC VOLTAGE (VOLTS)	MODEL	WATT TO 87.5% OF RATED BATTERY VOLTAGE*			
			1-1/2 hrs.	2 hrs.	3 hrs.	4 hrs.
Lead-Calcium	6	**UX4E**	30	20	14	10
Nickel-Cadmium		**UX4EN**	24	18	12	9

*National Electrical Code Specification

NEW! **AVAILABLE WITH LED LAMP HEADS**

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

nexus id improved diagnostics UL

20 gauge steel LED Exit Sign and Combination Unit designed for easy installation. Energy efficient and rugged in design.

Shown with ELF2 (suffix 2M) Heads

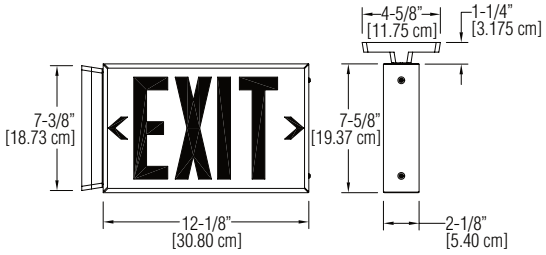
DIMENSIONS

Dimensions are approximate and subject to change.

Available Head Style Choices: ELF645 (SUFFIX 1L & 2L) | ELF2 (SUFFIX 1M & 2M) | ELF3

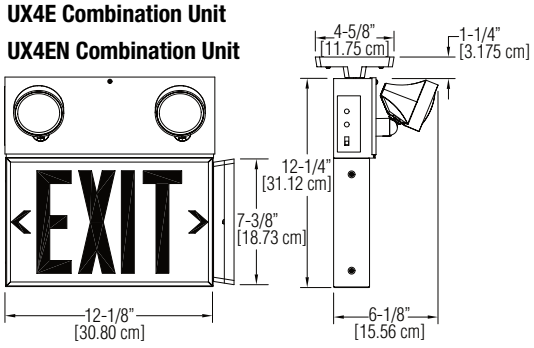
UX4 AC/DC-Only Exit Sign

UX4N Self-Powered Exit Sign



UX4E Combination Unit

UX4EN Combination Unit



ORDERING FORMAT

AC-only and Self-Powered Models

SERIES	BATTERY TYPE	BACKPLATE/FRAME COLOR	LEGEND/ FACEPLATE COLOR	LEGEND SOURCE	OPTIONS
UX4= Universal (2) faceplates, (1) backplate and (1) canopy	**Blank**= AC-only **N**= Self-Powered	**W**= White **B**= Black	**RW**= Red/White **RB**= Red/Black **RA**= Red/Aluminum **GW**= Green/White **GB**= Green/Black **GA**= Green/Aluminum	**LED**= LED	**Blank**= No options **-IDNA**= Improved Diagnostics (non-audible)[1] **-DC**= AC/DC 6V-24VDC **-VR**= Vandal Resistant Screws **-LVR**= Vandal Resistant Polycarbonate Screws & Lens **-NEX**= Nexus® Wired[1] **-NEXRF**= Nexus® Wired[1] [1] Available in Self-Powered only

EXAMPLE: UX4WRWLED

Combination Units

SERIES	UNIT TYPE	BACKPLATE/ FRAME COLOR	LEGEND/ FACEPLATE COLOR	LEGEND SOURCE	LAMP HEAD SUFFIX	LAMP OPTIONS	OPTIONS
UX4= Universal (2) faceplates, (1) backplate and (1) canopy	**E= 6V-30W** Lead-Calcium battery **EN**= 6V-24W Nickel-Cadmium battery **EX**= 6V-20W Nickel-Cadmium battery	**W**= White **B**= Black	**RW**= Red/White **RB**= Red/Black **RA**= Red/Aluminum **GW**= Green/White **GB**= Green/Black **GA**= Green/Aluminum	**LED**= LED	**/0**= No heads **/1L**= (1) ELF645 head **/2L**= (2) ELF645 heads **/1M**= (1) ELF2 head **/2M**= (2) ELF2 heads **/1ELF3**= (1) ELF3 head **/2ELF3**= (2) ELF3 heads	**Use with ELF645 (suffix 1L & 2L) Only** **L9**= 6V-9W Wedge Base Incandescent **4042**= 6V-12W Sealed Beam Incandescent **H7553**= 6V-12W Sealed Beam Halogen **Use with ELF2 (suffix 1M & 2M) Only** **L9**= 6V-9W Wedge Base Incandescent **LH6**= 6V-12W Bin Pin Halogen **Use with ELF3 (suffix 1ELF3 & 2ELF3) Only** **M10**= 6V-10W MR16 Halogen **LD1**= 6V-4W MR16 LED	**Blank**= No Option **-ID**= Improved Diagnostics (audible)[1] **-IDNA**= Improved Diagnostics (non-audible)[1] **-T1**= Time Delay 5 minutes **-T2**= Time Delay 10 minutes **-T3**= Time Delay 15 minutes **-VR**= Vandal Resistant Screws **-LVR**= Vandal Resistant Screws & Lens **-NEX**= Nexus® Wired[1] (combo unit only) **-NEXRF**= Nexus® Wireless[1] (combo unit only) [1] Not available with EN model

EXAMPLE: UX4EWRWLED/2LH7553

GRANDE™ EXIT SERIES

Specification-grade, LED, Thermoplastic, Snap Together Exit Sign

FEATURES

Construction
- Frame, faceplate, backplate and canopy are made of Thermoplastic
- 6 inch EXIT lettering legend, available in Red or Green

Mounting
- Surface Mount
- Universal model includes (2) faceplates, (1) backplate and (1) canopy
- Single face model includes (1) faceplate, (1) backplate and (1) canopy
- Double face model includes (2) faceplates and (1) canopy
- Canopy included for end or ceiling mount applications
- Backplate features universal knockouts for a standard 4 inch junction box, used in wall mount applications

Finishes
- Choice of finishes: white or black
- Optional brushed aluminum faceplate stencil available

Chevrons
- Faceplate includes two field-selectable, snap-in/out chevron indicators

LEDs
- Red or Green Long-Life Light Emitting Diodes (LED) illumination

Self-Diagnostics
- Self-Powered models available with or without Improved Diagnostics
- NEXUS® Wired or Wireless system compatible

Special Wording Panels
- Available. Contact your sales representative with your design requirements

Approvals
- Listed to UL 924 Standards
- UL listed for Damp location (50°F to 104°F, 10°C to 40°C)
- Meets NFPA101 (Life Safety Code), NFPA 70 NEC, OSHA illumination standards

Warranty
- Five-Year full warranty (subject to proper installation and maintenance)

ACCESSORIES

(Order as a separate item)

Wire Guard (Wall Mount)	**WG1-L**
Wire Guard (Ceiling Mount and End Mount)	**WG5-L**

POWER CONSUMPTION CHART

MODEL	AC SPECS		DC SPECS	
AC-Only	120/277VAC, 60Hz	Less than 2.5W	–	–
AC / DC-remote	120/277VAC, 60Hz	Less than 2W	6 to 48VDC	Less than 1.5W
Self-Powered	120/277VAC, 60Hz	Less than 3.3W	Nickel-Cadmium battery	Min. 90 minutes
Self-Powered with Diagnostic	120/277VAC, 60Hz	Less than 2.8W	Nickel-Cadmium battery	Min. 90 minutes

SPECIFICATIONS

Supply and Install **Lightalarms® Grande™** Exit Series.

The Exit Sign specified as a universal model includes (2) faceplates, (1) backplate and (1) canopy, specified as single face includes (1) faceplate, (1) backplate and (1) canopy, specified as double face includes (2) faceplates and (1) canopy. The frame, faceplate, backplate and canopy shall be constructed of injection-molded Thermoplastic. Frame, backplate and canopy shall be matching in color, (W) white or (B) black. Faceplate shall be (W) white, (B) black or optional (A) brushed aluminum with a (R) red or (G) green legend. Snap together design allows for no screws being necessary to hold the faceplate(s) or backplate together. The faceplate shall come standard with two field-selectable, removable snap-in/out chevron indicators. The universal and single face Exit Sign shall be suitable for surface mount, wall, end or ceiling installations. The double face Exit Sign shall be suitable for surface mount, end or ceiling installations.

The illumination source shall be Light Emitting Diodes (LED) in (R) red or (G) green color. The LEDs shall provide illumination in normal and emergency operation mode. The LEDs shall be mounted inside the Exit Sign housing. A color matching LED sensitive legend diffuser of (R) red or (G) green, shall be mounted in front of the LEDs to provide the 6" high by ¾" stroke EXIT letters with even illumination and no visible LEDs or hot spots.

Based on the test results, the authors estimate that ALINGAP LEDs exposed to 100,000 hours (11.4 years) of continuous use at an ambient temperature of +55°C

AC-Only models shall be 120/277VAC, 60Hz, with a power consumption of less than 2.5W.

AC/DC models shall be 120/277VAC, 60Hz, with a power consumption of less then 2W and allows for DC operation from 6VDC to 48VDC.

Self-Powered models shall be 120/277VAC, 60Hz, with a power consumption of less than 3.3W and supplied with a sealed maintenance-free Nickel-Cadmium battery, providing at least 90 minutes, illumination upon AC failure.

When specified, the Self-Powered Exit Sign with Improved Diagnostics shall include a self-test and silent diagnostic function, managed by a micro-controller; it shall execute automatic tests for one minute every 30 days, 30 minutes every 60 days and 90 minutes annually. A diagnostic circuit shall continuously monitor the performance of the battery, charger module and LED lamps. When a fault is detected, the pilot light shall change color from green to red and flash with a specific code. The red light is steady-on in case of a battery disconnect; it will flash with one blink for battery failure; two blinks for charger failure and four blinks for LED lamp failure. A label with the diagnostic legend shall be visible next to the pilot light.

The Exit Sign shall be tested by Underwriters Laboratories, listed to UL 924 standards. UL listed for Damp location (50°F to 104°F, 10°C to 40°C). The Exit Sign shall meet NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards. Includes a five-year full warranty.

The Exit Sign shall be **Lightalarms®** Model _____.

TYPE _____

CATALOG # _____

_____

NOTES _____

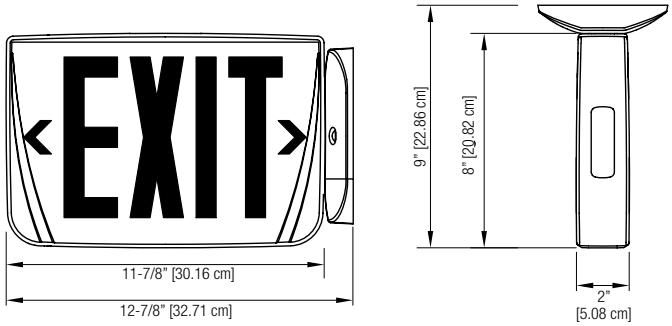
_____

nexus id improved diagnostics UL

Compact with an all-in-one, snap-fit design. Easy to install and affordable. Ideally suited for spec-grade applications

DIMENSIONS

Dimensions are approximate and subject to change.



ORDERING FORMAT

SERIES	UNIT TYPE	LEGEND COLOR / # OF FACE	HOUSING COLOR	OPTIONS
GRAN	**Standard Models** **AC**= AC-Only (120/277V) **DC**= 120/277VAC & 6 to 48VDC **N**= Self-Powered Nickel-Cadmium **Optional Models** **21**= Dual AC circuit (2x120V) **22**= Dual AC circuit (2x277V) **ND**= Self-Powered with Improved Diagnostic circuitry **-NEX**= Nexus® Wired[1] **-NEXRF**= Nexus® Wireless[1] [1] Consult your sales representative	**R**= Red Universal **R1**= Red single face **R2**= Red double face **G**= Green Universal **G1**= Green single face **G2**= Green double face **Open face[1]** **RW**= Red on White **GW**= Green on White Universal= (2) faceplates, (1) backplate and (1) canopy Single Face= (1) faceplate, (1) backplate and (1) canopy Double Face= (2) faceplates and (1) canopy [1] Open face required with special wording legends	**W**= White **B**= Black	**-BA**= Brushed Aluminum exit stencil **-FB**= Flasher Buzzer (ND model only) **-FL**= Flasher (ND model only) **-FAF**= Fire Alarm activated Flasher (AC, DC, 21,22 or ND models only) **-FBF**= Flasher Buzzer + Fire Alarm activated Flasher (ND model only) **-VR**= Vandal Resistant Screws **-LVR1**= Vandal Resistant Polycarbonate lens and screws **-PM**= Pendant Mount For Pendant Kit see p. 51

EXAMPLE: GRANACRW

GRANDE™ THERMOPLASTIC FAMILY

The **Grande™ Exit Sign** is a part of the **Grande™** family of Thermoplastic emergency lighting products. The **Grande™** family offers complete emergency lighting solutions where style and design are required in an economical package.

Grande™ Combination Series
p.32-33

Grande™ Battery Series
p.74-75

ELF640 (indoor) & ELF650 (outdoor) Remote Series
p.110-111

GRANDE™ COMBINATION SERIES

Specification-grade, LED, Thermoplastic, snap-together Combination Unit

FEATURES

Construction
- Frame, faceplate, backplate and canopy are made of Thermoplastic
- Clear polycarbonate lens covers
- 6 inch EXIT lettering legend, available in Red or Green

Mounting
- Surface Mount
- Universal model includes (2) faceplates, (1) backplate and (1) canopy
- Single face model includes (1) faceplate, (1) backplate and (1) canopy
- Double face model includes (2) faceplates and (1) canopy
- Canopy included for ceiling mount applications
- Backplate features universal knockouts for a standard 4 inch junction box, used in wall mount applications

Finishes
- Choice of finishes: white or black
- Optional brushed aluminum faceplate stencil available

Chevrons
- Faceplate includes two field-selectable, snap-in/out chevron indicators

Exit Legend LEDS
- Red or Green Long-Life Light Emitting Diodes (LED) illumination

Remote Capacity/Combination Units
- Lead-Calcium battery models offer a choice of 6V-12W, 6V-24W or 12V-24W total battery capacity
- Nickel-Metal Hydride battery models offer a choice of 6V-12W, 12V-24W, 12V-40W or 12V-50W total battery capacity

Lamp Head Source
- Choice of MR16 6V up to 10W or 12V up to 12W
- Choice of MR16 LED 6V-4W, 12V-4W, 12V-5W or 12V-6W with life expectancy 50,000+ hours
- Lamp heads are fully adjustable with no tools required

Self-Diagnostics
- Models available with or without Improved Diagnostics
- NEXUS® wired or wireless system compatible

Special Wording Panels
- Available, contact your sales representative with your design requirements

Approvals
- Listed to UL 924 Standards
- Nickel-Metal Hydride battery combination units UL listed for Damp location (50°F to 104°F, 10°C to 40°C)
- Meets NFPA101 (Life Safety Code), NFPA 70 NEC, OSHA illumination standards

Warranty
- Five-Year full warranty (subject to proper installation and maintenance)

ACCESSORIES

(Order as a separate item)

Wire Guard (Wall Mount)	**WG2-L**
Pendant White	**GRA-P*-W**
Pendant Black	**GRA-P*-B**

*Specify pendant length (12", 24", 36" etc)

Convert single face to double face in the field

Red/White	**005715-L**
Red/Black	**005716-L**
Green/White	**005717-L**
Green/Black	**005718-L**

SPECIFICATIONS

Supply and Install **Lightalarms® Grande™ Combination** Series.

The Combination Unit specified as universal includes (2) faceplates, (1) backplate and (1) canopy, specified as single face includes (1) faceplate, (1) backplate and (1) canopy, specified as double face includes (2) faceplates and (1) canopy. The frame, faceplate, backplate and canopy shall be constructed of injection-molded Thermoplastic. Frame, backplate and canopy shall be matching in color, (W) white or (B) black. Faceplate shall be (W) white, (B) black or optional (A) brushed aluminum with a (R) red or (G) green legend. Snap together design allows for no screws being necessary to hold the faceplate(s) or backplate together or for removal and replacement of polycarbonate lens covers. The faceplate shall come standard with two field-selectable, removable snap-in/out chevron indicators. The universal and single face combination model shall be suitable for surface mount, wall or ceiling installations. The double face Combination Unit shall be suitable for surface mount ceiling installations.The EXIT illumination source shall be Light Emitting Diodes (LED) in (R) red or (G) green color. The LEDs shall provide illumination in normal and emergency operation mode. The LEDs shall be mounted inside the housing. A color matching LED sensitive legend diffuser of (R) red or (G) green shall be mounted in front of the LEDs to provide the 6" high by ¾" stroke EXIT letters with even illumination and no visible LEDs or hot spots. When specified, the unit shall be equipped with two emergency heads protected by snap-on, shock-absorbent, clear polycarbonate covers with tool-less adjustable swivels and MR16 halogen lamps or MR16 LED lamps as noted. Combination Units shall be 120/277VAC, 60Hz, with a power consumption of less than 2W for Exit Sign module operation and supplied with a sealed maintenance-free battery of Lead-Calcium or Nickel-Metal Hydride as noted, providing at least 90 minutes, illumination upon AC failure.

612M model shall be a 6V-12W Lead-Calcium battery with power consumption of 0.11/0.05A.

624M model shall be a 6V-24W Lead-Calcium battery with power consumption of 0.11/0.05A.

1224M model shall be a 12V-24W Lead-Calcium battery with power consumption of 0.22/0.08A.

612H model shall be a 6V-12W Nickel-Metal Hydride battery with power consumption of 0.11/0.05A

1224H model shall be a 12V-24W Nickel-Metal Hydride battery with power consumption of 0.22/0.08A

1240H model shall be a 12V-40W Nickel-Metal Hydride battery with power consumption of 0.22/0.08A

1250H model shall be a 12V-50W Nickel-Metal Hydride battery with power consumption of 0.22/0.08A

When specified, the Combination Unit with Improved Diagnostics shall include a self-test and silent diagnostic function, managed by a micro-controller; it shall execute automatic tests for one minute every 30 days, 30 minutes every 60 days and 90 minutes annually. A diagnostic circuit shall continuously monitor the performance of the battery, charger module and LED lamps. When a fault is detected, the pilot light shall change color from green to red and flash with a specific code. The red light is steady-on in case of a battery disconnect; it will flash with one blink for battery failure; two blinks for charger failure and four blinks for LED lamp failure. A label with the diagnostic legend shall be visible next to the pilot light.The Combination Unit shall be tested by Underwriters Laboratories, listed to UL 924 standards, and UL listed for Damp location (50°F to 104°F, 10°C to 40°C). The Combination Unit shall meetNFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards. Includes a five-year full warranty.

The combination unit shall be **Lightalarms®** Model _____.

NEW!

AVAILABLE WITH LED LAMP HEADS

TYPE _____

CATALOG # _____

_____

NOTES _____

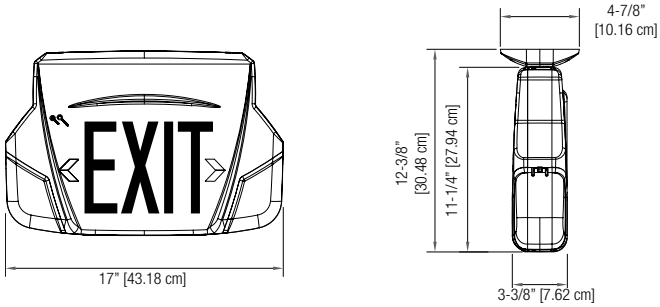
_____

nexus id improved diagnostics UL

Designed with aesthetics, ease of installation, extra remote capacity and performance in mind

DIMENSIONS

Dimensions are approximate and subject to change.



POWER CONSUMPTION/UNIT RATING CHART

SERIES	AC SPECS		DC SPECS - WATTS TO 87.5% OF RATED BATTERY VOLTAGE[1]					
	AC Input	**Current Draw**	**Voltage**	**Battery**	**1-1/2 hrs**	**2 hrs.**	**3 hrs.**	**4 hrs.**
GR612M	120/277VAC, 60Hz	0.11/0.05A	6V	Lead-Calcium	12	8	–	–
GR612H	120/277VAC, 60Hz	0.11/0.05A	6V	Nickel-Metal Hydride	12	9	–	–
GR624M	120/277VAC, 60Hz	0.11/0.05A	6V	Lead-Calcium	24	16	12	9
GR1224M	120/277VAC, 60Hz	0.22/0.08A	12V	Lead-Calcium	24	16	12	9
GR1224H	120/277VAC, 60Hz	0.22/0.08A	12V	Nickel-Metal Hydride	24	18	12	9
GR1240H	120/277VAC, 60Hz	0.22/0.08A	12V	Nickel-Metal Hydride	40	30	20	15
GR1250H	120/277VAC, 60Hz	0.22/0.08A	12V	Nickel-Metal Hydride	50	36	24	18

[1] National Electrical Code specification. Note: LED Exit AC Illumination draws less than 2W.

ORDERING FORMAT

SERIES/BATTERY TYPE/CAPACITY	LEGEND COLOR	# OF FACE	HOUSING COLOR	# OF HEADS	LAMP TYPE	OPTIONS
Lead-Calcium **GR612M**= 6V-12W **GR624M**= 6V-24W **GR1224M**= 12V-24W **Nickel Metal Hydride Rated Damp location** **GR612H**= 6V-12W **GR1224H**= 12V-24W **GR1240H**= 12V-40W **GR1250H**= 12V-50W	**R**= Red **G**= Green	**1**= Single face (ceiling or wall mount) **1N**= Single face no canopy (wall mount) **2**= Double face (ceiling mount) **U**= Universal 2 faces, backplate and canopy	**W**= White **B**= Black	**Blank**= No heads **2**= Two heads	**MR16 Halogen lamps** **M6**= 6V-6W **M10**= 6V-10W **M10**= 12V-10W **M12**= 12V-12W **MR16 LED Lamps** **LD1**= 6V-4W **LD7**= 12V-4W **LD9**=12V-5W **LD10**=12V-6W	**Blank**= No option **-BA**= Brushed Aluminum exit stencil **-FB**= Flasher Buzzer **-FL**= Flasher **-FAF**= Fire Alarm activated Flasher **-FBF**= Flasher Buzzer + Fire Alarm activated Flasher **-VR**= Vandal Resistant Screws **-LVR1**= Vandal Resistant Polycarbonate lens and screws **-ID**= Improved Diagnostics (audible)[1] **-IDNA**= Improved Diagnostics (non-audible)[1] **-T3**= Time Delay (15 minutes) **-NEX**= Nexus® Wired[1] **-NEXRF**= Nexus® Wireless[1] **-PTS**= Photocell test switch For Pendant Kit see p. 51 [1] Not available with GR1250H

EXAMPLE: GR612MR1W2M6

GRANDE™ THERMOPLASTIC FAMILY

The **Grande™ Combination Unit** is a part of the **Grande™** family of Thermoplastic emergency lighting products. The **Grande™** family offers complete emergency lighting solutions where style and design are required in an economical package.

Grande™ Exit Series
p.30

Grande™ Battery Series
p.74-75

ELF640 (indoor) & ELF650 (outdoor) Remote Series p.110-111

QUICK™ QLX & QLXN SERIES

Economical, Thermoplastic LED Exit Signs

TYPE _____

CATALOG # _____

NOTES _____

FEATURES

Construction
- Frame, faceplate, backplate and canopy are made of Thermoplastic
- 6 inch EXIT lettering legend, available in Red or Green

Mounting
- Surface Mount
- Universal model includes (2) faceplates, (1) backplate and (1) canopy
- Canopy included for end or ceiling mount applications
- Backplate features universal knockouts for a standard 4 inch junction box, used in wall mount applications

Finishes
- Finished in mist-white

Chevrons
- Faceplate includes two field-selectable, snap-in/out chevron indicators

LEDs
- Red or Green Long-Life Light Emitting Diodes (LED) illumination

Self-Diagnostics
- Diagnostic is available (see ordering format)

Special Wording Panels
- Not available

Approvals
- Listed to UL 924 Standards
- UL listed for Damp location (50°F to 104°F, 10°C to 40°C)
- Meets NFPA101 (Life Safety Code), NFPA 70 NEC, OSHA illumination standards

Warranty
- Three-Year full warranty (subject to proper installation and maintenance)

ACCESSORIES
(Order as a separate item)

Wire Guard (Wall Mount)	**WG1-L**
Wire Guard (Ceiling Mount and End Mount)	**WG5-L**

POWER CONSUMPTION CHART

120/277VAC, 60Hz maximum 2.5W

ORDERING FORMAT

SERIES	LEGEND COLOR	OPTIONS
QLX500= AC-Only **QLXN500**= Self-Powered	**RN**= Red **GN**= Green	**Blank**= No option **-ID**= Improved Diagnostic[1]

[1] Available only with Self-Powered model, no remote capacity

EXAMPLE: QLXN500R

SPECIFICATIONS

Supply and Install **Lightalarms® Quick™ QLX & QLXN** Series.

The Exit Sign specified as a universal model includes (2) faceplate, (1) backplate and (1) canopy.

The frame, faceplate, backplate and canopy shall be constructed of injection-molded Thermoplastic. Frame, backplate and canopy shall be mist-white in color. Faceplate shall be mist-white, with a (R) red or (G) green legend.

Snap together design, allows for no screws being necessary to hold the faceplate(s) or backplate together. The faceplate shall come standard with two field-selectable, removable snap-in/out chevron indicators. The universal and single face Exit Sign shall be suitable for surface mount, wall, end or ceiling installations.

The illumination source shall be Light Emitting Diodes (LED) in (R) red or (G) green color. The LEDs shall provide illumination in normal and emergency operation mode. The LEDs shall be mounted inside the Exit Sign housing. A color matching LED sensitive legend diffuser of (R) red or (G) green, shall be mounted in front of the LEDs to provide the 6" high by ¾" stroke EXIT letters with even illumination and no visible LEDs or hot spots. LED shall have rated lamp more than 30,000 hours.

AC-Only models shall be 120/277VAC, 60Hz, maximum 2.5W.

AC/DC models not available.

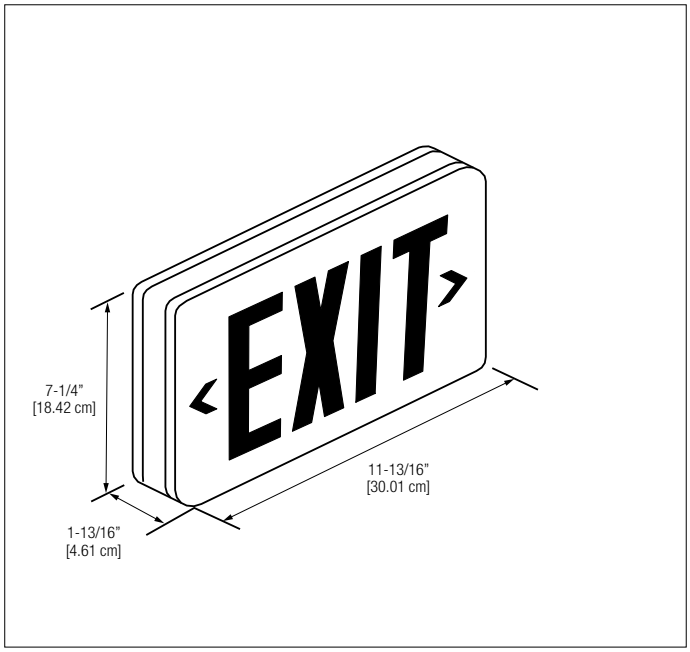
Self-Powered models shall be 120/277VAC, 60Hz, with a power consumption of 2.5W and supplied with a sealed maintenance-free Nickel-Cadmium battery, providing at least 90 minutes, illumination upon AC failure. Expected life of battery 15 years or more

The Exit Sign shall be tested by Underwriters Laboratories, listed to UL 924 standards, and UL listed for Damp location (50°F to 104°F, 10°C to 40°C). The Exit Sign shall meet NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards. Includes a three-year full warranty.

The Exit Sign shall be **Lightalarms®** Model _____.

DIMENSIONS

Dimensions are approximate and subject to change.



AVAILABLE WITH LED LAMP HEADS

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

QUICK™ UQLXN-2MR COMBINATION SERIES

Thermoplastic LED Combination Units

FEATURES

Construction
- Frame, faceplate, backplate and canopy are made of Thermoplastic
- 6 inch EXIT lettering legend, available in Red or Green

Mounting
- Surface Mount
- Universal model includes (2) faceplates, (1) backplate and (1) canopy
- Canopy included for end or ceiling mount applications
- Backplate features universal knockouts for a standard 4 inch junction box used in wall mount applications

Finishes
- Finished in mist-white

Chevrons
- Faceplate includes two field-selectable, snap-in/out chevron indicators

Exit Legend LEDs
- Red or Green Long-Life Light Emitting Diodes (LED) illumination

Combination Units
- Lead-Calcium battery models offer a choice of 6V-12W total battery capacity

Lamp Head Source
- Choice of MR16 6V-5W
- Choice of MR16 LED 6V-4W, with life expectancy 50,000+ hours
- Lamp heads are fully adjustable with no tools required.

Self-Diagnostics
- Not Available

Special Wording Panels
- Not Available

Approvals
- Listed to UL 924 Standards
- UL listed for Damp location (50°F to 104°F, 10°C to 40°C)
- Meets NFPA101 (Life Safety Code), NFPA 70 NEC, OSHA illumination standards

Warranty
- Three-Year full warranty (subject to proper installation and maintenance)

ACCESSORIES

(Order as a separate item)

Wire Guard (Wall mount)	**WG6-L**

POWER CONSUMPTION CHART

120/277VAC, 60Hz 0.11/0.05A

ORDERING FORMAT

SERIES	LEGEND COLOR	LAMP TYPE
UQLXN500	**R**= Red **G**= Green	**-2MRSN**= 6V-5W Halogen MR16 **-2LD1N**= 6V-4W LED MR16

EXAMPLE: UQLXN500R-2MRSN

SPECIFICATIONS

Supply and Install **Lightalarms® Quick™ UQLXN-2MR Combination** Series. The Combination Unit specified includes (2) faceplates, (1) backplate and (1) canopy. The frame, faceplate, backplate and canopy shall be constructed of injection-molded Thermoplastic. Frame, backplate and canopy shall be mist-white. Faceplate shall be mist-white with a (R) red or (G) green legend. Snap together design allows for no screws being necessary to hold the faceplate(s) or backplate together. The faceplate shall come standard with two field-selectable, removable snap-in/out chevron indicators. The combination model shall be suitable for surface mount, end wall or ceiling installations.

The EXIT illumination source shall be Light Emitting Diodes (LED) in (R) red or (G) green color. The LEDs shall provide illumination in normal and emergency operation mode. The LEDs shall be mounted inside the Exit Sign housing. A color matching LED sensitive legend diffuser of (R) red or (G) green, shall be mounted in front of the LEDs to provide the 6" high by 3/4" stroke EXIT letters with even illumination and no visible LEDs or hot spots.

Combination Units shall be equipped with two MR16 type emergency heads with either MR16 6V-5W halogen or 6V-4W LED as specified. Emergency heads are adjustable and can be aimed with no tools required.

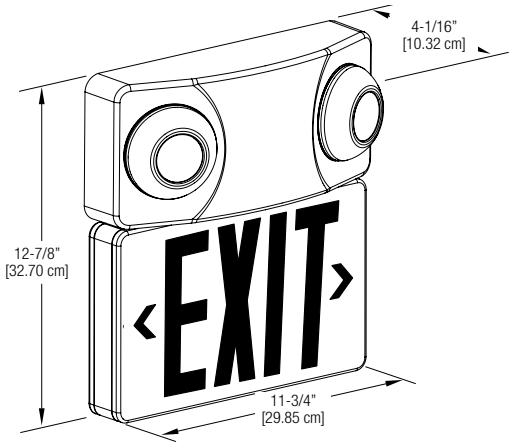
Combination Units shall be 120/277VAC, 60Hz, with power consumption of .1/.05A and supplied with a sealed maintenance-free Lead-Calcium battery, providing at least 90 minutes, illumination upon AC failure.

The Combination Units sbe tested by Underwriters Laboratories, listed to UL 924 standards, and UL listed for Damp location (50°F to 104°F, 10°C to 40°C). The Combination Units shall meet NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards. Includes a three-year full warranty.

The combination unit shall be **Lightalarms®** Model _____.

DIMENSIONS

Dimensions are approximate and subject to change.



QUICK™ UQLXN-2SQ & UQLXN-0R-ID COMBINATION AND REMOTE CAPACITY SERIES

Thermoplastic Combination Units and Remote Capacity Exit Sign

FEATURES

Construction
- Frame, faceplate, backplate and canopy are made of Thermoplastic
- 6 inch EXIT lettering legend, available in Red or Green

Mounting
- Surface Mount
- Universal model includes (2) faceplates, (1) backplate and (1) canopy
- Canopy included for ceiling mount applications
- Backplate features universal knockouts for a standard 4 inch junction box used in wall mount applications

Finishes
- Finished in mist-white

Chevrons:
- Faceplate includes two field-selectable, snap-in/out chevron indicators

Exit Legend LEDs
- Red or Green Long-Life Light Emitting Diodes (LED) illumination

Remote Capacity/Combination Units
- -2SQR models feature a 6V Lead-Calcium extra capacity battery with 2 heads attached, plus an additional 12W of remote battery capacity
- -0R-ID models feature a 6V Lead-Calcium extra capacity battery with no heads attached, self-diagnostics, and an additional 22W of remote battery capacity

Lamp Head Source
- 6V 5.4W wedge base incandescent lamp
- Lamp heads are fully adjustable to top or side with no tools required.

Self-Diagnostics
- Combination models available with or without Improved Diagnostics
- Remote Capacity Exit Sign includes Improved Diagnostics

Special Wording Panels
- Not Available

Approvals
- Listed to UL 924 Standards
- UL listed for Damp location (50°F to 104°F, 10°C to 40°C)
- Meets NFPA101 (Life Safety Code), NFPA 70 NEC, OSHA illumination standards

Warranty
- Three-Year full warranty (subject to proper installation and maintenance)

ACCESSORIES

(Order as a separate item)

Wire Guard (heads in any position) Wall Mount	**WG10-L**

POWER CONSUMPTION CHART

120/277VAC, 60Hz maximum 0.11/0.05A

SPECIFICATIONS

Supply and Install **Lightalarms® UQLXN-2SQ, -2SQR, -2SQR-ID, -0R-ID Combination** or **Remote Capacity** Exit Sign Series.

The combination models and remote capacity Exit Sign specified include (2) faceplates, (1) backplate and (1) canopy. The frame, faceplate, backplate and canopy shall be constructed of injection-molded Thermoplastic. Frame, backplate and canopy shall be matching in color mist-white. Faceplate shall be mist-white, with a (R) red or (G) green legend.

Snap together design, allows for no screws being necessary to hold the faceplate(s) or backplate together. The faceplate shall come standard with two field-selectable, removable snap-in/out chevron indicators. The combination model shall be suitable for surface mount, wall or ceiling installations.

The EXIT illumination source shall be Light Emitting Diodes (LED) in (R) red or (G) green color. The LEDs shall provide illumination in normal and emergency operation mode. The LEDs shall be mounted inside the Exit Sign housing. A color matching LED sensitive legend diffuser of (R) red or (G) green, shall be mounted in front of the LEDs to provide the 6" high by ¾" stroke EXIT letters with even illumination and no visible LEDs or hot spots.

When specified, the Combination model shall be equipped with two square emergency heads with 6V-5.4W incandescent lamps that can be top or side mounted, adjusted, and aimed with no tools required.

Combination models and remote capacity Exit Sign shall be 120/277VAC, 60Hz, and supplied with a sealed maintenance-free Lead-Calcium battery, providing at least 90 minutes, illumination upon AC failure.

-2SQ model: shall include, (2) attached 6V-5.4W incandescent wedge-based lamp heads and offer no extra remote battery capacity with a power consumption of 0.11/.05A.

-2SQR model: shall include, (2) attached 6V-5.4W incandescent wedge-based lamp heads and offer 12 watts extra remote battery capacity with power consumption of 0.11/.05A.

-2SQR-ID model: shall include, (2) attached 6V-5.4W incandescent wedge-based lamp heads and offer 12 watts extra remote battery capacity with self-diagnostic option and have power consumption of 0.11/.05A.

-0R-ID model: shall include no attached heads and offer 22W extra remote battery capacity with power consumption of 0.11/.05A.

When specified, the Combination models and remote capacity Exit Sign with Improved Diagnostics (-ID) shall include a self-test and silent diagnostic function managed by a micro-controller; it shall execute automatic tests for one minute every 30 days, 30 minutes every 60 days and 90 minutes annually. A diagnostic circuit shall continuously monitor the performance of the battery, charger module and LED lamps. When a fault is detected, the pilot light shall change color from green to red and flash with a specific code. The red light is steady-on in case of a battery disconnect; it will flash with one blink for battery failure; two blinks for charger failure and four blinks for LED lamp failure. A label with the diagnostic legend shall be visible next to the pilot light.

The combination models and remote capacity Exit Sign shall be tested by Underwriters Laboratories, listed to UL 924 standardsand UL listed for Damp location (50°F to 104°F, 10°C to 40°C). The combination models and remote capacity Exit Sign shall meet NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards. Includes a three-year full warranty.

The combination model or remote capacity Exit Sign unit shall be **Lightalarms®** Model _____.

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

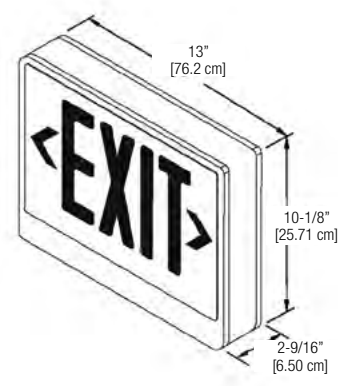
Combination unit with tool-less field-adjustable heads to accommodate top mount requirements or a no-head version for maximum remote capacity abilities

DIMENSIONS

Dimensions are approximate and subject to change.

Remote Capacity Unit

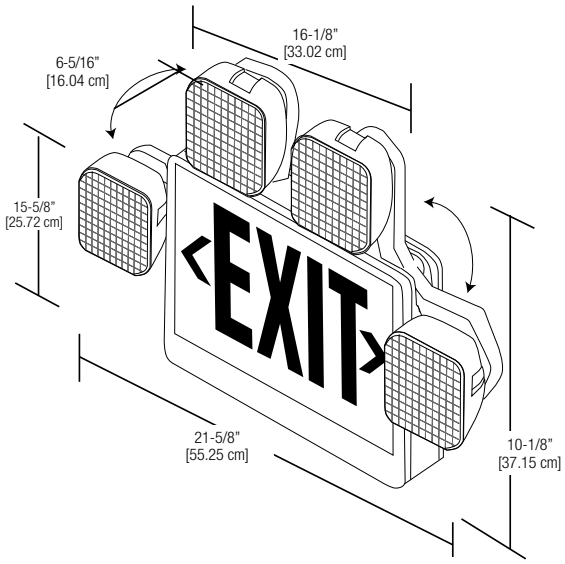
Shown with no mounted heads
(UQLXN500R 0R-ID model)



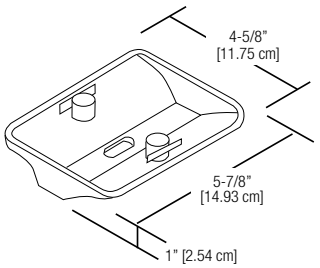
Combination Unit

Includes (2) heads only, dimension shown for top mount or side mount applications

(Models ending with suffix -2SQ, -2SQR and -2SQR-ID)



Canopy



ORDERING FORMAT

SERIES	LEGEND COLOR	LAMP TYPE/CAPACITY
UQLXN500	**R**= Red **G**= Green	**-2SQ**= (2) 6V-5.4W heads, no remote capacity (red or green legend) **-2SQR**= (2) 6V-5.4W heads, 6V-12W remote capacity (red or green legend) **-2SQR-ID**= (2) 6V-5.4W heads, 6V-12W remote capacity, improved-diagnostic (red legend only) **-0R-ID**= No heads, 6V-22W remote capacity, improved-diagnostic (red legend only)[1] [1] Not compatible with LED remotes

EXAMPLE: UQLXN500R2SQR

CLUSTER™ LED UQLXN500-2LED COMBO & ELF652D SERIES

Thermoplastic LED Combination Unit

FEATURES

Housing

- Frame, faceplate, backplate and canopy are made of thermoplastic
- 6 inch EXIT lettering legend, available in Red or Green
- Lamp heads are fully adjustable with no tools required

Mounting

- Surface Mount
- Model includes (2) faceplate, (1) backplate and (1) canopy
- Canopy included for ceiling mount applications
- Backplate features universal knockouts for a standard 4 inch junction box, used in wall mount applications

Finishes

- Finished in Mist-White

Chevrons

- Faceplate includes two field-selectable, snap-in/out chevron indicators

Exit Legend LEDS

- Red or Green Long-Life Light Emitting Diodes (LED) illumination

Combination units

- 3.6V Nickel-Metal Hydride battery

Lamp Head Source

- White LED 3.6V-4W, with life expectancy 50,000+ hours

Self-Diagnostics

- Available

Special Wording Panels

- Not Available

Approvals

- Listed to UL 924 Standards
- UL listed for Damp location (68°F to 86°F, 20°C to 30°C)
- Meets NFPA101 (Life Safety Code), NFPA 70 NEC and OSHA illumination standards

Warranty

- Three-year full warranty (subject to proper installation and maintenance)
- 3.6V Nickel-Cadmium battery, three-year full, three-year pro-rata warranty

POWER CONSUMPTION CHART

SERIES	CURRENT (A) / POWER (W)	
	120VAC, 60Hz	277VAC, 60Hz
UQLXN500R-2LEDR	0.044/3.56	0.037/4.06
UQLXN500G-2LEDR	0.042/3.2	0.036/3.8

SPECIFICATIONS

Supply and Install **Lightalarms® Cluster™ UQLXN500-2LED** Series.

The combination model specified includes (2) faceplate, (1) backplate and (1) canopy. The frame, faceplate, backplate and canopy shall be constructed of inject-molded thermoplastic. Frame, backplate and canopy shall be mist-white. Faceplate shall be mist-white with a (R) red or (G) green legend. Push-to-snap design, allows for no screws being necessary to hold the faceplate(s) or backplate together. The faceplate shall come standard with two field-selectable, removable snap-in/out chevron indicators. The combination model shall be suitable for surface mount, wall or ceiling installations.

The EXIT illumination source shall be Light Emitting Diodes (LED) in (R) red or (G) green color. The LEDs shall provide illumination in normal and emergency operation mode. The LEDs shall be mounted inside the Exit Sign housing. A color matching LED sensitive legend diffuser of (R) red or (G) green, shall be mounted in front of the LEDs to provide the 6" high by ¾" stroke EXIT letters with even illumination and no visible LEDs or hot spots.

Combination model shall be equipped with two white Cluster™ LED glare-free heads with tool-less, adjustable abilities. Combination models shall be 120/277VAC, 60Hz, with a 3.6V power consumption of .1/.05A and supplied with a sealed maintenance-free Nickel-Metal Hydride battery, providing at least 90 minutes illumination upon AC failure.

The Combination unit shall be tested by the Underwriting Laboratories and listed to UL 924 standards. As well as Evaluated to UL 924 standard (68°F to 86°F, 20°C to 30°C) and meets NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards. Includes a Three-year full warranty.

The equipment shall be **Lightalarms®** Model: _____ .

TYPE _____

CATALOG # _____

_____

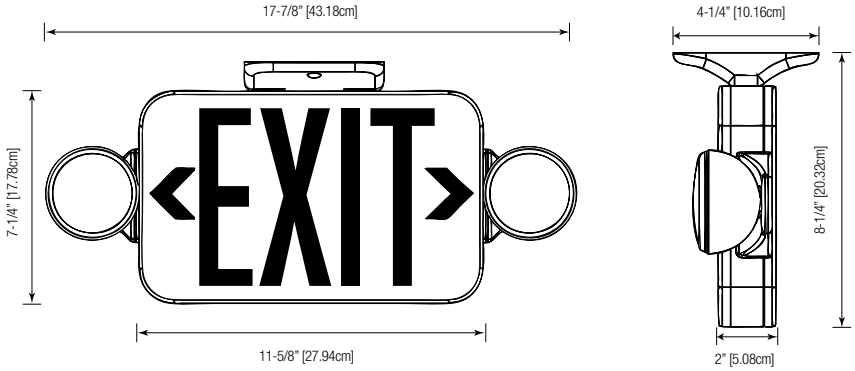
NOTES _____

_____

The Cluster™ LED Family features a Combination unit which includes extra battery capacity to power the Cluster™ LED ELF652D remote head or allow for extended run time.

DIMENSIONS

Dimensions are approximate and subject to change.



ORDERING FORMAT

SERIES	LEGEND COLOR	LAMP	CAPACITY
UQLXN500	**R**= Red **G**= Green	**-2LED**= Cluster™ LED head style	**Blank**= No option **R**= Remote capacity **RID**= Remote capacity & Improved diagnostics Note: Remote capacity can ONLY be used to power the Cluster™ LED ELF652D/LED Remote Head or to extend the combo's emergency run time beyond the standard 90 minutes.

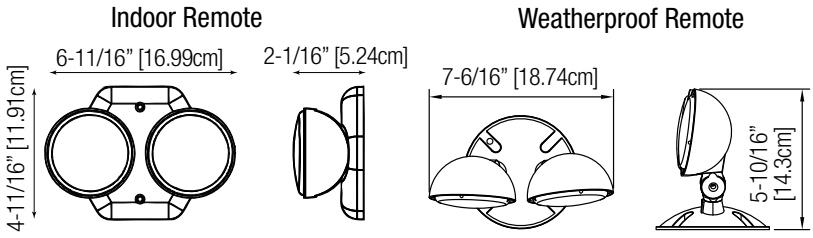
Example: UQLXN500R-2LEDR

CLUSTER™ LED ELF652D REMOTE HEAD

The **Cluster™ LED ELF652D/LED** Remote head can ONLY be powered from the UQLXN-2LED combo or LCA 2LED battery units of the same family. Used for internal or external applications, the indoor remote head draws 3.6V-3.6W and Weather-Proof head draws 3.6V-3.8W.

DIMENSIONS

Dimensions are approximate and subject to change.



ORDERING FORMAT

SERIES	# OF HEADS	LAMP	OPTION
ELF652	**D**= Double Head	**/LED**= Cluster™ LED head style	**Blank**= Indoor Use Only **-WP**= Weather-Proof

Example: ELF652D/LED

SEVERE™ XV & XVE SERIES

Nema 4X, Vandal Resistant and Harsh Environment Exit Sign

FEATURES

Construction

- Nema-4X certified for wall or ceiling mount
- Frame: Polyvinyl Chloride enclosure, fully gasketed around the lens, backplate and canopy to prevent water infiltration
- Faceplate: heavy-duty, vandal-resistant polycarbonate
- Backplate: heavy duty 1/8 inch thick aluminum
- Canopy: die-cast aluminum
- Stainless steel tamper-proof screws
- Magnetically operated test switch
- 6 inch EXIT lettering legend, available in Red or Green

Mounting

- Surface Mount
- Single face model includes (1) faceplate, (1) back-plate and (1) canopy
- Double face model includes (2) faceplates and (1) canopy
- Canopy included for end or ceiling mount applications
- Backplate features universal knockouts for a standard 4 inch junction box, used in wall mount applications
- Frame includes ½ inch conduit knock-out entry on top and sides.

Finishes

- Choice of finishes: white, black or gray
- Optional brushed aluminum faceplate stencil available

Chevrons:

- Faceplate includes two field-selectable, knock-out chevron indicators

LEDs

- Red or Green Long-Life Light Emitting Diodes (LED) illumination

Self-Diagnostics

- Self-Powered models standard with Improved Diagnostics
- NEXUS® Wired or Wireless system compatible

Special Wording Panels:

- Available. Contact your sales representative with your design requirements

Approvals

- Listed to UL 924 Standards Damp location 50°F to 104°F (10°C to 40°C)
- Meets NFPA101 (Life Safety Code), NFPA 70 NEC, OSHA illumination standards
- NEMA-4X 25°F -4°F (-4°C or -20°C)*
- Standard products AC-Only and AC/DC -40°F to 104°F (-40°C to 40°C); Optional: Cold Weather Self-Powered -4°F to 77°F (-20°C to 25°C)
- NSF Rated for food processing areas

*Available in wall or ceiling mount only

Warranty

- Five-Year full warranty (subject to proper installation and maintenance)

ACCESSORIES

(Order as a separate item)

Convert single face to double face, red (in the field)	**DFKR-***
Convert single face to double face, green (in the field)	**DFKG-***
Tamper-Proof Bit (extra)	**690.0454-L**

*Specify White (WT) or Black (BK) housing

SPECIFICATIONS

Supply and Install **Lightalarms® Severe™ XV, XVE** Series.

The Exit Sign specified as single face shall be standard with (1) faceplate, (1) backplate and (1) canopy and specified as double face shall be standard with (2) faceplates and (1) canopy. Frame shall be fabricated of a Polyvinyl Chloride enclosure with full gasket around the lens, backplate and canopy. Faceplate lens shall be heavy-duty, vandal-resistant polycarbonate. Backplate shall be heavy duty 1/8 inch thick aluminum. Canopy shall be constructed of die-cast aluminum. Shall include a magnetically operated test switch. 6 inch EXIT lettering legend, available in Red or Green. Frame, backplate and canopy shall be matching in color, (W) white (B) black or (G) gray. Faceplate shall be (W) white, (B) black, (G) gray or optional (A) brushed aluminum with a (R) red or (G) green legend.

Stainless steel tamper-proof screws hold the faceplate(s) or backplate to the frame. The faceplate shall come standard with two field-selectable, removable knockout chevron indicators. The single face Exit Sign shall be suitable for surface mount, wall, end or ceiling installations. The double face Exit Sign shall be suitable for surface mount, end or ceiling installations.

The illumination source shall be Light Emitting Diodes (LED) in (R) red or (G) green color. The LEDs shall provide illumination in normal and emergency operation mode. The LEDs shall be mounted inside the Exit Sign housing. A color matching LED sensitive legend diffuser of (R) red or (G) green, shall be mounted in front of the LEDs to provide the 6" high by ¾" stroke EXIT letters with even illumination and no visible LEDs or hot spots.

AC-Only models shall be 120-277VAC, 50/60Hz, universal, 2-wire input 120/277VAC, 50/60Hz.

AC/DC models shall be 120/277VAC, 50/60Hz, universal, 2-wire input.

120/277VAC, 50/60Hz and allows for DC operation from 6VDC to 48VDC with a DC draw of less than 1.5W.

Self-Powered models shall be 120-277VAC, 60Hz, (with a power consumption of 3.7) and supplied with a sealed maintenance-free Nickel-Cadmium battery, providing at least 90 minutes, illumination upon AC failure.

Self-Powered Exit Sign standard with Improved Diagnostics shall include a self-test and choice of silent or audible diagnostic function, managed by a micro-controller; it shall execute automatic tests for one minute every 30 days, 30 minutes every 60 days and 90 minutes annually. A diagnostic circuit shall continuously monitor the performance of the battery, charger module and LED lamps. When a fault is detected, the single service required indicator illuminates immediately. A detailed diagnostic display is located on the inside of the Exit Sign, out of sight from the general public. The detailed diagnostic display inside the Exit Sign will further indicate the nature of the fault.

The Exit Sign shall be tested by Underwriters Laboratories, listed to UL 924 standards, and UL listed for Damp location (50°F to 104°F, 10°C to 40°C) and meet NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards. Includes a five-year full warranty.

The Exit Sign shall be **Lightalarms®** Model _____.

POWER CONSUMPTION CHART

MODEL	AC SPECS		DC SPECS	
AC-Only	120-277VAC, 50/60Hz	1.2W	–	–
AC/DC	120/277VAC, 50/60Hz	1.2W	6 to 48VDC	Less than 1.5W
Self-Powered	120-277VAC, 50/60Hz	3.7W	Ni-Cd battery	Min. 90 minutes

nexus **NEMA-4X** NSF id improved diagnostics UL

TYPE _____

CATALOG # _____

_____

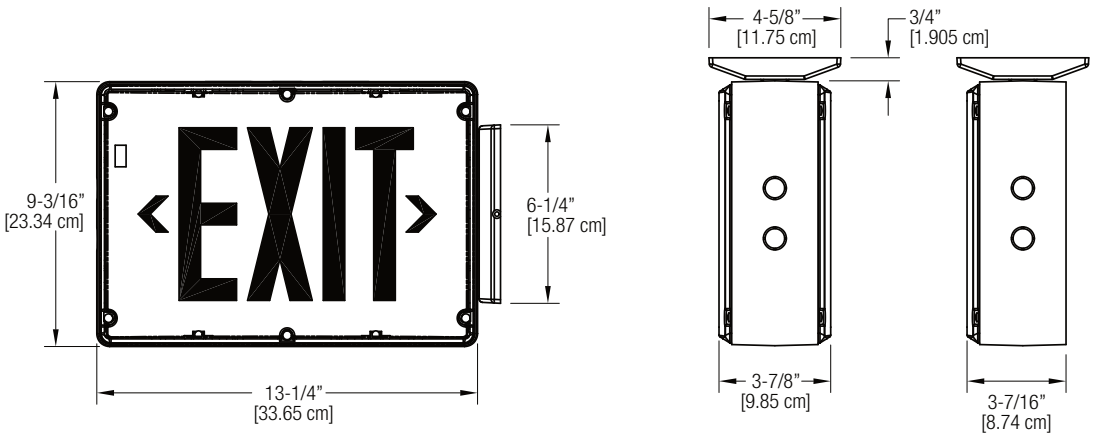
NOTES _____

_____

Designed specifically for NEMA-4X and harsh environments such as transit platforms, parking garages, schools, wet and cold locations or locations prone to vandalism

DIMENSIONS

Dimensions are approximate and subject to change.



ORDERING FORMAT

HOUSING/FACE COLOR	SERIES	FACES	LEGEND COLOR	DIAGNOSTICS	HOUSING	OPTIONS
Blank= Black/Black **BW**= Black/White **BA**= Black/Aluminum **GB**= Gray/Black **GW**= Gray/White **GA**= Gray/Aluminum **WB**= White/Black **WW**= White/White **WA**= White/Aluminum	**XV**= AC-only **XVE**= Self-Powered Nickel-Cadmium battery	**-1**= Single face **-2**= Double face	**-R**= Red **-G**= Green	**Blank**= AC-Only Models **-D=** Improved Diagnostic (non-audible, standard)[1] **-NEX**= Nexus® Wired[1], **-NEXRF**= Nexus® Wireless[1] [1] Available with Self-Powered models only.	**-4X**= NEMA-4X housing	**Blank**= No options **-2**= Dual Circuit (120/120 or 277/277AC only)[1] **-DC**= AC/DC 6V to 48VDC[1] **-1**= Flasher only[1] **-F**= Fire alarm activated flasher[1] **-FB**= Flasher/buzzer (Self-Powered only)[1] **-CW**= Cold weather (Self-Powered -4°F to 77°F, -20°C to 25°C) (AC-Only and AC/DC -40°F to 77°F, -40°C to 25°C) **-Y**= Open face/special wording **-CM**= Canopy pendant mount [1] Not available with -NEX or -NEXRF, Nexus® option.

EXAMPLE: BAXVE-1-R-D-4X-CW

SEVERE™ NEMA-4X RATED AND NSF CERTIFIED FAMILY

The **Severe™ XV Series** Exit Sign is a part of the **Severe™** family of NEMA-4X rated emergency lighting products. The **Severe™** family offers complete emergency lighting solutions for commercial and industrial environments where protection against humidity, dust, water infiltration and the risk of vandalism are specification criteria. These products deliver state-of-the-art illumination in a visually appealing package.

Severe™ XV Combination Series
p.42

Severe™ V Battery Series
p.90

Severe™ ELF650 Remote Series
p.111

SEVERE™ XV12E & XV24E COMBINATION SERIES

Nema 4X, Vandal Resistant and Harsh Environment Combination Unit

FEATURES

Construction

- Frame: Polyvinyl Chloride enclosure, fully gasketed around the lens, backplate and canopy to prevent water infiltration
- Faceplate: heavy-duty, vandal-resistant polycarbonate
- Backplate: heavy-duty 1/8 inch thick aluminum
- Canopy: constructed of die-cast aluminum
- Heads protected by a shock-absorbent, clear polycarbonate lens
- Stainless steel tamper-proof screws
- Magnetically operated test switch
- 6 inch EXIT lettering legend, available in Red or Green

Mounting

- Surface Mount
- Single face model includes (1) faceplate, (1) back-plate and (1) canopy
- Double face model includes (2) faceplates and (1) canopy
- Canopy included for end or ceiling mount applications
- Backplate features universal knockouts for a standard 4 inch junction box, used in wall mount applications
- Frame includes ½ inch conduit knock-out entry on top and sides.

Finishes

- Choice of finishes: white, black or gray
- Optional brushed aluminum faceplate stencil available

Chevrons

- Faceplate includes two field-selectable, knock-out chevron indicators

Exit Legend LEDs

- Red or Green Long-Life Light Emitting Diodes (LED) illumination

Combination Units

- XV12E Model, Nickel-Cadmium battery, 6V-12W total battery capacity
- XV24E Model, Nickel-Cadmium battery, 12V-24W total battery capacity (available remote capacity of 16W when using 12V-4W MR16 LED lamps)

Lamp Head Source

- Choice of MR16 halogen, 6V-6W, 12V-10W or 12V-12W
- Choice of MR16 LED, 6V or 12V-4W, 12V-5W or 12V-6W with life expectancy 50,000+ hours
- Lamp heads are fully adjustable with no tools required.

Self-Diagnostics

- Units standard with Improved Diagnostics
- NEXUS® Wired or Wireless system compatible

Special Wording Panels

- Available. Contact your sales representative with your design requirements

Approvals

- Listed to UL 924 Standards
- UL listed for Damp location (50°F to 104°F, 10°C to 40°C)
- UL listed for Cold Weather option (-40°F to 104°F, -40°C to 40°C)
- Meets NFPA101 (Life Safety Code), NFPA 70 NEC, OSHA illumination standards
- NSF Rated for food processing areas

Warranty

- Five-Year full warranty (subject to proper installation and maintenance)

SPECIFICATIONS

Supply and Install **Lightalarms® Severe™ XV12E, XV24E** Combination Series.

The combination model specified as single face shall be standard with (1) faceplate, (1) backplate and (1) canopy and specified as double face shall be standard with (2) faceplates and (1) canopy. Frame shall be fabricated of a Polyvinyl Chloride enclosure with full gasket around the lens, backplate and canopy. Faceplate lens shall be heavy-duty, vandal-resistant polycarbonate. Backplate shall be heavy-duty 1/8 inch thick aluminum. Canopy shall be constructed of die-cast aluminum. Lamp heads shall be protected by a clear polycarbonate lens. Model shall include a magnetically operated test switch, with 6 inch EXIT lettering legend, available in Red or Green. Frame, backplate and canopy shall be matching in color, (W) white (B) black or (G) gray. Faceplate shall be (W) white, (B) black, (G) gray or optional (A) brushed aluminum with a (R) red or (G) green legend.

Stainless steel tamper-proof screws hold the faceplate(s) or backplate to the frame. The faceplate shall come standard with two field-selectable, removable knockout chevron indicators. The single face Exit Sign shall be suitable for surface mount, wall, end or ceiling installations. The double face Exit Sign shall be suitable for surface mount, end or ceiling installations. The illumination source shall be Light Emitting Diodes (LED) in (R) red or (G) green color. The LEDs shall provide illumination in normal and emergency operation mode. The LEDs shall be mounted inside the Exit Sign housing. A color matching LED sensitive legend diffuser of (R) red or (G) green, shall be mounted in front of the LEDs to provide the 6" high by ¾" stroke EXIT letters with even illumination and no visible LEDs or hot spots. When specified the unit shall be equipped with two emergency heads protected by shock-absorbent, clear polycarbonate covers with tool-less adjustable swivels and MR16 halogen lamps or MR16 LED lamps as noted.

Combination Units shall be 120/277VAC, 50/60Hz, and supplied with a sealed maintenance-free Nickel-Cadmium battery, providing at least 90 minutes illumination upon AC failure.

XV12E model shall be 6V-12W with power consumption of 0.12/0.06A, less than 13W.

XV24E model shall be 12V-24W with power consumption of 0.17/.08A, less than 19W.

XV12E1 model with cold weather option shall be a 6V-12W with power consumption of 0.24/0.24A, less than 25W.

Combination Units standard with Improved Diagnostics shall include a self-test and choice of silent or audible diagnostic function, managed by a micro-controller; it shall execute automatic tests for one minute every 30 days, 30 minutes every 60 days and 90 minutes annually. A diagnostic circuit shall continuously monitor the performance of the battery, charger module, lamps and LED strip failure. When a fault is detected, the single service required indicator illuminates immediately. A detailed diagnostic display is located on the inside of the Combination Unit, out of sight from the general public. The detailed diagnostic display inside the unit will further indicate the nature of the fault.

The Combination Unit shall be tested by Underwriters Laboratories, listed to UL 924 standards, UL listed for Damp location (50°F to 104°F, 10°C to 40°C) and UL listed for Cold Weather option (-40°F to 77°F, -40°C to 25°C). The Combination Unit shall meet NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards. Includes a five-year full warranty.

The Combination Unit shall be **Lightalarms®** Model _____.

ACCESSORIES

(Order as a separate item)

Tamper-Proof Bit (Extra)	**690.0454-L**

NEW! AVAILABLE WITH LED LAMP HEADS

nexus NEMA-4X NSF id improved diagnostics UL

TYPE _____

CATALOG # _____

_____

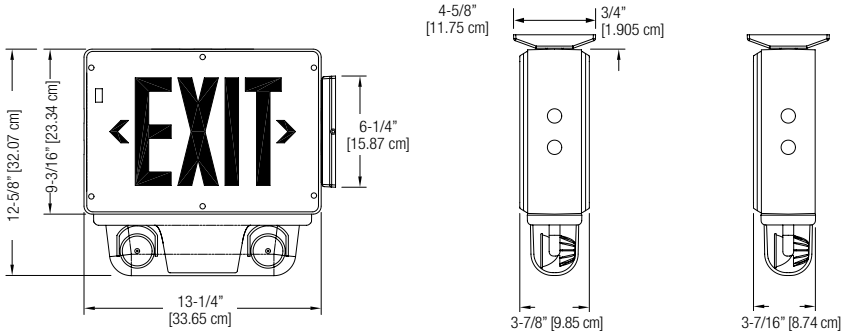
NOTES _____

_____

Designed and engineered for the toughest environments, this Combination Unit is suitable for industrial and commercial applications and public facilities

DIMENSIONS

Dimensions are approximate and subject to change.



POWER CONSUMPTION/UNIT RATING CHART

SERIES	AC SPECS		DC SPECS - WATTS TO 87.5% OF RATED BATTERY VOLTAGE*					
	AC Input	Current Draw	Voltage	Battery	1-1/2 hrs.	2 hrs.	3 hrs.	4 hrs.
XV12E	120/277VAC, 50/60Hz	0.12/0.06A - Less than 13W	6V	Nickel-Cadmium	12	9	-	-
XV24E		0.17/0.08A - Less than 19W	12V		24	18	12	9
Models with CW4 Option		0.24/0.12A - Less than 25W						

*National Electrical Code Specification

ORDERING FORMAT

HOUSING/ FACE COLOR	SERIES/ CAPACITY	FACES	LEGEND COLOR	DIAGNOSTICS	HOUSING	# OF HEADS	LAMP TYPE	OPTIONS
Blank= Black/Black **BW**= Black/White **BA**= Black/ Aluminum **WW**= White/White **WB**= White/Black **WA**= White/ Aluminum **GA**= Gray/Aluminum **GW**= Gray/White **GB**= Gray/Black	**XV12E**= 6V-12W **XV24E**= 12V-24W	**1=** Single face **2=** Double face	**R**= Red **G**= Green	**D**= Improved Diagnostics (non-audible standard) **DA**= Improved Diagnostics (audible) **NEX**= NEXUS® Wired [1] **NEXRF**= NEXUS® Wireless [1] [1] CSA US Approved only, consult your sales representative	**4X**= Nema 4X housing	**/0**= 0 head[1] **/0N**= 0 head[2] **/2**= Two heads [1] A remote load must be connected [2] With no remote load connected	**MR16 Halogen** **M6**= 6V-6W **M10**=12V-10W **M12** = 12V-12W **MR16 LED** **LD1**= 6V-4W **LD7**= 12V-4W **LD9**=12V-5W **LD10**=12V-6W	**-FAF**= Flasher (fire alarm activated) **-FB**= Flasher/buzzer (AC power failure)[1] **-FL**= Flasher (AC power failure)[1] **-208V**= 208VAC, 60Hz input **-240V**= 240VAC, 60Hz input **-208V50HZ**= 208VAC, 50Hz input **-CW4**= Cold weather 120/277V (-40°F/-40°C) [2] **-CM**= Canopy Pendant Mount [1] Not available with "D or DA" option [2] Single face only

EXAMPLE : WWXV12E1RDA4X/2M6CW4

SEVERE™ NEMA-4X RATED AND NSF CERTIFIED FAMILY

The **Severe™ XV Series** Combination Units is a part of the **Severe™** family of NEMA-4X rated emergency lighting products. The **Severe™** family offers complete emergency lighting solutions for commercial and industrial environments where humidity, dust, water infiltration and the risk of vandalism are specification criteria. These products deliver state-of-the-art illumination in a visually appealing package.

Severe™ XV Exit Series

p.40

Severe™ V Battery Series

p.90

Severe™ ELF650 Remote Series

p.111

SEVERE™ XVHZ & XVEHZ SERIES

Class I Division 2, Groups A, B, C and D, Hazardous Location Exit Sign

FEATURES

Construction

- Frame: Polyvinyl Chloride enclosure, fully gasketed around the lens, backplate and canopy to prevent water infiltration
- Faceplate: heavy-duty, vandal-resistant polycarbonate
- Backplate: heavy-duty 1/8 inch thick aluminum
- Junction Box: industrial-grade, made of die-cast aluminum
- Stainless steel tamper-proof screws (tamper-proof bit proved)
- Magnetically operated test switch
- 6 inch EXIT lettering legend, available in Red or Green

Mounting

- Surface Mount
- Single face model includes (1) faceplate, (1) back-plate and (1) junction box
- Double face model includes (2) faceplates and (1) junction box
- Junction box included for wall, end or ceiling mount applications
- Frame includes ½ inch conduit knock-out entry on top and sides.

Finishes

- Finished in industrial gray

Chevrons

- Faceplate includes two field-selectable, knock-out chevron indicators

LEDs

- Red or Green Long-Life Light Emitting Diodes (LED) illumination

Self-Diagnostics

- Self-Powered models available standard with Improved Diagnostics
- NEXUS® Wired or Wireless system compatible

Special Wording Panels

- Available. Contact your sales representative with your design requirements

Approvals

- CSA-US Listed for Hazardous Locations
- Evaluated to UL844 standard for Class I Division 2, Groups A, B, C and D
- Evaluated to UL924 and UL1598 standard
- Temperature Code: T6 (maximum 85°C, 185°F)
- Suitable for cold weather: -4°F (-20°C) (Self-Powered model with CW option) and -40°F (-40°C) (AC-only model)
- Meets NFPA101 (Life Safety Code), NFPA 70 NEC & OSHA illumination standards

Warranty

- Five-Year full warranty (subject to proper installation and maintenance)

ACCESSORIES

(Order as a separate item)

Tamper-Proof Bit (Extra)	**690.0454-L**

SPECIFICATIONS

Supply and Install **Lightalarms® Severe™ XVHZ, XVEHZ** Series.

The Exit Sign specified as single face shall be standard with (1) faceplate, (1) backplate and (1) junction box and specified as double face shall be standard with (2) faceplates and (1) junction box. Frame shall be fabricated of a Polyvinyl Chloride enclosure with full gasket around the lens, backplate and junction box. Faceplate lens shall be heavy-duty, vandal-resistant polycarbonate. Backplate shall be heavy-duty 1/8 inch thick aluminum. Canopy shall be constructed of die-cast aluminum. Shall include ½ inch electrical conduit entry on both sides and top of frame, a magnetically operated test switch and 6 inch EXIT lettering legend, available in Red or Green.

Frame, backplate and junction box shall be matching in color, (G) Gray. Faceplate shall be (G) gray with a (R) red or (G) green legend.

Stainless steel tamper-proof screws hold the faceplate(s) or backplate to the frame. The faceplate shall come standard with two field-selectable, removable knockout chevron indicators. The single face Exit Sign shall be suitable for surface mount, wall, end or ceiling installations. The double face Exit Sign shall be suitable for surface mount, end or ceiling installations.

The illumination source shall be Light Emitting Diodes (LED) in (R) red or (G) green color. The LEDs shall provide illumination in normal and emergency operation mode. The LEDs shall be mounted inside the Exit Sign housing. A color matching LED sensitive legend diffuser of (R) red or (G) green, shall be mounted in front of the LEDs to provide the 6" high by ¾" stroke EXIT letters with even illumination and no visible LEDs or hot spots.

AC-Only models shall be 120/277VAC, 50/60Hz, with a power consumption of less than 2W.

Self-Powered models shall be 120/277VAC, 50/60Hz, with a power consumption of less than 2.5W and supplied with a sealed maintenance-free Nickel-Cadmium battery, providing at least 90 minutes illumination upon AC failure.

Self-Powered Exit Sign standard with Improved Diagnostics shall include a self-test and silent diagnostic function, managed by a micro-controller; it shall execute automatic tests for one minute every 30 days, 30 minutes every 60 days and 90 minutes annually. A diagnostic circuit shall continuously monitor the performance of the battery, charger module and LED lamps. When a fault is detected the single service required indicator illuminates immediately. A detailed diagnostic. display is located on the inside of the Exit Sign, out of sight from the general public. The detailed diagnostic display inside the Exit Sign will further indicate the nature of the fault.

The Exit Sign shall be tested by CSA-US Listed for Hazardous Locations, evaluated to UL844 standard for Class I Division 2, Groups A, B, C and D evaluated to UL924 and UL1598 standards, have a temperature code rating of T6 (maximum 85°C 185°F, shall be suitable for cold weather: -20°C (Self-Powered model with CW option) and -40°C (AC -only model) and shall meet NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards. Includes a five-year full warranty.

The Exit Sign shall be **Lightalarms®** Model _____.

POWER CONSUMPTION CHART

MODEL	AC SPECS		DC SPECS	
AC-Only Red	120/277VAC, 50/60Hz	Less than 2W	–	–
AC-Only Green	120/277VAC, 50/60Hz	Less than 1.5W	–	–
Self-Powered Red	120/277VAC, 50/60Hz	Less than 2W	Nickel-Cadmium battery	Minimum of 90 minutes
Self-Powered Green	120/277VAC, 50/60Hz	Less than 2.5W	Nickel-Cadmium battery	Minimum of 90 minutes

TYPE _____

CATALOG # _____

_____

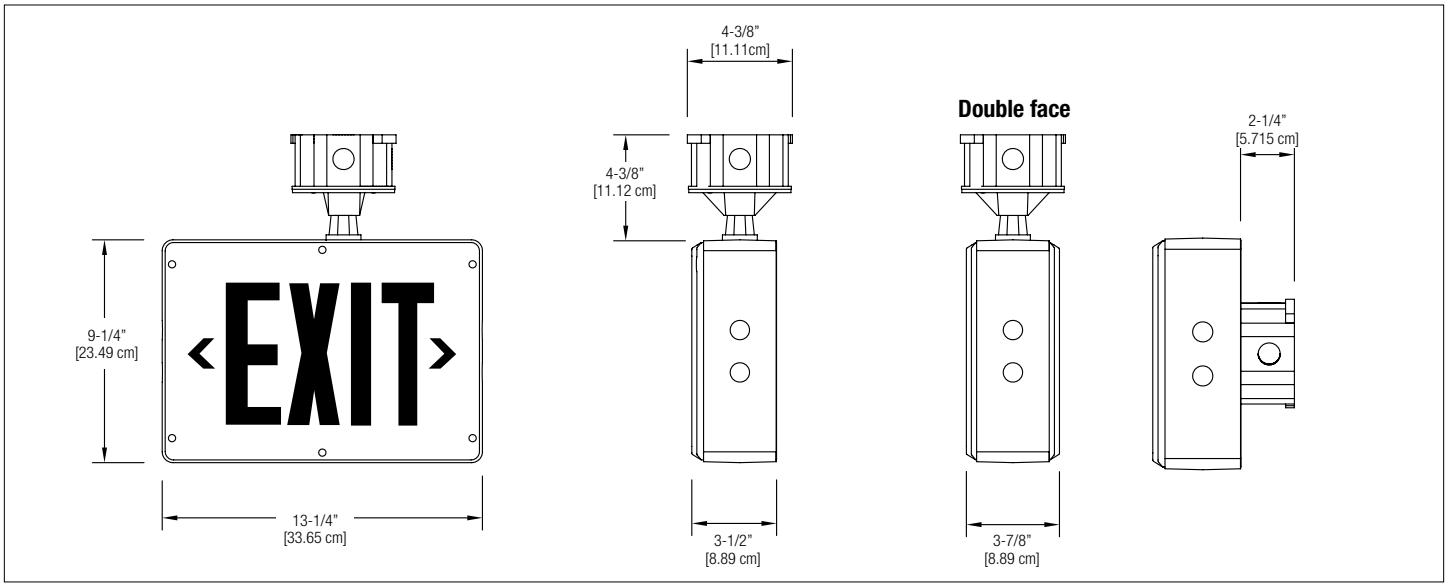
NOTES _____

_____

Ideally suited for areas with the potential for flammable gases, vapors or liquids to create an explosive atmosphere

DIMENSIONS

Dimensions are approximate and subject to change.



ORDERING FORMAT

HOUSING/FACE COLOR	SERIES	FACES	LEGEND COLOR	DIAGNOSTIC	OPTIONS
GG= Gray/Gray	**XVHZ**= AC-Only **XVEHZ**= Self-Powered	**1**= Single Face **2**= Double Face	**R**= Red **G**= Green	**Blank**= AC-Only Models **-D=** Improved Diagnostic (included standard non audible)[1] **-NEX**= Nexus® Wired[1,2] **-NEXRF**= Nexus® Wireless[1,2] [1] Available with Self-Powered models only. [2] Consult your sales representative	**CW**= Cold weather (Self-Powered -13°F, -20°C) (AC-only -40°F, -40°C)

EXAMPLE : GGXVEHZ2R-DCW

SEVERE™ CLASS 1, DIVISION 2 FAMILY

The **Severe™ XVHZ & XVEHZ** Exit Sign is part of the **Severe™** family of Class I Division 2 rated emergency lighting products. Extremely resistant to water, strong impacts, vibrations and variations in temperature, this family of products is ideally suited for areas with the risk of the presence of flammable gases, or vapors or liquids able to create an explosive gas atmosphere.

Severe™ XVH Combo Series
p.46

Severe™ VH Battery Series
p.92

Severe™ ELF 651 Remote Series
p.113

SEVERE™ XVH, XVH12N & XVH12H COMBINATION SERIES

Class I Division 2, Groups A, B, C and D Hazardous Location Combination Unit

FEATURES

Construction

- Frame: fabricated of a Polyvinyl Chloride enclosure, fully gasketed around the lens and backplate to prevent water infiltration
- Faceplate: heavy-duty, vandal-resistant polycarbonate
- Backplate: heavy-duty 1/8 inch thick aluminum
- Heads protected by shock-absorbent, clear polycarbonate covers
- Stainless steel tamper-proof screws
- Magnetically operated test switch
- 6 inch EXIT lettering legend, available in Red or Green

Mounting

- Surface Wall Mount ONLY
- Single face model includes (1) faceplate and (1) back-plate
- Backplate features universal knockouts for a standard 4 inch junction box, and four mounting eyelets used in wall mount applications
- Frame includes ½ inch conduit knock-out entry on top and sides.

Finishes

- Finished in industrial gray

Chevrons

- Faceplate includes two field-selectable, knock-out chevron indicators

Exit Legend LEDs

- Red or Green Long-Life Light Emitting Diodes (LED) illumination

Combination Units

- XVH Model, Nickel-Cadmium battery, 6V-20W total battery capacity
- XV12N Model, Nickel-Cadmium battery, 12V-24W total battery capacity
- XV12H Model, Nickel-Metal Hydride battery, 12V-40W total battery capacity

Lamp Head Source

- Choice of MR16, 6V 10W or 12V up to 20W
- Choice of MR16 LED, 6V or 12V-4W or 12V-5W each lamps
- Lamp heads are fully adjustable with no tools required.

Self-Diagnostics

- Combination Units standard with Improved Diagnostics
- NEXUS® Wired or Wireless system compatible

Special Wording Panels

- Available. Contact your sales representative with your design requirements

Approvals

- CSA US Listed for Hazardous Locations
- Evaluated to UL844 standard for Class I Division 2, Groups A, B, C and D
- Evaluated to UL924 and UL1598 standard
- Temperature Code: 6V-10W MR16 lamp, T3C (max 320°F, 160°C)
- Temperature Code: 12V-12W MR16 lamp, T3A (max 356°F, 180°C)
- Temperature Code: 12V-20W MR16 lamp, T2D (max 419°F, 215°C)
- Temperature Code: All LED lamps, T4A (max 248°F, 120°C)
- Meets NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards

Warranty

- Five-Year full warranty (subject to proper installation and maintenance)

ACCESSORIES

(Order as a separate item)

Tamper-Proof Bit (extra)	**690.0454-L**

SPECIFICATIONS

Supply and Install **Lightalarms® Severe™ XVH, XVH12N, XVH12H** Combination Series.

The combination model specified as single face shall be standard with (1) faceplate, and (1) backplate. Frame shall be fabricated of a Polyvinyl Chloride enclosure with full gasket around the lens and backplate. Faceplate lens shall be heavy-duty, vandal-resistant polycarbonate. Backplate shall be heavy duty 1/8 inch thick aluminum with 4 mounting eyelets. Lamp heads shall be protected by a clear polycarbonate lens. Model shall include stainless steel tamper-resistant screws, tamper-proof bit, magnetically operated test switch, and 6 inch EXIT lettering legend, available in Red or Green. Frame, and backplate shall be matching in color, industrial (G) Gray. Faceplate shall be industrial (G) gray with a (R) red or (G) green legend.

Stainless steel tamper-proof screws hold the faceplate(s) or backplate to the frame. The faceplate shall come standard with two field-selectable, removable knockout chevron indicators. The single face Combination unit shall be suitable for surface wall mount installations only.

The illumination source shall be Light Emitting Diodes (LED) in (R) red or (G) green color. The LEDs shall provide illumination in normal and emergency operation mode. The LEDs shall be mounted inside the Exit Sign housing. A color matching LED sensitive legend diffuser of (R) red or (G) green, shall be mounted in front of the LEDs to provide the 6" high by ¾" stroke EXIT letters with even illumination and no visible LEDs or hot spots.

When specified, the unit shall be equipped with two emergency heads protected by shock-absorbent, clear polycarbonate covers with tool-less adjustable swivels and MR16 halogen lamps as noted.

Combination Units shall be 120/277VAC, 50/60Hz, and supplied with a sealed maintenance-free battery, providing at least 90 minutes illumination upon AC failure.

XVH model shall be Nickel-Cadmium battery 6V-20W with power consumption of .15/.07A, less than 16W.

XVH12N model shall be a Nickel-Cadmium battery 12V-24W with power consumption of .30/.08A, less than 29W.

XVH12H model shall be a Nickel-Metal Hydride battery 12V-40W with power consumption of .30/.08A, less than 29W.

Combination Units standard with Improved Diagnostics shall include a self-test and choice of silent or audible diagnostic function, managed by a micro-controller; it shall execute automatic tests for one minute every 30 days, 30 minutes every 60 days and 90 minutes annually. A diagnostic circuit shall continuously monitor the performance of the battery, charger module, lamps and LED strip failure. When a fault is detected, the single service required indicator illuminates immediately. A detailed diagnostic display is located on the inside of the Combination Unit, out of sight from the general public. The detailed diagnostic display inside the unit will further indicate the nature of the fault.

The Combination Unit shall be tested by CSA US Listed for Hazardous Locations, evaluated to UL844 standard for Class I Division 2, Groups A, B, C and D, evaluated to UL924 and UL1598 standards, Temperature Code: 6V 10W MR16 lamp, T3C (max 320°F, 160°C); 12V 12W MR16 lamp, T3A (max 356°F, 180°C); 12V 20W MR16 lamp, T2D (max 419°F, 215°C). The Combination Unit shall meet NFPA101 (Life Safety Code), NFPA 70-NEC and OSHA illumination standards. Includes a five-year full warranty.

The Combination Unit shall be **Lightalarms®** Model _____.

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

nexus id improved diagnostics UL

Designed for installations in Hazardous Locations with the risk of presence of flammable gases, vapors or explosive liquids

DIMENSIONS

Dimensions are approximate and subject to change.

TEMPERATURE CODES

LAMP RATING	TEMPERATURE CODE	MAX. TEMPERATURE	REPLACEMENT LAMP PART #
6V-10W	T3C	320°F (160°C)	580.0079
12V-12W	T3A	356°F (180°C)	580.0080
12V-20W	T2D	419°F (215°C)	580.0068
6V-4W LED	T4A	248°F (120°C)	580.0097
12V-4W LED	T4A	248°F (120°C)	580.0093
12V-5W LED	T4A	248°F (120°C)	580.0104

Note: Use qualified replacement lamps to avoid risk of over-heating

POWER CONSUMPTION/UNIT RATING CHART

SERIES	AC INPUT	MAXIMUM		STAND-BY		WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
	(VAC)	Current (Amp)	Power (Watt)	Current (Amp)	Power (Watt)	1-1/2 hrs	2 hrs	3 hrs	4 hrs
XVH	120/277VAC, 50/60Hz	0.15 / 0.07	16	0.09 / 0.03	8	20	15	–	–
XVH12N	120/277VAC, 50/60Hz	0.30 / 0.08	29	0.13 / 0.05	10	24	18	12	–
XVH12H	120/277VAC, 50/60Hz	0.30 / 0.08	29	0.13 / 0.05	10	40	30	20	12

*National Electrical Code Specification

ORDERING FORMAT

HOUSING/FACE COLOR	SERIES	LEGEND COLOR	DIAGNOSTIC	NO. OF HEADS	LAMP TYPE[1]
GG= Gray/Gray	**Nickel-Cadmium battery** **XVH**= 6V-20W **XVH12N**= 12V-24W **Nickel-Metal Hydride battery** **XVH12H**= 12V-40W	**R**= Red **G**= Green	**-D=** Improved Diagnostic (included standard – non-audible) **-DA=** Improved Diagnostic (audible) **-NEX**= Nexus® Wired[1] **-NEXRF**= Nexus® Wireless[1] [1] Consult your sales representative	**/0**= No head[1] **/2**= 2 heads [1] A remote load must be connected	**M10**= 6V-10W MR16 **M12**= 12V-12W MR16 **MH20**= 12V-20W MR16, High output **LD1**= 6V-4W MR16, LED **LD7**= 12V-4W MR16, LED **LD9**= 12V-5W MR16, LED [1] No other lamp option available.

EXAMPLE: GGXVHRD/2M10

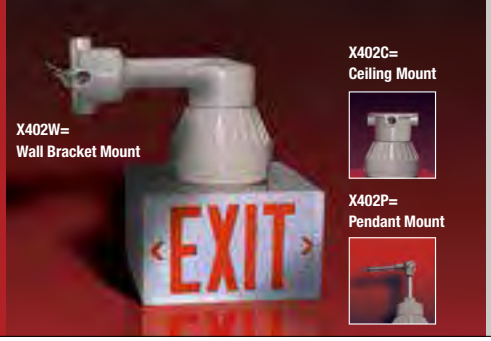
SEVERE™ CLASS 1, DIVISION 2 FAMILY

The **Severe™ XVHZ & XVEHZ** Exit Sign is part of the **Severe™** family of Class I Division 2 rated emergency lighting products exit sign and remote are extremely resistant to water, strong impacts, vibrations and variations in temperature, this family of products is ideally suited for areas with the risk of the presence of flammable gases, or vapors or liquids able to create an explosive gas atmosphere.

Severe™ XVHZ & XVEHZ Exit Series
p.44

Severe™ VH Battery Series
p.92

Severe™ ELF 651 Remote Series
p.113



Lightalarms

X402 AC-ONLY, AC/DC & SELF-POWERED EXIT SIGN & COMBINATION UNITS

Class I, Division 1 & 2, Groups C and D
Class II, Division 1 & 2, Groups E, F and G

FEATURES

Construction
- EXP Housing: Hazardous Location, heavy gauge copper-free case aluminum
- Spin-off gasketed cover prevents propagation of internally generated arcs
- Stainless steel vent/drain
- Circuit board: silicone conformal coated
- Sealed test switch
- X402 Exit and Lamp Head fixture: heavy cast aluminum with pyrex lens
- Exit Faceplate: heavy-duty 20 gauge steel, baked enamel grey finish
- 6 inch EXIT lettering legend, available in Red or Green

Mounting
- X402 AC-Only, AC/DC Exit Head, Surface Mount, ceiling, wall or pendant
- EXP Self-Powered Exit Sign Surface Wall Mount Only
- EXP Combination Unit Surface Wall Mount Only
- Self-Powered and Combination Housing includes (4) mounting lugs on each corner and 3/4 inch NPT conduit knock-outs entry on top and bottom of housing
- X402 & EXP single face model includes (1) faceplate
- X402 Double face model includes (2) faceplates

Finishes
- Finished in industrial gray

Chevrons
- Faceplate includes two field-selectable, knock-out chevron indicators

Approvals
- Manufactured in accordance with UL844, UL1203, and UL924
- Rated for operation in Class I, Division 1 & 2, Groups C and D
- Rated for operation in Class II, Division 1 & 2, Groups E, F and G
- Complies with NEC, OSHA and NEMA for above Classes and Groups

Warranty
- Three-Year full warranty (subject to proper installation and maintenance)

For Desired Model
- AC-Only Exit: Order X402 Exit Sign to be powered by a separate AC power source during emergency operation
- AC/DC Exit: Order X402 Exit Sign and a Transfer Switch Panel thus allowing for emergency operation to be supplied by a separate remote DC source
- Self-Powered Exit: Order EXP6N or EXP12N with attached X402 Exit Sign
- Combination Units: Order EXP6N or EXP12N, a E402 Light Head, and X402 Exit Sign

Transfer Circuit

(needed to be ordered separately with AC/DC Exit Signs)
- A TS panel is required for AC/DC Hazardous Location X402 Exit Signs that are under constant operation as required by code. TS panels are not designed to be installed/mounted in a hazardous or explosive area. TS panels are to be mounted remotely from these areas types.
- TS panel available for up to 6V= 50W, 12V= 100W, 24V= 100W

To Order a TS Panel the following information is required:
1) AC Input. 120V and other voltages are available
2) DC voltage.
3) The total wattage load of all X402 lamp(s) to be supplied by TS Panel

Electrical Specifications for the TS Panel
Input AC voltage; 120V, 60Hz, 1 phase (other voltages available)
Input DC voltage; 6, 12 or 24V (must select which applies)
Input DC voltage must be identical to DC output voltage
Wattage: TS Panel oversized 10-20% greater than total connected load.

Matching Hazardous Location Family Battery Units
p.94-95

SPECIFICATIONS

Supply and Install **Lightalarms® X402, EXP6N, EXP12N** Hazardous Location Exit Sign & Combination Series.

X402 AC-Only or AC/DC Exit Sign, housing shall be specified mounting (C) ceiling, (W) wall or (P) pendant, with single face including (1) faceplate, and (1) backplate, double face including (2) faceplates. Self-Powered Exit Sign housing is wall mount and single face only. Combination unit housing is wall mount and single face only plus (1) lamp head. Self-Powered and combination units use sealed Nickel-Cadmium batteries

EXP housing: shall be Hazardous Location, corrosion resistant, one-piece heavy gauge copper-free case aluminum, with spin-off gasketed cover prevents propagation of internally generated arcs into the hazardous atmosphere, stainless steel vent/drain and circuit board silicone conformal coated to protect against humidity. The Exit and Lamp Head fixture shall be heavy cast aluminum with pyrex lens. All shall be industrial gray color finish.

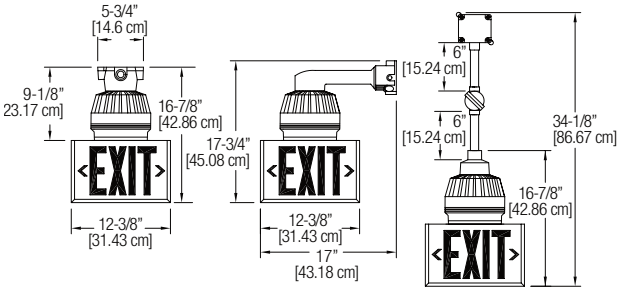
Exit faceplate include two removable knockout chevron indicators and choice of (R) red or (G) green, legend with 6" by ¾" stroke letters.

The Exit Sign or combination unit shall be **Lightalarms®** Model _____.

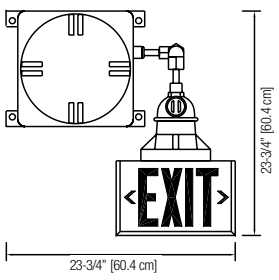
DIMENSIONS

Dimensions are approximate and subject to change.

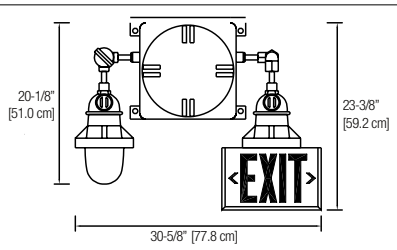
AC-Only and AC/DC Exit Signs



Self-Powered Exit Sign



Combination Units



TYPE _____

CATALOG # _____

NOTES _____

Designed to allow the safe operation of Exit Sign and Combination Unit batteries in a Class I, Division 1&2, Groups C&D, and a Class II, Division 1&2, Groups E, F & G explosive environments

Combination Unit

E402 LIGHT HEAD (ONLY), LAMP SECTION CHART

LAMP TYPE	VOLTAGE	LAMP WATTAGE	LAMP TYPE #	LAMP SUFFIX	REPLACEMENT LAMP PART #
High Intensity Tungsten (HIT)	6V	9W	135	L9	570.0010
	6V	18W	1130	L18	570.0037
	12V	9W	138	L9	570.0011
	12V	18W	139	L18	570.0030
	12V	25W	1076	L25	570.0031
BI-PIN Halogen	6V	6W	784	LH4	580.0012
	6V	8W	785	LH5	580.0013
	6V	10W	787	LH7	580.0017
	6V	12W	786	LH6	580.0011
	12V	8W	774	LH8	580.0014
	12V	12W	783	LH3	580.0015

UNIT CAPACITY CHART

VOLTS	SERIES	WATTS TO 87.5% OF RATED BATTERY VOLTAGE*				
		1 1/2 hrs.	2 hrs.	3 hrs.	4 hrs.	8 hrs.
6	EXP6N18	18	12	–	–	–
	EXP6N25	25	18	9	9	–
	EXP6N36	36	21	12	12	6
	EXP6N50	50	36	18	18	10
12	EXP12N36	36	21	12	12	6
	EXP12N50	50	36	18	18	10
	EXP12N72	72	42	24	24	12

*National Electrical Code Specification

POWER CONSUMPTION CHART

120/277VAC, 60Hz maximum 0.3/0.15A

X402 EXIT SIGN (ONLY), LAMP SELECTION CHART (lamp automatically specified in model number based on voltage of unit)

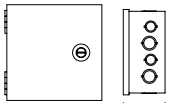
LAMP TYPE	VOLTAGE	LAMP WATTAGE	LAMP TYPE	AVERAGE LIFE (HOURS)	LAMP SUFFIX	REPLACEMENT LAMP PART #
Quartz Bi-Pin	6V	15W	JC-6V15W	2000	6	580.0086
	12V	25W	25A-12	1000	12	570.0071
Medium Base	24V		143A	1000	24	570.0118
	120V		A19	2500	120	570.0136

ORDERING FORMAT

AC-Only or AC/DC Exit Sign

Faces	Series	Mounting	Lamp	Legend color
1= Single Face **2=** Double Face	**X402**	**C=** Ceiling **W=** Wall **P=** Pendant	**-6=** 6V **-12=** 12V **-24=** 24V **-120=** 120V	**R=** Red **G=** Green

Transfer Panel (Required for the operation of the X402 AC/DC Exit Sign)

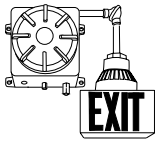


AC voltage	DC voltage	Series	Watts
120= 120V AC **277=** 277V AC	**-6=** 6V DC **-12=** 12V DC **-24=** 24V DC	**-TS**	**-25=** 25W **-50=** 50W **-75=** 75W **-100=** 100W

EXAMPLE: AC-Only or AC/DC Exit Sign: 1X402C12R, Transfer Panel (needed for AC/DC operation): 12012TS25

ORDERING FORMAT

Self-Powered Exit (Includes a Nickel-Cadmium battery)

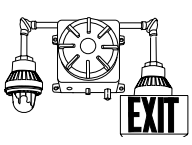


Series	Transfer Panel	Exit Sign	Legend color
EXP6N25 **EXP6N36** **EXP6N50** **EXP12N36** **EXP12N50** **EXP12N72**	**TS**	**X402**[1] [1] EXP6N includes 6V-15W Bi-Pin Halogen lamp [1] EXP12N includes 12V-25W Bi-Pin Halogen lamp	**R=** Red **G=** Green

EXAMPLE: EXP12N36TS402R

ORDERING FORMAT

Combination Unit (Includes a Nickel-Cadmium battery)



Series	Light Head	Light Head Lamp	Transfer Panel	Exit Sign	Legend color
EXP6N25 **EXP6N36** **EXP6N50** **EXP12N36** **EXP12N50** **EXP12N72**	**E402**	Refer to E402 Light Head (only), Lamp Section Chart to specify lamp suffix Based on Model, Choose a lamp up to: **EXP6N25**= 6V-10W **EXP12N36**= 12V-11W **EXP6N36**= 6V-18W **EXP12N50**= 12V-25W **EXP6N50**= 6V-18W **EXP12N72**= 12V-25W	**TS**	**X402*** * EXP6N includes 6V-15W Bi-Pin Halogen lamp * EXP12N includes 12V-25W Bi-Pin Halogen lamp	**R**= Red **G**= Green

EXAMPLE: EXP6N36E402LH6TSX402R

Lightalarms

XT TRITIUM™ SELF-LUMINOUS SERIES

Non-electric, uses no electrical power internally or externally to illuminate

TYPE _____

CATALOG # _____

NOTES _____

FEATURES

Construction
- Housing and frame are made of ABS Molding
- Faceplate lens is .13 thick acrylic
- Legend is non-glare polycarbonate
- Tamper-proof assembly with no removable fasteners
- 6" EXIT lettering legend, background available in Red or Green

Mounting
- Surface Mount
- Single face model includes (1) housing, (1) faceplate and (1) canopy
- Canopy included for wall, end or ceiling mount applications
- Double face model includes (2) housings, (2) faceplates and (1) canopy
- Canopy included for end or ceiling mount applications

Finishes
- Choice of finishes: white or black

Chevrons
- Two field-selectable direction chevrons

No Power Required
- Non-electric, uses no electrical power internally or externally to illuminate
- No wiring needed to operated
- No need to be illuminated by absorbing light from another source
- Spark-free, no filament, suitable for use in humid, corrosive or explosive environments

Illumination
- Provided by phosphor-coated borosilicate tubes filled with tritium gas
- Low energy beta emission of tritium striking the phosphor coating inside the glass tubes generates illumination for the life of the sign

Special Wording Panel Not Available

Approvals
- NFPA Life Safety Code 101
- UL 924
- City of Los Angeles
- State of California
- Council of American Building Officials (ICBO, SBCCI)
- OSHA
- USNRC
- ISO 9001

Warranty
- Full warranty for life of sign (subject to proper installation and maintenance)
- 10 year sign=10 full year warranty
- 20 year sign=20 full year warranty

ACCESSORIES

(Order as a separate item)

White Pendant	**PW-***
Black Pendant	**PB-***
Gray Pendant	**PA-***
Wire Guard-Wall Mount	**WG13-L**
Wire Guard-Ceiling Mount	**WG5-L**
Wire Guard-End Mount	**WG15-L**

*Specify length of pendant (12", 24", 36" etc.)

SPECIFICATIONS

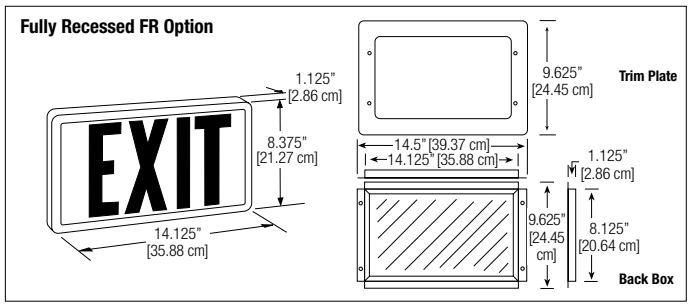
Supply and Install **Lightalarms® XT Tritium™ Self-Luminous** Series Exit Sign.

The housing, frame and canopy is ABS Molding with a clear faceplate of .13 thick acrylic. Housing, frame and canopy shall be matching in finish, (W) white or (B) black. A choice of non-glare polycarbonate legend (R) red or (G) green includes field-selectable, chevron indicators. Constructed in a tamper-proof assembly with no removable fasteners and no screws are necessary to hold the Exit Sign together. The Exit Sign shall be suitable for surface mount, wall, ceiling or end installations. The illumination source shall be provided by phosphor-coated borosilicate tubes filled with tritium gas. Low energy beta emission of tritium striking the phosphor coating inside the pyrex glass tubes shall generate illumination for the life of the sign. The illumination provides the 6" high by ¾" stroke exit letters with even illumination and no hot spots. The Exit Sign shall consume 0 watts of AC power energy, being non-electric, using no electrical power internally or externally to illuminate, no wiring needed to operate, and no need to be illuminated by absorbing light from another source. Spark-free, with no filament, suitable for use in humid, corrosive or explosive environments. The Exit Sign shall have the approval of UL - Underwriters Laboratories, OSHA – Occupational Safety and Health Administration, BOCA, ICBO, SBCCI – American Building Officials, MSHA – Mine Safety and Health Administration, NRC – Nuclear Regulatory Commission, Uniform, Basic and Standard Building Codes, meets ANSI (American National Standards Institute) for use in harsh or dangerous environments, meets requirements of NEC (National Electric Code), Class I and II. Full warranty for the life of the sign, 10 year sign=10 full year warranty, 20 year sign= 20 full year warranty.

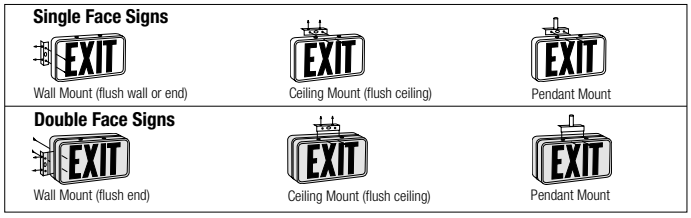
The Exit Sign shall be **Lightalarms®** Model _____.

DIMENSIONS

Dimensions are approximate and subject to change.



MOUNTING



ORDERING FORMAT

SERIES	SIGN LIFE	HOUSING COLOR	LEGEND COLOR	OPTIONS	NEW
XT= Single Face **2XT**= Double Face	**10**= 10 Years **20**= 20 Years	**W**= White **B**= Black **GY**= Grey	**R**= Red **G**= Green	**-AF**= Aluminum Frame **-AFPC**= Aluminum Frame and Polycarbonate Shield **-FR**= Fully Recessed Frame	**-N**= New Version

EXAMPLE: XT10WR-AF-N

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

PENDANT KITS

For Exit Signs and Special Wording Signage

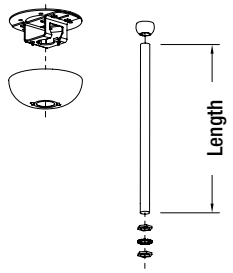
SPECIFICATIONS

Made of metal, offered in a variety of colors and lengths. Compatible with both horizontal and sloped ceilings. **Lightalarms®** pendant kits are designed to facilitate the installation of Exit Signs or Special Wording Panel Signage to regular mounting heights.

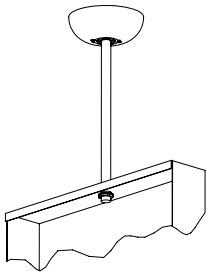
Please consult your sales representative.

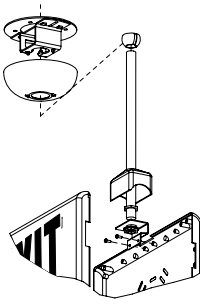
DIMENSIONS

Dimensions are approximate and subject to change.



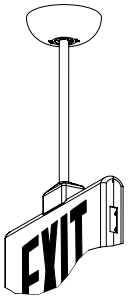
P SERIES





GENESIS SERIES

GP SERIES



ORDERING FORMAT FOR UX4, GX AND SIMPLICITY™ PREMIUM SERIES

SERIES	COLOR	LENGTH (IN INCHES)		MODEL
P[1] **GP**[2]	**W**= White **B**= Black **A**= Gray/Aluminum	**12** **24** **36** **48**	**60** **72** **84** **96**	**L**

[1] For use with Simplicity™ Premium & UX4 Series
[2] For use with Genesis™ Series

EXAMPLE: PW24L

ORDERING FORMAT FOR GRANDE™ SERIES

SERIES	LENGTH (IN INCHES)		COLOR	MODEL
GRA-P[1]	**12** **24** **36** **48**	**60** **72** **84** **96**	**WT**= White **B**= Black **A**= Gray/Aluminum	**L**

[1] For use with Grande™ Series

EXAMPLE: GPW24L

ORDERING FORMAT FOR SIMPLICITY™ ECONOMIZER SE, SES & SEN SERIES

SERIES	LENGTH (IN INCHES)			COLOR
SE-P	**12** **24** **36**	**48** **60** **72**	**84** **96**	**WT**= White **B**= Black **A**= Gray/Aluminum

EXAMPLE: SE-P12-WH

Lightalarms

SPECIAL WORDING PANELS

Customized special wording panels available for use in our Exit Signs and Combination Units

TYPE _____

CATALOG # _____

NOTES _____

FEATURES

- The same sturdy construction and electrical design used in our Exit Signs and Combination Units, is used to produce our custom-worded, illuminated signage
- Sign bodies: steel, extruded and die-cast aluminum, weatherproof, flame-retardant polycarbonate, high impact Thermoplastic, recessed housing
- Custom wording: any style of lettering, any language, any alphabet, any special characters
- Graphics: logos, standard symbols, custom art
- Color choices: sign bodies, message, faceplate panel
- Illumination: LED (light-emitting diodes)
- Contact your local Lightalarms® representative to discuss your specific requirements

Custom signage panels are available for use in the following Series:

Simplicity™ Premium Series page 14-15
Simplicity™ Economizer Series page 16-17
Genesis™ GX, GXE Series page 22-23
Galaxy™ XD, XDN Series page 24-25
Galaxy™ XDPC Series page 26-27
UX4 LED Series page 28-29
Grande™ Series page 30-31
Grande™ Combination Series page 32-33
Severe™ NEMA 4X Series page 40-41
Severe™ NEMA 4X Combination Series page 42-43
Severe™ Class I, Division 2 Series page 44-45
Severe™ Class I, Division 2 Combination Series page 46-47
X402, EXP and Combination Class I & II, Division 1&2 page 48-49

TYPE _____

CATALOG # _____

_____

NOTES _____

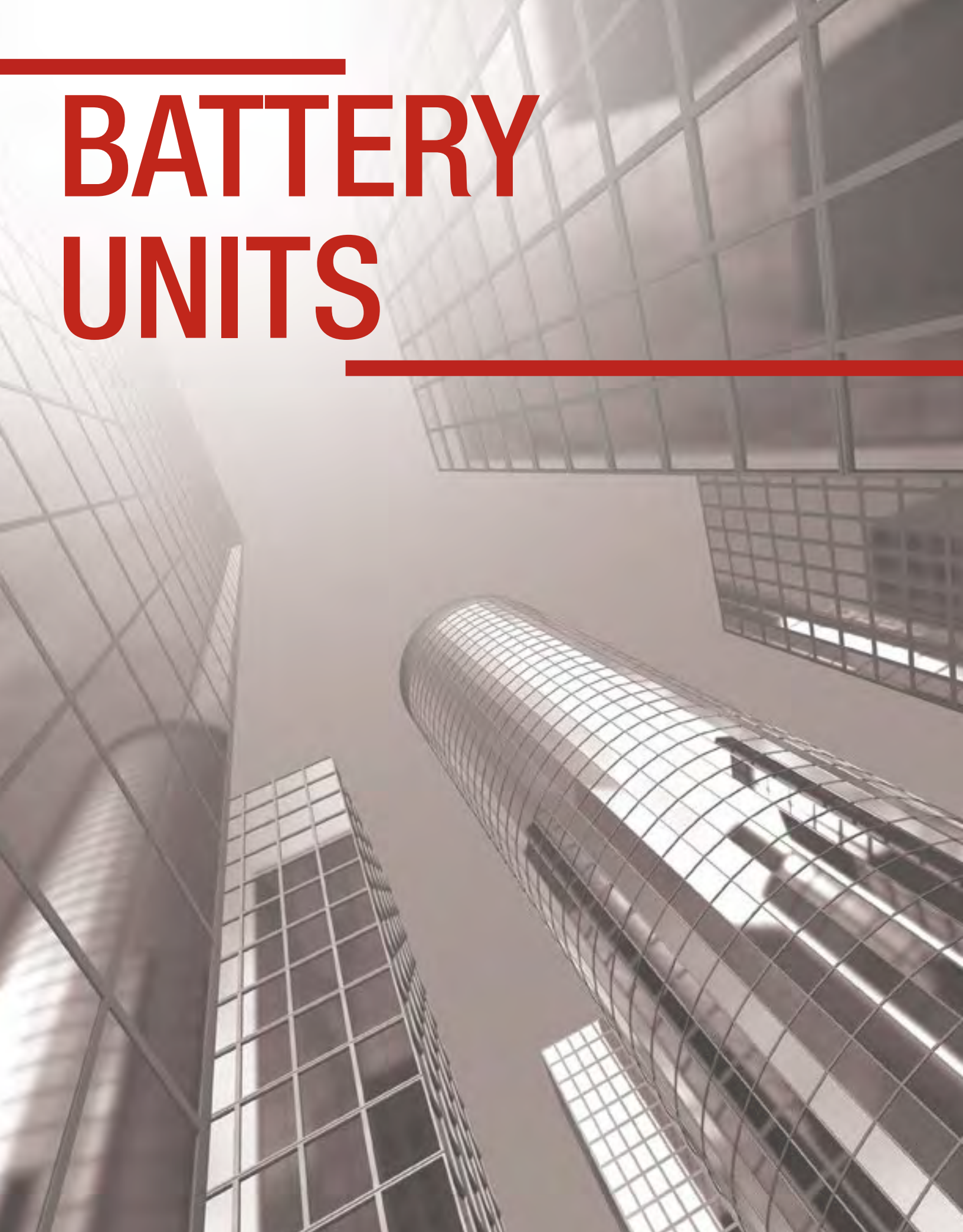
_____

SPECIAL WORDING

For Exit Signs and Special Wording Signage

Note: Shown above are only a few examples of special wording panels that we have produced. Many more panels are available to meet any customized order.

BATTERY UNITS



Battery Units

Emergency Lighting Battery Units

Emergency Battery Unit Equipment:

Illumination provided by an emergency lighting battery life safety unit is one of the key elements to ensuring safety within a public building. In the event of a failure of the normal power supply, self-contained emergency lighting battery units automatically provide the illumination required to evacuate the building in a safe manner. Lightalarms® offers a wide selection of emergency lighting battery units to meet your demanding needs and requirements, whether it's for an architectural application or a Hazardous Location. With the many emergency lighting battery units available, the key is choosing the correct one to do the job. The appropriate Emergency Lighting Battery Unit will ensure that the proper emergency illumination is being provided. An emergency lighting battery unit is life saving equipment.

To select the correct Emergency Lighting Battery Unit, consider these 4 components: Housing, Circuitry, Battery, and Lamps.

1) **Housing:** Select a housing designed for the location where the unit will be installed; for example, indoors, outdoors, or in a vandal-prone or hazardous area.
2) **Circuitry:** The circuitry maintains the battery and allows the unit to be tested. Will standard circuitry meet your requirements, or does your application need self-diagnostics or the state-of-the-art Nexus® system?
3) **Battery:** Lead-Calcium works best in controlled temperatures; and Nickel-Cadmium is for wider temperature ranges.
4) **Lamps:** Be sure to provide the sufficient illumination or lumens required to illuminate the area for safe evacuation.

Select the proper emergency lighting battery unit for the specific application. Pick the proper lamps to provide the illumination needed to illuminate the area. Select the appropriate sized battery to provide DC power to illuminate the lamps for 90 minutes. Use the correct circuitry to maintain the battery and operate the lamps. To protect it all, use the proper housing for the environment where the emergency lighting battery unit will be located.

Housing

The required housing construction of emergency lighting battery units depends on the location where the equipment is to be installed. Of all the components, the housing is the one most affected by the external environment. The housing plays many roles: it provides the fixture with a degree of protection against the environmental conditions, and meets technical, aesthetic and functional requirements.

In general, non-residential lighting is divided in three market segments: commercial, institutional and industrial. This market segmentation still applies in the case of emergency lighting. Typically, the commercial and institutional sectors are more sensitive to costs and aesthetics, whereas the industrial sector is more influenced by technical aspects (fixture durability, etc.) of the product. Commercial spaces (stores, restaurants, hotels etc.) as well as institutions (schools, hospitals) are generally air-conditioned and have a controlled environment. When the equipment operates in normal temperature and humidity conditions, it typically only requires a NEMA1 rated housing with a Lead-Calcium battery. Industrial environments are the most severe and require rugged housing construction. Industrial housing types are defined by a number of parameters specific to various technical processes within the industry: temperature range, degree of humidity, degree of protection against water and dust, and resistance to corrosive chemicals, etc. requiring a NEMA 4X or higher rating.

Circuitry

Circuitry selection is typically based on the mounting location and the amount of work that will be required to test the Emergency Battery Unit. As required by code, in accordance with NFPA101 (Life Safety Code), an emergency battery unit must be tested every month, including a full 90-minute discharge test every year. Testing of each emergency lighting unit takes many man-hours and also requires that written logs be kept on all testing to present to a fire inspector on demand. If a unit is mounted in a location not easily accessible, self-diagnostic circuitry allows an inspector to walk to each unit see the test results via LED indicators on the unit and then note them in the written log. If the building owner wants to reduce the man-hours required to meet testing requirements and eliminate the need for an inspector to keep written logs, then the Nexus® system can be installed. The Nexus® self-testing and monitoring system tests each unit automatically at the exact time and day requested, keeps the results and history of each test, diagnoses any problem, indicates which part is needed to fix the problem, and identifies the location of the problematic unit and sends an email notification to the person responsible for testing and maintaining all the emergency lighting units.

Battery

The most important thing to consider when picking a battery is the temperature of the environment where the battery will be located. The ideal temperature for battery performance is 77˚F. Cold temperatures affect the capacity, and hot temperatures affect the life of the battery. The temperature may affect the wattage size of the battery required. If you need a required amount of wattage to illuminate the lamp heads on the emergency lighting battery unit and the battery is in a cold area, that battery may not be able to deliver the required wattage needed for 90 minutes of operation. For example, at 32˚F, a Lead-Calcium battery will be at approximately 75% of capacity; but, a Nickel-Cadmium battery will be at approximately 95% of capacity. If a battery is in a high temperature area, that battery may have a reduced life expectancy. For Lead-Calcium batteries every 15-20 degree increase in ambient temperature reduces the life of the battery by half (approximately).

Sealed Maintenance-Free Lead-Calcium: (Good)
Design Feature: Recombination technology. Does not gas externally under charging.
Temperature Range: 32°F -100°F
Expected Life: 4-8 years
Warranty: 3 years full warranty, 3 years pro rata warranty

Sealed Maintenance-Free Nickel-Cadmium: (Better)
Design Feature: High abuse battery, operates well in extreme temperatures.
Temperature Range: 0°F -131°F
Expected Life: 15 years
Warranty: 5 years full warranty, 7 years pro rata warranty

Sealed Maintenance-Free Nickel-Metal Hydride: (Best)
Design feature: Similar to Nickel-Cadmium, Environmentally Friendly, Cadmium-Free and Lead-Free

Lamp

Base the lamp choice for the emergency lighting battery unit on the lumen output of the lamp and the illumination required during an emergency situation. The sole purpose of an emergency lighting battery unit is to illuminate a path of egress in an emergency situation to evacuate people safely. Picking a lamp without enough lumen output will not provide a safe situation. If emergency lighting battery unit lamps are insufficient to illuminate the path of egress, the unsafe situation could lead to bodily injury or even death. The average illumination provided to a path of egress should be at least 1 ft-candle at floor level.

Emergency Lighting Battery Units

Hazardous Location Classifications

Hazardous areas are locations where the potential for explosion or fire exists due to the presence of certain gases, liquid vapors, or combustible dusts or fiber particles suspended in the air. The National Electrical Code®, NEMA, OSHA, UL, NFPA (Life Safety Standards), as well as State and Local codes, dictate the type of emergency lighting equipment to be used in different Hazardous Locations.

In Hazardous Locations, the emergency lighting equipment must be a type which will not itself contribute to the ignition of flammable or explosive substances present in the location. Lightalarms® offers emergency lighting equipment dedicated for use in Hazardous Locations.

Class I (NEC-500-5)

Areas in which flammable gases or vapors may be present in sufficient quantities to be explosive or ignitable.

Class II (NEC-500-6)

Areas made hazardous by the presence of combustible dust.

Class III (NEC-500-7)

Areas in which there are easily ignitable fibers or flyings present, due to the type of material being handled, stored or processed-but in which such fibers or flyings are not likely to be in suspension in the air in quantities sufficient to produce ignitable mixtures.

Division I (NEC-500-5, 6 & 7)

Normal Situation: A hazard is present in the everyday normal production operation or during frequent repair and/or maintenance activity.

Division II (NEC-500-5, 6 & 7)

Abnormal Situation: Potentially hazardous material is expected to be safely contained within closed containers or closed systems, and will be present in the atmosphere only through accidental rupture, breakage, or abnormal operation.

Group A, B, C & D (NEC-500-3)

Gases and vapors in Class I locations are classified into four groups: code A, B, C, and D. These materials are grouped according to the ignition temperature of the substance, its explosion pressure and other flammable characteristics.

Groups E, F & G (NEC-500-3)

Combustible dust in Class II locations is classified according to ignition temperature and the conductivity of the hazardous substance.

Typical Class I Locations:

- Petroleum refineries, gasoline storage and dispensing areas.
- Industrial firms that use flammable liquids in dip tanks for parts cleaning or other applications.
- Petrochemical companies that manufacture chemicals from gas and oil.
- Dry cleaning plants where vapors from cleaning fluids can be present.
- Companies that have spraying areas where they coat products with paint or plastics.
- Aircraft hangars and fuel servicing areas.
- Utility gas plants, and operations involving storage and handling of liquified petroleum gas or natural gas

Typical Class II Locations:

- Grain elevators, flour and feed mills.
- Plants that manufacture, use or store magnesium or aluminum powders.
- Plants that have chemical or metallurgical processes, producers of plastics, medicines, and fireworks etc.
- Producers of starch or candies.
- Spice grinding plants, sugar plants and cocoa plants.
- Coal preparation plants and other carbon handling or processing areas.

Typical Class III Locations:

- Textile mills, cotton gins, cotton seed mills and flax processing plants.
- Clothing manufacturing plants
- Any plant that shapes, pulverizes or cuts wood and creates saw dust or flyings. For more information consult the National Electrical Code®.

NEMA Enclosures

Type 1 – Intended for use indoors primarily to prevent accidental contact of personnel with the enclosed equipment.

Type 2 – Intended for use indoors to protect the enclosed equipment against falling non-corrosive liquids and falling dirt.

Type 3 – Intended for use outdoors to protect the enclosed equipment against rain, windblown dust, sleet and external ice formation.

Type 3R – Intended for use outdoors to protect the enclosed equipment against falling rain, sleet and external ice formation.

Type 4 – Intended for use indoors and outdoors to protect the enclosed equipment against windblown dust, rain, splashing water and hose-directed water.

Type 4R – Intended for use indoors and outdoors to protect the enclosed equipment against windblown dust, rain, splashing water and hose-directed water; that provides an additional level of protection against corrosion.

Type 5 – Intended for indoor use primarily to protect against dust and falling dirt.

Type 6 – Intended for indoor or outdoor use primarily to provide a degree of protection against the entry of water during occasional temporary submersion at a limited depth.

Type 6P – Intended for indoor or outdoor use primarily to provide a degree of protection against the entry of water during prolonged submersion at a limited depth.

Type 7 – Intended for use indoors in locations classified as Class I, Groups A, B, C, or D as defined in the National Electrical Code®.

Type 8 – Intended for indoor or outdoor use in locations classified as Class I, Groups A, B, C, & D as defined in the National Electrical Code®.

Type 9 – Intended for indoor locations classified as Class II, Groups E, F & G, as defined in the National Electrical Code®.

Type 10 – Enclosures are constructed to meet the applicable requirements of the Mine Safety and Health Administration.

Type 11 – Intended for indoor use primarily to provide, by oil immersion, a degree of protection to enclosed equipment against the corrosive effects of liquids and gases.

Type 12 – Intended for indoor use primarily to provide a degree of protection against dust, falling dirt, and dripping noncorrosive liquids.

Type 12K – Enclosure with knockouts intended for indoor use primarily to provide a degree of protection against dust, falling dirt, and dripping non-corrosive liquids other than at knockouts.

Type 13 – Intended for indoor use primarily to provide a degree of protection against dust, spraying of water, oil, and noncorrosive coolant.

Quick Reference Chart

	PHANTOM™ SERIES (PAGE 60-61)	MINI-PHANTOM™ SERIES (PAGE 62-63)	T-BAR TBR SERIES (PAGE 64-65)	RD SERIES (PAGE 66-67)	LS605P1 SERIES (PAGE 68)	LCA-2SQ SERIES (PAGE 69)	LCA-LEDR (PAGE 70-71)	LCA-2MRS & LED SERIES (PAGE 72)	LCA1250 SERIES (PAGE 73)	GRANDE™ SERIES (PAGE 74-75)	CAMRAY® SERIES (PAGE 76-77)	MC SERIES (PAGE 78-79)	PG & P12G SERIES (PAGE 80-81) PQ & P12Q SERIES (PAGE 84-85)	PN & P12N SERIES (PAGE 82-83)	S12E, S24E SERIES (PAGE 86-87)	FG & FN SERIES (PAGE 88-89)	SEVERE™ V SERIES (PAGE 90-91)	SEVERE VH SERIES (PAGE 92-93)	EXP6N & EXP12N SERIES (PAGE 94-95)
APPLICATION																			
Architectural	X	X	X	X	X						X								
Commercial						X	X	X	X	X		X	X	X					
Industrial															X	X	X	X	X
Recessed Mount	X	X	X	X	X														
Surface Mount						X	X	X	X	X	X	X	X	X	X	X	X	X	X
Remote Capacity			X	X		X	X			X		X	X	X	X	X	X		X
Damp Listed	X	X				X	X	X	X	X	X					X	X		
NEMA 4X																	X		
Hazardous Locations																		X	X
HOUSING																			
Thermoplastic					X	X	X	X	X	X						X			
Steel	X	X	X	X	X							X	X	X	X				
Other Materials											X						X	X	X
BATTERY																			
Lead-Calcium	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	
Nickel-Cadmium	X	X	X	X	X					X		X		X		X	X		X
Nickel-Metal Hydride	X	X					X				X								
COLOR																			
Mist-White	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X		
Black			X					X	X	X	X	X	X	X			X		
Gray											X				X	X	X	X	X
Other Colors											X								
LAMP OPTIONS																			
MR16-LED	X	X	X	X			X	X	X	X		X	X	X	X		X	X	
MR16-Halogen	X	X	X	X				X	X	X		X	X	X	X		X	X	
Bi-Pin Halogen			X	X	X							X	X	X	X	X			X
Sealed Beam Halogen			X	X								X	X	X	X	X			
Sealed Beam Incand.			X	X								X	X	X	X	X			
Wedge Base Incand.			X	X	X	X						X	X	X	X	X			X
AVAILABLE OPTIONS																			
Improved-Diagnostic	X	X	X	X			X			X	X	X	X	X	X	X	X	X	
Ammeter			X	X									X	X	X	X			
Voltmeter			X	X									X	X	X	X			
Photocell Switch											X		X	X	X	X			
Time Delay (5, 10, 15 min)	X	X	X	X						X	X	X	X	X	X	X		X	
Heater/Cold Weather											X					X	X		
Vandal Screws												X	X	X			X	X	
Lamp disconnect													X	X	X				
Cord & Plug												X	X	X	X	X			
ACCESSORIES																			
Wire Guard				X		X		X	X	X		X	X	X	X	X		X	
Vandal Shield						X		X	X										
Mounting Shelf/Platform												X	X	X	X				
Mounting Bracket													X	X	X		X		
ORIGIN																			
North America	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X

NOTE: This is a quick reference guide only, refer to individual product pages for complete details regarding applicable models

PHANTOM™ SERIES

The Unseen Solution
12V up to 100W Capacities – Generator Capable
Lead-Calcium or Nickel-Cadmium battery

FEATURES

Housing

- 20 gauge galvanized steel back-box
- Head assembly designed for easy access to internal components
- Head assembly door and trim plate powder coated in a white finish
- Finish can be customized on site with paint or wallpaper
- Provision for 2 lighting heads
- Choice of MR16 Halogen or MR16 LED Lamp types and wattages
- Complete 360° head assembly door rotation: 180° to open, 180° to close
- Slip gear mechanism protects unit and objects against forcibly stop

Mounting

- Recessed mount into ceiling or wall with cavities
- Special bar hangers included for installation in dry wall or T-bar ceilings
- Includes the electrical junction box
- Installed on the wall stud or ceiling beam with simple, U-shape bracket.
- Head assembly includes keyhole slot and quick-connect plugs for easy installation

Electronics

- Automatic, temperature-compensated, pulse-type charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection is provided
- Battery lock-out prevents battery discharge during installation
- Fused output circuit

Improved Diagnostics option

- Units equipped with Improved Diagnostics shall self-test, by simulating a power failure, in accordance with NFPA101, Life Safety Code one minute monthly, 30 minutes every six months and 90 minutes annually. For complete information refer to page 7.

Controls

- Recessed illuminated push button serves as test switch and status indicator

Choice of Sealed Maintenance-Free Battery

- 12V Lead-Calcium battery
- 12V Nickel-Cadmium battery

Approval

- CSA-US

Warranty (subject to proper installation and maintenance)

- Unit has a five year full warranty (excluding lamps and fuses)[1]
- Lead-Calcium battery has a three year full, plus three year pro-rata warranty
- Nickel-Cadmium battery has a five year full, plus five year pro-rata warranty

[1] For LED lamps warranty, refer to page 168 paragraph 3.2

ACCESSORIES (Order as a separate item)

Remote Test Switch (Metal Faceplate)	**PSW**
Remote Test Switch (Plastic Faceplate)	**PSW-1**

SPECIFICATIONS

Supply and install **Lightalarms® Phantom™** Series.

The emergency lighting unit shall be a self-contained fixture including a sealed maintenance-free Lead-Calcium or Nickel-Cadmium battery of 12V, wattage as specified in the unit rating chart. The unit shall supply the rated wattage load for a minimum of 90 minutes to 87-1/2% of rated battery voltage. The unit shall be rated 120/277VAC, 60Hz and be CSA-US approved.

The unit charger shall utilize an micro-controller which samples the battery in relation to temperature, state of charge and input voltage fluctuations. The charger shall be current limited, temperature compensated, short-circuit protected and reverse polarity protected. The unit shall be furnished with an electronic lockout circuit which will connect the battery when the AC circuit is activated, and an electronic brownout circuit which will activate the unit when utility power dips below 80-85% of nominal voltage. A low voltage battery protection circuit shall be provided and will disconnect the load and circuitry from the battery when it reaches 87-1/2% of its nominal voltage. The unit shall be capable of full recharge in compliance with UL 924 specifications. The unit shall be furnished with sealed dust-tight relay, recessed illuminated combination test switch and indicator light.

The unit shall be designed to be concealed in walls or ceilings with a cavity, including T-bar suspended ceilings. Bar hanger brackets shall be provided with the unit. The equipment shall consist of a metal back box containing the batteries, the lamp assembly and a charging circuitry. The back box shall be constructed of heavy-duty galvanized steel. The unit utilizes a modular design and comes with quick-connect plugs for easy installation into the back box. The unit equipment shall be completely concealed in the wall or ceiling during normal power conditions.

Upon a power failure the unit will expose the emergency heads by rotating its door by 180° and then will power the lamps. At the restoration of the AC power or the end of the battery discharge, the lamps will turn off and the unit will retract the heads in the wall or ceiling by rotating the door by 180°. The unit shall not require the presence of AC power in order to rotate the door closed, returning the lamps inside the housing. Under normal conditions, the only visible parts of the unit will be the flat door and trim plate, coated with a high-quality off-white finish that can be customized on site with paint or other suitable wall covering. The light source shall be MR16 halogen or MR16 LED lamps of specified voltage and wattage.

Units specified with Improved Diagnostics shall continuously monitor every critical function of the unit. If a malfunction occurs, if audible, a high-pitch audible alarm will sound; as well and, the recessed illuminated combination test switch and indicator light located on the front of the unit will change color from solid green to a flashing red light, indicating a fault. If non-audible, only the recessed illuminated combination test switch and indicator light located on the front of the unit will change color from solid green to a flashing red light, indicating a fault. A detailed diagnostic legend is available on the door back side and provides fault identification as battery, charger circuitry or lamps failure. The microcontroller shall automatically self-test by simulating a power failure, in accordance with NFPA101, Life Safety Code for one minute monthly, 30 minutes every six months and 90 minutes annually.

Every **Phantom™** Series unit shall be fully warranted for five years, subject to proper installation and maintenance.
Unit shall be **Lightalarms®** catalog number_____.

TYPE _____

CATALOG # _____

_____

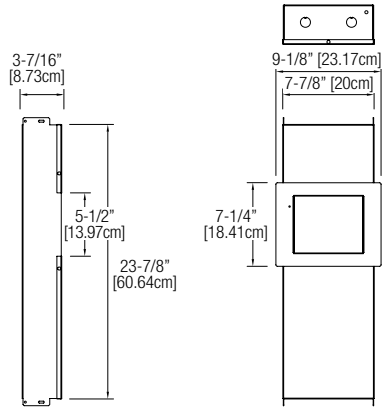
NOTES _____

_____

Visually invisible and architecturally designed for unobtrusive use in wallswith cavity (dry wall with 4-inch studs) or un-insulated ceilings with horizontal beams or T-bar structures

DIMENSIONS

Dimensions are approximate and subject to change.



Charger & Battery Compartment:
For use in walls or ceilings with a cavity, not for use in block walls or solid ceilings.

POWER CONSUMPTION / UNIT RATING CHART

SERIES	DC SPECS						AC SPECS				
	BATTERY TYPE	DC VOLTAGE	87.5% BATTERY CAPACITY (IN WATTS)[1]				UNITS DUAL VOLTAGE[2]	CURRENT		POWER[3]	
			90 MIN.	2 HRS.	3 HRS.	4 HRS.		MAXIMUM	STAND BY	MAXIMUM	STAND BY
PHM40	Lead-Calcium	12V	40	30	24	12					
PHM70		12V	70	50	40	24					
PHM100		12V	100	70	50	40	120VAC	0.25A	0.10A	30W	11W
PHN40	Nickel-Cadmium	12V	40	30	24	12	277VAC	0.12A	0.05A	30W	11W
PHN70		12V	70	50	40	24					
PHN100		12V	100	70	50	40					

[1] National Electrical Code Specification
[2] All units 120/277 dual voltage, information based on wiring to specific voltage type
[3] Stand-by power consumption is 50% lower for Lead-Calcium Batteries

ORDERING FORMAT

BATTERY UNIT

SERIES	BATTERY TYPE	UNIT CAPACITY	# OF HEADS	LAMP TYPE	OPTIONS
PH	**M**= Lead-Calcium **N**= Nickel-Cadmium	**40**= 12V-40W **70**= 12V-70W **100**= 12V-100W	**-2**= Two lamps	**MR16 Halogen** **(12)**= 12V-12W **(20)**= 12V-20W **(35)**= 12V-35W **(50)**= 12V-50W **MR16 Halogen High Output** **(20H)**= 12V-20W **(35H)**= 12V-35W **(50H)**= 12V-50W **MR16 LED** **(LD7)**= 12V-4W **(LD9)**= 12V-5W **(LD10)**= 12V-6W For complete 12V MR16 lamp information refer to page 100 Remote Fixture, Phantom™ Series, Lamp Selection Chart	**Blank**= No Options **-ID**= Improved Diagnostics (audible)[1] **-IDNA**= Improved Diagnostics (non audible)[1] **-T1**= Time Delay (5 minute) **-T2**= Time Delay (10 minute) **-T3**= Time Delay (15 minute) **-DL**= Damp Location[2] **-X**= Back box shipped separate [1] -ID & -IDNA include a time delay feature that can be enabled/ disabled in the field or set by the factory by including -ID-TD* or -IDNA-TD* [2] -DL option not available with PHN100 unit

EXAMPLE: PHM100-2(20)DL

GENERATOR UNIT

SERIES	INPUT VOLTAGE	# OF HEADS	LAMP TYPE
PHG	**1**= 120VAC, 60Hz **2**= 277VAC, 60Hz	**-2**= Two lamps	**MR16 Halogen** **(12)**= 12V-12W **(20)**= 12V-20W **(35)**= 12V-35W **(50)**= 12V-50W **MR16 Halogen High Output** **(20H)**= 12V-20W **(35H)**= 12V-35W **(50H)**= 12V-50W **MR16 LED** **(LD7)**= 12V-4W **(LD9)**= 12V-5W **(LD9)**= 12V-5W **(LD10)**= 12V-6W For complete 12V MR16 lamp information refer to page 100 Remote Fixture, Phantom™ Series, Lamp Selection Chart

EXAMPLE: PHG1-2(20)

MINI-PHANTOM™ SERIES

The Full Retrofit Unseen Solution
12V-40W Capacities – Generator Capable
Lead-Calcium, Nickel-Cadmium or Nickel-Metal Hydride battery

FEATURES

Housing

- Two 20 gauge steel modules joined by a flexible bracket and electric conduit
- Head assembly door and trim plate powder coated in a white finish
- Finish can be customized on site with paint or wallpaper
- Provision for 2 lighting heads
- Choice of MR16 Halogen or MR16 LED Lamp types and wattages
- Complete 360° head assembly door rotation: 180° to open, 180° to close
- Slip gear mechanism protects unit and objects against forcibly stop

Mounting

- Recessed wall with cavity mount (retrofit into finished wall)
- Designed to install into an 8-1/4" by 5-3/4" inch opening
- Includes electrical junction box
- Key-hole slot for ease of installation

Electronics

- Automatic, temperature-compensated, pulse-type charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection is provided
- Battery lock-out prevents battery discharge during installation
- Fused output circuit

Improved Diagnostics option

- Units equipped with Improved Diagnostics shall self-test, by simulating a power failure, in accordance with NFPA101, Life Safety Code minimum one minute monthly, 30 minutes every six months and 90 minutes annually. For complete information refer to page 8.

Controls

- Recessed illuminated push button serves as test switch and status indicator

Choice of Sealed Maintenance-Free Battery

- 12V Lead-Calcium battery
- 12V Nickel-Cadmium battery
- 12V Nickel Metal Hydride battery

Approval CSA-US

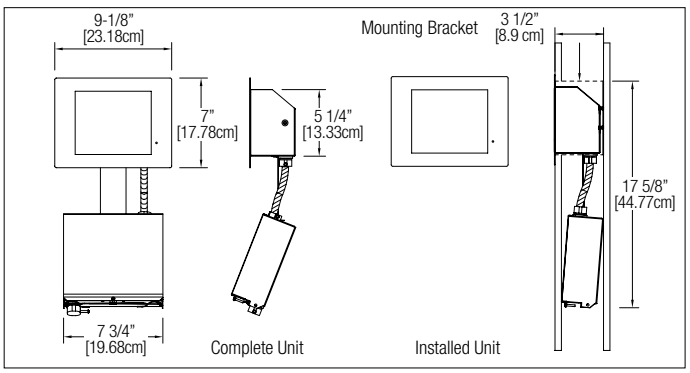
Warranty (subject to proper installation and maintenance)

- Unit has a five year full warranty (excluding lamps and fuses)[1]
- Lead-Calcium battery has a three year full, plus three year pro-rata warranty
- Nickel-Cadmium battery has a five year full, plus five year pro-rata warranty
- Nickel-Metal Hydride battery has a five year full, plus five year pro-rata warranty

[1] For LED lamps warranty, refer to page 168 paragraph 3.2

DIMENSIONS

Dimensions are approximate and subject to change.



SPECIFICATIONS

Supply and install **Lightalarms® Mini-Phantom™** Series.

The emergency lighting unit shall be a self-contained fixture including a sealed maintenance-free Lead-Calcium, Nickel-Cadmium or Nickel-Metal Hydride battery of 12V-40W. The unit shall supply the rated wattage load for a minimum of 90 minutes to 87-1/2% of rated battery voltage. The unit shall be rated 120/277VAC, 60Hz and be CSA-US listed.

The unit charger shall utilize an integrated circuit which samples the battery in relation to its temperature, state of charge and input voltage fluctuations. The charger shall be current limited, temperature compensated, short-circuit protected and reverse polarity protected. The unit shall be furnished with an electronic lockout circuit which will connect the battery when the AC circuit is activated, and an electronic brownout circuit which will activate the unit when utility power dips below 80-85% of nominal voltage. A low voltage battery protection circuit shall be provided and will disconnect the load and circuitry from the battery when it reaches 87-1⁄2% of its nominal voltage. The unit shall be capable of full recharge in compliance with UL924 specifications. The unit shall be furnished with sealed dust-tight relay and recessed illuminated combination test switch and indicator light.

The unit shall be designed to be concealed in walls with a cavity. The unit shall consist of a metal housing containing two modules joined by a flexible bracket and electric conduit. One module contains the battery, charger circuitry and electrical connection box; the other module contains the head assembly.

Upon a power failure, the unit will expose the emergency lighting heads by rotating its door by 180° and then will power the lamps. At the restoration of the AC power or the end of the battery discharge, the lamps will turn off and the unit will retract the heads by rotating the door by 180°. The unit shall not require the presence of AC power in order to rotate the door closed, returning the lamps inside the housing. Under normal conditions, the only visible parts of the unit will be the flat door and trim plate, coated with a high-quality off-white finish that can be customized on site with paint or other suitable wall covering. The light source shall be 12V MR16 halogen or MR16 LED lamps of specified voltage and wattage.

Units specified with Improved Diagnostics shall continuously monitor every critical function of the unit. If a malfunction occurs, if audible, a high-pitch audible alarm will sound; and; the recessed illuminated combination test switch and indicator light located on the front of the unit will change color from solid green to a flashing red light, indicating a fault. If non-audible, only the recessed illuminated combination test switch and indicator light located on the front of the unit will change color from solid green to a flashing red light, indicating a fault. A detailed diagnostic legend is available on the door, back side and provides fault identification as battery, charger circuitry or lamps failure. The microcontroller shall automatically self-test, by simulating a power failure, in accordance with NFPA101, Life Safety Code for minimum one minute monthly, 30 minutes every six months and 90 minutes annually.

Every **Mini-Phantom™** Series unit shall be fully warranted for five years, subject to proper installation and maintenance.

Unit shall be **Lightalarms®** catalog number_____.

ACCESSORIES (Order as a separate item)

Remote Test Switch (Metal Faceplate)	**PSW**
Remote Test Switch (Plastic Faceplate)	**PSW-1**

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

Designed for retrofitting in finished walls with a cavity (dry-wall with 4-inch studs).

POWER CONSUMPTION / UNIT RATING CHART

SERIES	DC SPECS						AC SPECS				
	BATTERY TYPE	DC VOLTAGE	87.5% BATTERY CAPACITY (IN WATTS)[1]				UNITS DUAL VOLTAGE[2]	CURRENT		POWER[3]	
			90 MIN.	2 HRS.	3 HRS.	4 HRS.		MAXIMUM	STAND BY	MAXIMUM	STAND BY
MPHM40	Lead-Calcium	12V	40	30	24	12	120VAC 277VAC	0.25A 0.12A	0.10A 0.05A	30W 30W	11W 11W
MPHN40	Nickel-Cadmium	12V	40	30	24	12					
MPHH40	Nickel-Metal-Hydride	12V	40	30	24	12					

[1] National Electrical Code Specification
[2] All units 120/277 dual voltage, information based on wiring to specific voltage type
[3] Stand-by power consumption is 50% lower for Lead-Calcium Batteries

ORDERING FORMAT

BATTERY UNIT

SERIES	BATTERY TYPE	UNIT CAPACITY	# OF HEADS	LAMP TYPE	OPTIONS
MPH	**M**= Lead-Calcium **N**= Nickel-Cadmium **H**= Nickel-Metal Hydride	**40**= 12V-40W	**-2**= Two Lamps	**MR16 Halogen** **(12)**= 12V-12W **(20)**= 12V-20W **MR16 Halogen High Output** **(20H)**= 12V-20W **MR16 LED** **(LD7)**= 12V-4W **(LD9)**= 12V-5W **(LD10)**= 12V-6W For complete 12V, up to 20W MR16 lamp information refer to page 100 Remote Fixture, Phantom™ Series, Lamp Selection Chart	**Blank**= No Options **-ID**= Improved Diagnostics (audible)[1] **-IDNA**= Improved Diagnostics (non audible)[1] **-T1**= Time Delay (5 minute) **-T2**= Time Delay (10 minute) **-T3**= Time Delay (15 minute) **-DL**= Damp Location **-TB**= T-Bar mounting kit [1] -ID &-INDA include a time delay feature that can be enabled/ disabled in the field or set by the factory by including -ID-TD* or -IDNA-TD*

EXAMPLE: MPHM40-2(20)DL

GENERATOR UNIT

SERIES	INPUT VOLTAGE	# OF HEADS	LAMP TYPE	OPTIONS
MPHG	**1**= 120VAC, 60Hz **2**= 277VAC, 60Hz	**-2**= Two Lamps	**MR16 Halogen** **(12)**= 12V-12W **(20)**= 12V-20W **(35)**= 12V-35W **(50)**= 12V-50W **MR16 LED** **(LD7)**= 12V-4W **(LD9)**= 12V-5W **(LD10)**= 12V-6W **MR16 Halogen High Output** **(20H)**= 12V-20W **(35H)**= 12V-35W **(50H)**= 12V-50W For complete 12V MR16 lamp information refer to page 100 Remote Fixture, Phantom™ Series, Lamp Selection Chart	**-DL**= Damp Location

EXAMPLE: MPHG1-2(20)-DL


Shown with ELF645 heads

TBR SERIES

Recessed Steel Housing
6V up to 81W, 12V up to 110W, 24V up to 110W Capacities
Lead-Calcium or Nickel-Cadmium battery

FEATURES

Housing
- 20 gauge steel housing designed for easy access to internal components
- Corrosion-resistant baked enamel mist white finish standard, black optional
- Provision for mounting up to 3 lighting heads
- Various choices of lighting head styles and lamp types

Mounting
- Recessed T-Bar ceiling mount; lay-in installation for grid ceiling only

Electronics
- Automatic, temperature-compensated, pulse-type charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection
- Battery lock-out prevents battery discharge during installation
- Fused output circuit

Improved Diagnostics option
- Units equipped with Improved Diagnostics shall self-test, by simulating a power failure, in accordance with NFPA101, Life Safety Code one minute monthly, 30 minutes every six months and 90 minutes annually. For complete information refer to page 8.

NEXUS® option
- Units equipped with NEXUS® self-testing monitoring system circuitry shall self-test, in accordance with NFPA101 Life Safety Code for a minimum of 30 seconds monthly, 30 minutes every six months and 90 minutes annually as well as keep a history of all testing logs, plus feature real-time diagnoses, and provide the exact fixture location while notifying service personnel of the status of the fixture via email. For complete information refer to page 4-5.

Controls
- Red charger monitor LED indicates charging of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allows for quick operational check of entire system

Choice of Sealed Maintenance-Free Battery
- 6V, 12 or 24V Lead-Calcium battery
- 6V, 12 or 24V Nickel-Cadmium battery

Approval
- UL 924 Listed

Warranty (subject to proper installation and maintenance)
- Unit has a three year full warranty (excluding lamps and fuses)[1]
- Lead-Calcium battery has a three year full, plus three year pro-rata warranty
- Nickel-Cadmium battery has a five year full, plus five year pro-rata warranty

[1] For LED lamps warranty, refer to page 168 paragraph 3.2

HEAD STYLE WITH LAMP TYPE CHOICES

LAMP TYPE	HEAD STYLE			
	ELF645 (pg.108)	**ELF2** (pg.105)	**ELF3** (pg.106)	**DR1130** (pg.104)
Wedge Based Incandescent	X	X		
Bi-Pin Halogen	X	X		
PAR36 Sealed Beam Incandescent	X			
PAR36 Sealed Beam Halogen	X			
MR16 Halogen			X	X
MR16 LED			X	X

ACCESSORIES (Order as a separate item)

Remote Test Switch (Metal Faceplate)	**PSW**
Remote Test Switch (Plastic Faceplate)	**PSW1**

SPECIFICATIONS

Supply and install **Lightalarms® TBR** Series.

The emergency lighting unit shall be a self-contained fixture including a sealed maintenance-free Lead-Calcium or Nickel-Cadmium battery of 6V, 12V or 24V of wattage as specified on the unit rating chart. The unit shall supply the rated wattage load for a minimum of 90 minutes to 87-1/2% of rated battery voltage. The unit shall be rated 120/277VAC, 60Hz and be UL 924 listed.

The unit charger shall utilize an integrated circuit which samples the battery in relation to temperature, state of charge and input voltage fluctuations. The charger shall be current limited, temperature compensated, short-circuit protected and reverse polarity protected. The unit shall be furnished with an electronic lockout circuit which will connect the battery when the AC circuit is activated, and an electronic brownout circuit which will activate the unit when utility power dips below 80-85% of nominal voltage. A low voltage battery protection circuit shall be provided and will disconnect the load and circuitry from the battery when it reaches 87-1/2% of its nominal voltage. The unit shall be capable of full recharge in compliance with UL924 specifications. The unit shall be furnished with sealed dust-tight relay, a test switch and dual diagnostic LED indicator lights (hi-charge and AC pilot). The housing shall be 20 gauge steel, designed for provision for mounting up to 3 heads, T-Bar ceiling grid installation and for easy access to internal components.

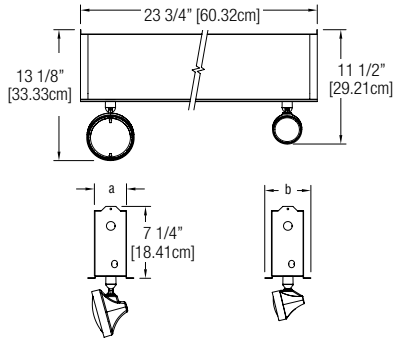
Units specified with Improved Diagnostics (audible or non-audible) will continuously monitor every critical function of the unit including the attached remote lighting heads and/or attached AC/DC Exit Signs. Operational status of the battery, charger and lamps are indicated by individual LED status indicators. Once a malfunction is detected, if audible, a high-pitch audible alarm will sound, and the appropriate LED status indicator will illuminate alerting of the unit malfunction. If non-audible, only the LED status indicator will illuminate alerting of the unit malfunction. The microcontroller shall automatically self-test, by simulating a power failure, in accordance with NFPA101 Life Safety Code for one minute monthly, 30 minutes every six months and 90 minutes annually

Every **TBR** Series unit shall be fully warranted for three years, subject to proper installation and maintenance.

Unit shall be **Lightalarms®** catalog number_____.

DIMENSIONS

Dimensions are approximate and subject to change.



Shown with: ELF645 **ELF2 / ELF3**

Units	Cabinet	a	b
54W and under	S	3 1/4"	4 5/8"
81W and higher	L	5 5/8"	7 1/8"

TYPE _____

CATALOG # _____

_____

NOTES _____

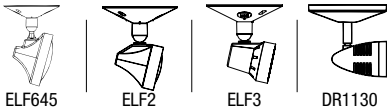
_____

nexus

id improved diagnostics

Designed for unobtrusive use in T-Bar ceilings. The off-white, fully recessed housing harmonizes with ceiling designs

Shown with ELF3 heads and LED lamps



Available Head Style Choices:	ELF645	ELF2	ELF3	DR1130
Head Style Suffix:	/Blank	/ELF2	/E3	/D1

POWER CONSUMPTION / UNIT RATING CHART

SERIES	DC SPECS						AC SPECS	
	BATTERY TYPE	DC VOLTAGE	87.5% BATTERY CAPACITY (IN WATTS)[1]				UNITS DUAL VOLTAGE[2]	CURRENT MAXIMUM
			90 MIN.	2 HRS.	3 HRS.	4 HRS.		
TBRC0	Lead-Calcium	6V	18	12	0	0		
TBRC1		6V	27	18	14	10		
TBRC5		6V	36	25	20	14		
TBRC2		6V	54	37	28	21		
TBRC3		6V	81	54	42	30		
T12BRC0		12V	54	37	28	21	120VAC	0.3A
T12BRC1		12V	110	72	56	40	277VAC	0.15A
T24BRC1		24V	110	72	56	40		
TRBC1	Nickel-Cadmium (with option-N)	6V	18	12	0	0		
TRBC2		6V	25	18	12	9		
T12BRC1		12V	36	21	15	12		
T12BRC2		12V	50	36	25	18		

[1] National Electrical Code Specification

[2] All units 120/277 dual voltage, information based on wiring to specific voltage type

ORDERING FORMAT

# OF HEADS	SERIES/BATTERY/CAPACITY	HEAD STYLE	LAMP TYPE	OPTIONS
Blank= No heads **1**= 1 head **2**= 2 heads **3**= 3 heads	**Lead-Calcium Battery** **TBRC0**= 6V-18W **TBRC1**= 6V-27W **TBRC5**= 6V-36W **TBRC2**= 6V-54W **TBRC3**= 6V-81W **T12BRC0**= 12V-36W **T12BRC2**= 12V-54W **T12BRC1**= 12V-110W **T24BRC1**= 24V-110W **For Nickel-Cadmium Battery (MUST INCLUDE OPTION -N)** **TRBC1**= 6V-18W **TRBC2**= 6V-25W **T12BRC1**= 12V-36W **T12BRC2**= 12V-50W	**/Blank**= ELF645 (PAR36, Plastic) **/ELF2**= ELF2 (PAR18, Plastic) LED **/E3**= ELF3 (MR16, Plastic) **/D1**= DR1130 (MR16, Metal)	**Add lamp suffix to indicate lamp type, voltage and wattage.** For available Lamp Types within a specified Head Style refer to that Head Style page for proper lamp suffix with **Blank (ELF645)**, page 108 with **ELF2**, page 105 with **ELF3**, page 106 with **DR1130**, page 104 **Lamp Type MUST:** 1) Match battery voltage 2) Total of all lamps wattage must not exceed battery watt capacity for 90 min. 3) Sealed Beams not compatible with Nickel-Cadmium battery	**Blank**= Mist White housing, No Options **-B**= Black Housing **-ID**= Improved Diagnostics (audible)[1] **-IDNA**= Improved Diagnostics (non audible)[1] **-NEX**= Nexus® Wired Compatible[2] **-NEXRF**= Nexus® Wireless Compatible[2] **-TD5**= Time Delay (5 minutes) **-TD10**= Time Delay (10 minutes) **-TD15**= Time Delay (15 minutes) **-A**= Ammeter[3] **-V**= Voltmeter[3] **-N**= Nickel-Cadmium battery [1] -ID & -IDNA include a time delay feature that can be enabled/disabled in the field or set by the factory by including -ID-TD* or -IDNA-TD* [2] -NEX & -NEXRF is CSA-US approved only. Consult your sales representative [3] -A & -V not available with -ID, -IDNA, -NEX, -NEXRF option

EXAMPLE: 2TBRC1/L9-V


shown with ELF3 heads

RD SERIES

Recessed Steel Housing
6V up to 36W, 12V up to 36W Capacities
Lead-Calcium or Nickel-Cadmium battery

FEATURES

Housing
- 20 gauge steel housing designed for easy access to internal components
- Corrosion-resistant baked enamel mist white finish standard, black optional
- Provision for mounting up to 2 lighting heads
- Various choices of lighting head styles and lamp types

Mounting
- Ceiling or Wall Mount; Mounting Brackets included for lay-in installation in T-Bar grid ceiling as well as dry wall

Electronics
- Automatic, temperature-compensated, pulse-type charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection is provided
- Battery lock-out prevents battery discharge during installation
- Fused output circuit

Improved Diagnostics option
- Units equipped with Improved Diagnostics shall self-test, by simulating a power failure, in accordance with NFPA101, Life Safety Code one minute monthly, 30 minutes every six months and 90 minutes annually. For complete information refer to page 8.

Controls
- Red charger monitor LED indicates charging of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allows for quick operational check of entire system

Choice of Sealed Maintenance-Free Battery
- 6V or 12V Lead-Calcium battery
- 6V or 12V Nickel-Cadmium battery

Approvals
- UL 924 Standard

Warranty (subject to proper installation and maintenance)
- Unit has a three year full warranty (excluding lamps and fuses)[1]
- Lead-Calcium battery has a three year full, plus three year pro-rata warranty
- Nickel-Cadmium battery has a five year full, plus five year pro-rata warranty

[1] For LED lamps warranty, refer to page 168 paragraph 3.2

HEAD STYLE WITH LAMP TYPE CHOICES

LAMP TYPE	HEAD STYLE			
	ELF645 (pg.108)	**ELF2** (pg.105)	**ELF3** (pg.106)	**DR1130** (pg.104)
Wedge Based Incandescent	X	X		
Bi-Pin Halogen	X	X		
PAR36 Sealed Beam Incandescent	X			
PAR36 Sealed Beam Halogen	X			
MR16 Halogen			X	X
MR16 LED			X	X

ACCESSORIES (Order as a separate item)

Wire Guard (DR1130, ELF2, ELF3 or ELF645 heads)	**WG6-L**
Remote Test Switch (Metal Faceplate)	**PSW**
Remote Test Switch (Plastic Faceplate)	**PSW1**

SPECIFICATIONS

Supply and install **Lightalarms® RD** Series.

The emergency lighting unit shall be a self-contained fixture including a sealed maintenance-free Lead-Calcium or Nickel-Cadmium battery of 6V or 12V of wattage as specified on the unit rating chart. The unit shall supply the rated wattage load for a minimum of 90 minutes to 87-1/2% of rated battery voltage. The unit shall be rated 120/277VAC, 60Hz and be UL924 listed.

The unit charger shall utilize an integrated circuit which samples the battery in relation to temperature, state of charge and input voltage fluctuations. The charger shall be current limited, temperature compensated, short-circuit protected and reverse polarity protected. The unit shall be furnished with an electronic lockout circuit which will connect the battery when the AC circuit is activated, and an electronic brownout circuit which will activate the unit when utility power dips below 80-85% of nominal voltage. A low voltage battery protection circuit shall be provided and will disconnect the load and circuitry from the battery when it reaches 87-1⁄2% of its nominal voltage. The unit shall be capable of full recharge in compliance with UL924 specifications. The unit shall be furnished with sealed dust-tight relay, a test switch and dual diagnostic LED indicator lights (hi-charge and AC pilot). The cabinet shall be 20 gauge steel designed with mounting brackets included for lay-in installation in T-Bar grid ceiling as well as sheet rock. Unit has provision for mounting up to 2 heads on cabinet.

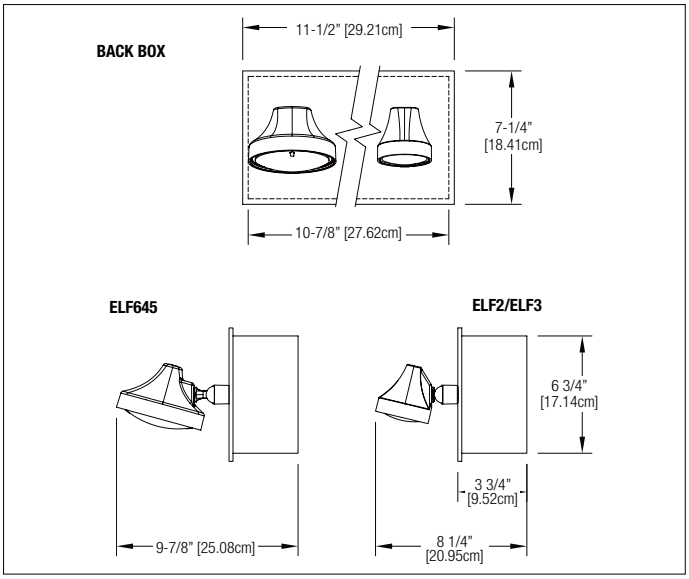
Units specified with Improved Diagnostics (audible or non-audible) will continuously monitor every critical function of the unit, attached remote lighting heads and/or attached AC/DC Exit Signs. Operational status of the battery, charger and lamps are indicated by individual LED status indicators. Once a malfunction is detected, if audible, a high-pitch audible alarm will sound, and the appropriate LED status indicator will illuminate alerting of the unit malfunction. If non-audible, only the LED status indicator will illuminate alerting of the unit malfunction. The microcontroller shall automatically self-test, by simulating a power failure, in accordance with NFPA101 Life Safety Code for one minute monthly, 30 minutes every six months and 90 minutes annually

Every **RD** Series unit shall be fully warranted for three years, subject to proper installation and maintenance.

Unit shall be **Lightalarms®** catalog number_____.

DIMENSIONS

Dimensions are approximate and subject to change.



TYPE _____

CATALOG # _____

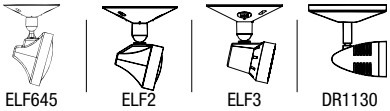
_____

NOTES _____

_____

Designed for fully recessed installation in walls or ceilings


shown with ELF3 heads and LED lamps



Available Head Style Choices: ELF645 | ELF2 | ELF3 | DR1130

Head Style Suffix: /Blank | /ELF2 | /E3 | /D1

POWER CONSUMPTION / UNIT RATING CHART

SERIES	DC SPECS						AC SPECS	
	BATTERY TYPE	DC VOLTAGE	87.5% BATTERY CAPACITY (IN WATTS)[1]				UNITS DUAL VOLTAGE[2]	CURRENT
			90 MIN.	2 HRS.	3 HRS.	4 HRS.		
RD6M1	Lead Calcium	6V	18	12	0	0		
RD6M2		6V	27	18	14	10		
RD6M3		6V	36	25	20	14		
RD12M3		12	36	25	20	14	120VAC	0.3A
RD6C1	Nickel Cadmium	6V	18	12	0	0	277VAC	0.15A
RD6C2		6V	25	18	12	9		
RD12C3		12V	36	21	15	12		
RD12C4		12V	50	36	25	18		

[1] National Electrical Code Specification

[2] All units 120/277 dual voltage, information based on wiring to specific voltage type

ORDERING FORMAT

# OF HEADS	SERIES/CAPACITY	HEAD STYLE	LAMP TYPE	OPTIONS
0= No heads **1**= One head **2**= Two heads	**Lead-Calcium Battery** **RD6M1**= 6V-18W **RD6M2**= 6V-27W **RD6M3**= 6V-36W **RD12M3**= 12V-36W **Nickel-Cadmium Battery** **RD6C1**= 6V-18W **RD6C2**= 6V-25W **RD12C3**= 12V-36W **RD12C4**= 12V-50W	**/Blank**= ELF645 (PAR36, Plastic) **/ELF2**= ELF2 (PAR18, Plastic) **/E3**= ELF3 (MR16, Plastic) **/D1**= DR1130 (MR16, Metal)	**Add lamp suffix to indicate lamp type, voltage and wattage.** For available Lamp Types within a specified Head Style refer to that Head Style page for proper lamp suffix with **Blank (ELF645)**, page 108 with **ELF2**, page 105 with **ELF3**, page 106 with **DR1130**, page 104 **Lamp Type MUST:** 1) Match battery voltage 2) Total of all lamps wattage must not exceed battery watt capacity for 90 min 3) Sealed Beams not compatible with Nickel-Cadmium battery	**Blank**= Mist White housing, No Options **-B**= Black Housing **-ID**= Improved Diagnostics (audible)[1] **-IDNA**= Improved Diagnostics (non audible)[1] **-T1**= Time Delay (5 minutes) **-T2**= Time Delay (10 minutes) **-T3**= Time Delay (15 minutes) **-A**= Ammeter[2] **-V**= Voltmeter[2] **-TBH**= Suspended grid ceiling mounting kit[3] [1] Voltmeter and Ammeter not available with diagnostic ID, IDNA option [2] ID & IDNA include a Time Delay feature that can be enabled/disabled in the field or set by the factory by including ID-TD* or IDNA-TD* [3] Sold as separate item

EXAMPLE: RD12M3/DR130M12-IDNA

LS605P1 SERIES

Recessed Gimbal 6V up to 18W Capacities Lead-Calcium or Nickel-Cadmium battery

TYPE _____

CATALOG # _____

NOTES _____

FEATURES

Housing
- Recessed upper drawn steel housing contains the battery and charger
- Lower portion of the housing contains 8W halogen lamp
- Designed with slide-out chassis and quick-connect plugs
- Standard trim ring Thermoplastic
- NYC approved features: metal trim and gimbal assembly

Mounting
- Recessed Ceiling Mount
- Adjustable hanger bars are supplied with each unit

Lamp Type
- 6V-8W halogen lamp with a horizontal rotation of 358° and vertical angle adjustable to ±42°

Electronics
- Automatic, temperature-compensated, pulse-type charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection is provided
- Battery lock-out prevents battery discharge during installation
- Fused output circuit.

Controls
- Combination AC-ON/battery charger monitor LED
- Momentary test switch allows for operational check of entire system

Choice of Sealed Maintenance-Free Battery
- 6V Lead-Calcium battery
- 6V Nickel-Cadmium battery

Approvals
- UL 924 Standard
- UL Listed for use in insulated ceilings

Warranty (subject to proper installation and maintenance)
- Unit has a three year full warranty (excluding lamps and fuses)[1]
- Lead-Calcium battery has a three year full, plus three year pro-rata warranty
- Nickel-Cadmium battery has a five year full, plus five year pro-rata warranty

[1] For LED lamps warranty, refer to page 168 paragraph 3.2

ACCESSORIES (Order as a separate item)

Remote Test Switch (Metal Faceplate)	**PSW**
Remote Test Switch (Plastic)	**PSW1**

SPECIFICATIONS

Supply and install **Lightalarms® Recessed Gimbal, 605P1, 605C1** Series.

The emergency lighting unit shall be a self-contained fixture including a sealed maintenance-free Lead-Calcium or Nickel-Cadmium battery of 6V, wattage as specified on the unit rating chart. The unit shall supply the rated wattage load for a minimum of 90 minutes to 87-1/2% of rated battery voltage. The unit shall be rated 120/277VAC, 60Hz and be UL 924 listed.

The unit charger shall utilize an integrated circuit which samples the battery in relation to temperature, state of charge and input voltage fluctuations. The charger shall be current limited, temperature compensated, short-circuit protected and reverse polarity protected. The unit shall be furnished with an electronic lockout circuit which will connect the battery when the AC circuit is activated, and an electronic brownout circuit which will activate the unit when utility power dips below 80-85% of nominal voltage. A low voltage battery protection circuit shall be provided and will disconnect the load and circuitry from the battery when it reaches 87-1/2% of its nominal voltage. The unit shall be capable of full recharge in compliance with UL924 specifications. The unit shall be furnished with sealed dust-tight relay, combination AC-ON/battery charger monitor LED, and a momentary test switch that allows for an operational check of the entire system.

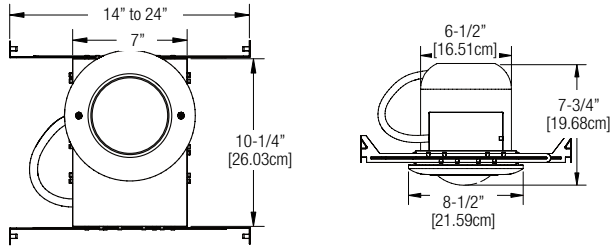
The housing shall be a drawn steel box, the upper side of the recessed upper housing contains the battery and charger, the lower portion of the housing contains halogen lamp. Standard finish of trim ring shall be mist-white plastic. NYC approved version will include a metal trim ring and gimbal assembly, also finished in mist-white or optional black. Slide-out chassis and two quick-connect plugs make installation and servicing easy. Adjustable hanger bars are supplied with each unit.

Every **Lightalarms® Recessed Gimbal, 605P1, 605C1** Series. Unit shall be fully warranted for three years, subject to proper installation and maintenance.

Unit shall be **Lightalarms®** catalog number_____.

DIMENSIONS

Dimensions are approximate and subject to change.



POWER CONSUMPTION / UNIT RATING CHART

SERIES	DC SPECS						AC SPECS	
	BATTERY TYPE	DC VOLTAGE	87.5% BATTERY CAPACITY (IN WATTS)[1]				UNITS DUAL VOLTAGE[2]	CURRENT MAXIMUM
			90 MIN.	2 HRS.	3 HRS.	4 HRS.		
LS605P1-HB	Lead-Calcium	6V	10	0	0	0	120VAC	.3A

[1] National Electrical Code Specification
[2] All units 120/277 dual voltage, information based on wiring to specific voltage type

ORDERING FORMAT

SERIES/CAPACITY	LAMP TYPE	OPTIONS
LS605P1= 10W Lead-Calcium	**/HB**= 6V-10W Wedge base halogen	**Blank**= Mist White Thermoplastic

EXAMPLE: LS605P1/HB

TYPE _____

CATALOG # _____

NOTES _____

LCA-2SQ SERIES

Thermoplastic Housing 6V up to 23W Capacity Lead-Calcium battery

FEATURES

Housing
- Injection-molded, UV stabilized Thermoplastic body, snap-together design
- Two fully adjustable glare-free square lighting heads
- Mist white finish, corrosion and scratch-resistant thermoplastic

Mounting
- Ceiling or Wall Mount
- Keyhole slots and universal knock-outs to mount to any standard 4" junction box

Lamp Type
- Two 6V-5.4W high intensity wedge base incandescent lamps

Electronics
- Automatic, temperature-compensated, charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection is provided
- Battery lock-out prevents battery discharge during installation

Controls
- Red charger monitor LED indicates charging of the battery
- Momentary test switch allows for quick operational check of entire system.

Choice of Sealed Maintenance-Free Battery
- 6V-12W Lead-Calcium battery
- 6V-23W Lead-Calcium battery (11W remote capacity)

Approvals
- UL 924 Standards
- UL 94, 5VA flame rated
- Damp location listed

Warranty (subject to proper installation and maintenance)
- Unit has a three year full warranty (excluding lamps and fuses)[1]
- Lead-Calcium battery has a three year full, plus three year pro-rata warranty

[1] For LED lamps warranty, refer to page 162-163 paragraph 3.2

ACCESSORIES (Order as a separate item)

Wire Guard	**WG10-L**
Vandal Resistant Shield	**CPS**
Vandal Resistant Shield (NEMA-4X)	**CPS-4X**

SPECIFICATIONS

Supply and install **Lightalarms® LCA-2SQ, LCA-2SQR** Series.

The emergency lighting unit shall be a self-contained fixture including a sealed maintenance-free Lead-Calcium battery of 6V-12W or 6V-23W. The unit shall supply the rated wattage load for a minimum of 90 minutes to 87-1/2% of rated battery voltage. The unit shall be rated 120/277VAC, 60Hz, UL 924 and Damp location listed standard.

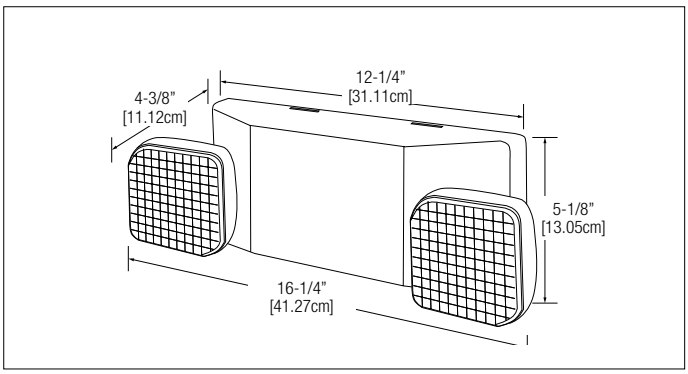
The unit charger shall utilize an integrated circuit which samples the battery in relation to temperature, state of charge and input voltage fluctuations. The charger shall be current limited, temperature compensated, short-circuit protected and reverse polarity protected. The unit shall be furnished with an electronic lockout circuit which will connect the battery when the AC circuit is activated, and an electronic brownout circuit which will activate the unit when utility power dips below 80-85% of nominal voltage. A low voltage battery protection circuit shall be provided and will disconnect the load and circuitry from the battery when it reaches 87-1/2% of its nominal voltage. The unit shall be capable of full recharge in compliance with UL924 specifications. The unit shall be furnished with sealed dust-tight relay, red charger monitor LED indicating charging of the battery and push test switch allows for quick operational check of entire system. The cabinet shall be injection-molded, UV stabilized Thermoplastic body, snap together design with two fully adjustable lighting heads being corrosion and scratch-resistant in a mist white color.

Every **LCA-2SQ, LCA-2SQR** Series unit shall be fully warranted for three years, subject to proper installation and maintenance.

Unit shall be **Lightalarms®** catalog number_____.

DIMENSIONS

Dimensions are approximate and subject to change.



POWER CONSUMPTION / UNIT RATING CHART

SERIES	DC SPECS						AC SPECS	
	BATTERY TYPE	DC VOLTAGE	87.5% BATTERY CAPACITY (IN WATTS)[1]				UNITS DUAL VOLTAGE[2]	CURRENT MAXIMUM
			90 MIN.	2 HRS.	3 HRS.	4 HRS.		
LCA-2SQ	Lead-Calcium	6V	12	-	-		120VAC 277VAC	.08A .04A
LCA-2SQR		6V	23	16	-	-		

[1] National Electrical Code Specification
[2] All units 120/277 dual voltage, information based on wiring to specific voltage type

ORDERING FORMAT

SERIES	HEAD STYLE/LAMP TYPE	CAPACITY
LCA	**-2SQ**= 6V-5.4W Incandescent	**Blank**= No Remote Capacity **R**= 11W Remote Capacity

EXAMPLE: LCA-2SQ

CLUSTER™ LED LCA-2LEDR UNIT & ELF652D REMOTE HEAD SERIES

FEATURES

Housing

- Injection-molded, UV stabilized thermoplastic body, snap together design
- Fully adjustable Cluster™ LED glare-free heads glare-free heads
- Corrosion and scratch-resistant of mist white color

Mounting

- Ceiling or Wall Mount
- Keyhole slots and universal knock-outs to mount to any standard 4" junction box

Lamp Type

- White LED 3.6V-3.6W, with life expectancy 50,000+ hours

Electronics

- Automatic, solid-state
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection is provided.
- Battery lock-out prevents battery discharge during installation

Improved Diagnostics option

- Monitors battery/charger failure, battery disconnect and lamp failure

Controls

- Red charger monitor LED indicates charging of the battery
- Momentary test switch allows for quick operational check of entire system

Sealed Maintenance-Free Battery

- 3.6V Nickel-Metal Hydride battery

Approvals

- Listed to UL 924 Standards
- UL 94, 5VA flame rated
- UL listed for Damp location (68°F to 86°F, 20°C to 30°C)

Warranty (subject to proper installation and maintenance)

- Three-year full warranty (excluding lamps and fuses)[1]
- 3.6V Nickel-Metal Hydride battery, three-year full, five-year pro-rata warranty

[1] For LED lamps warranty, refer to page 168 paragraph 3.2

SPECIFICATIONS

Supply and Install **Lightalarms® Cluster™ LED LCA-2LEDR Series** emergency light unit.

The emergency lighting battery unit shall be a self-contained fixture including a 3.6V sealed maintenance-free Nickel-Metal Hydride battery. The unit shall supply the rated wattage load for a minimum of 90 minutes to 87-1/2% of rated battery voltage. The unit shall be rated 120/277VAC, 60Hz, UL924 and Damp location listed standard (68°F to 86°F, 20°C to 30°C).

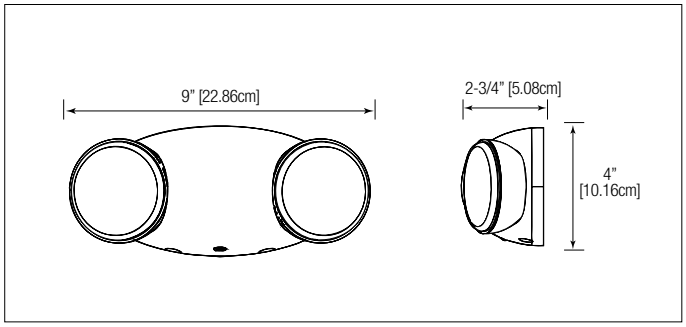
The unit charger shall utilize an integrated circuit which samples the battery in relation to temperature, state of charge and input voltage fluctuations. The charger shall be current limited, temperature compensated, short-circuit protected and reverse polarity protected. The unit shall be furnished with an electronic lockout circuit which will connect the battery when the AC circuit is activated, and an electronic brownout circuit which will activate the unit when utility power dips below 80-85% of nominal voltage. A low voltage battery protection circuit shall be provided and will disconnect the load and circuitry from the battery when it reaches 87-1⁄2% of its nominal voltage. The unit shall be capable of full recharge in compliance with UL924 specifications. The unit shall be furnished with sealed dust-tight relay, red charger monitor LED indicating charging of the battery and push test switch allows for quick operational check of entire system. The cabinet shall be injection-molded, UV stabilized thermoplastic body, snap together design with two fully adjustable white Cluster™ LED glare-free lighting heads being corrosion and scratch-resistant in a mist white color.

Every **LCA-2LEDR Series** unit shall be fully warranted for Three-years, subject to proper installation and maintenance.

The equipment shall be **Lightalarms®** Model: _____ .

DIMENSIONS

Dimensions are approximate and subject to change.



TYPE _____

CATALOG # _____

_____

NOTES _____

_____

The Cluster™ LED Family features an emergency battery unit which includes extra battery capacity to power the Cluster™ LED ELF652D remote head or allow for extended run time.

POWER CONSUMPTION CHART

SERIES	CURRENT (A) / POWER (W)	
	120VAC, 60Hz	**277VAC, 60Hz**
LCA-2LEDR	0.191/0.92	0.129/1.62

ORDERING FORMAT

SERIES	LAMP	CAPACITY
LCA	**-2LED**= Cluster™ LED head style	**Blank**= No Remote **R**= Remote capacity **RID**= Remote capacity with Improved Diagnostics Note: Remote Capacity can ONLY be used to power the Cluster™ LED ELF652D Remote Head or the extend the battery units emergency run time beyond the standard 90 minutes.

Example: LCA-2LEDR

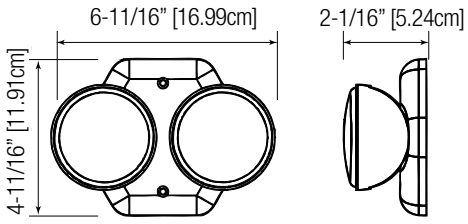
CLUSTER™ LED ELF652D REMOTE HEAD

The **Cluster™ LED ELF652D/LED** Remote head can ONLY be powered from the UQLXN-2LED combo or LCA 2LED battery units of the same family. Used for internal or external applications, the indoor remote head draws 3.6V-3.6W and Weather-Proof head draws 3.6V-3.8W.

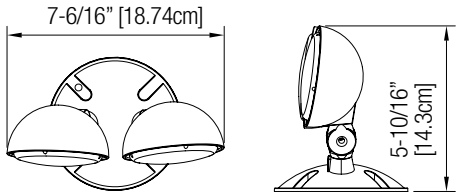
DIMENSIONS

Dimensions are approximate and subject to change.

Indoor Remote



Weatherproof Remote



ORDERING FORMAT

SERIES	# OF HEADS	LAMP	OPTION
ELF652	**D**= Double Head	**/LED**= Cluster™ LED head style	**Blank**= Indoor Use Only **-WP**= Weather-Proof

Example: ELF652D/LED

LCA-2MRS & LCA-2LD SERIES

Thermoplastic Housing
6V-10W Capacity – Lead-Calcium battery

AVAILABLE WITH LED LAMP HEADS

TYPE _____

CATALOG # _____

NOTES _____

FEATURES

Housing
- Injection-molded, UV stabilized thermoplastic body, snap-together design
- Two fully adjustable glare-free MR16 lighting heads
- Mist white finish, corrosion and scratch-resistant thermoplastic

Mounting
- Ceiling or Wall Mount
- Keyhole slots and universal knock-outs to mount to any standard 4" junction box

Choice of Lamp Types
- Two 6W each MR16 Halogen lamps
- Two 4W each MR16 LED lamps

Electronics
- Automatic, temperature compensated, pulse-type charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection is provided
- Battery lock-out prevents battery discharge during installation

Controls
- Red charger monitor LED indicates charging of the battery
- Momentary test switch allows for quick operational check of entire system

Sealed Maintenance-Free Battery
- 6V Lead-Calcium battery

Approvals
- UL 924 Standards
- UL 94, 5VA flame rated
- Damp location listed

Warranty (subject to proper installation and maintenance)
- Unit has a three year full warranty (excluding lamps and fuses)[1]
- Lead-Calcium battery has a three year full, plus three year pro-rata warranty

[1] For LED lamps warranty, refer to page 168 paragraph 3.2

ACCESSORIES (Order as a separate item)

Wire Guard	**WG10-L**
Vandal Resistant Shield	**CPS**
Vandal Resistant Shield (NEMA-4X)	**CPS-4X**

SPECIFICATIONS

Supply and install **Lightalarms® LCA-2MRS & LCA-2LD** Series.

The emergency lighting unit shall be a self-contained fixture including a sealed maintenance-free Lead-Calcium battery of 6V-12W. The unit shall supply the rated wattage load for a minimum of 90 minutes to 87-1/2% of rated battery voltage. The unit shall be rated 120/277VAC, 60Hz, UL 924 and Damp location listed standard.

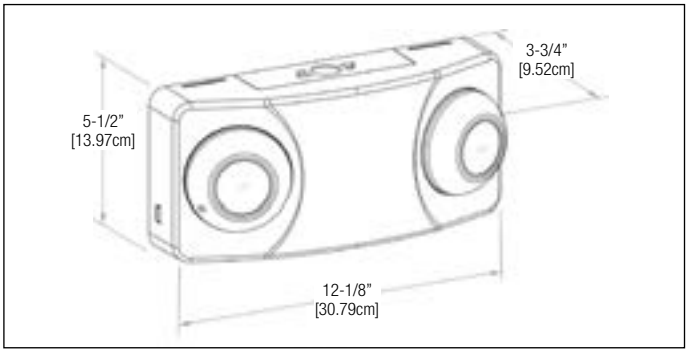
The unit charger shall utilize an integrated circuit which samples the battery in relation to temperature, state of charge and input voltage fluctuations. The charger shall be current limited, temperature compensated, short-circuit protected and reverse polarity protected. The unit shall be furnished with an electronic lockout circuit which will connect the battery when the AC circuit is activated, and an electronic brownout circuit which will activate the unit when utility power dips below 80-85% of nominal voltage. A low voltage battery protection circuit shall be provided and will disconnect the load and circuitry from the battery when it reaches 87-1/2% of its nominal voltage. The unit shall be capable of full recharge in compliance with UL 924 specifications. The unit shall be furnished with sealed dust-tight relay, red charger monitor LED indicating charging of the battery and push test switch allows for quick operational check of entire system. The cabinet shall be injection-molded, UV stabilized thermoplastic body, snap together design with two fully adjustable glare-free MR16 lighting heads being corrosion and scratch-resistant in a mist white color.

Every **LCA-2MRS & LCA-2LD** Series unit shall be fully warranted for three years, subject to proper installation and maintenance.

Unit shall be **Lightalarms®** catalog number_____.

DIMENSIONS

Dimensions are approximate and subject to change.



POWER CONSUMPTION / UNIT RATING CHART

SERIES	DC SPECS						AC SPECS		
	BATTERY TYPE	DC VOLTAGE	87.5% BATTERY CAPACITY (IN WATTS)[1]				UNITS DUAL VOLTAGE[2]	CURRENT MAXIMUM	POWER MAXIMUM
			90 MIN.	2 HRS.	3 HRS.	4 HRS.			
LCA-2MRS	Lead-Calcium	6V	12	-	-		120VAC 277VAC	.1A .05A	7.5W 7.5W
LCA-2LD1		6V	12	-	-	-			

[1] National Electrical Code Specification
[2] All units 120/277 dual voltage, information based on wiring to specific voltage type

ORDERING FORMAT

SERIES	LAMP TYPE
LCA	**-2MRS**= 6V-5W MR16 halogen **-2LD1**= 6V-4W MR16 LED

EXAMPLE: LCA-2MRS

AVAILABLE WITH LED LAMP HEADS

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

LCA1250 SERIES

Thermoplastic Housing with High Capacity 12V-50W Lead-Calcium Battery

FEATURES

Housing
- Injection-molded, UV stabilized Thermoplastic body, snap-together design
- Two fully adjustable glare-free MR16 lighting heads
- Mist white in color, corrosion and scratch-resistant Thermoplastic

Mounting
- Wall Mount
- Keyhole slots and universal knock-outs to mount to any standard 4" junction box

Choice of Lamp Types
- Two 12W or 20W each MR16 Halogen lamps
- Two 4W each MR16 LED lamps

Electronics
- Automatic, temperature compensated, pulse-type charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection is provided
- Battery lock-out prevents battery discharge during installation

Controls
- Red charger monitor LED indicates charging of the battery
- Momentary test switch allows for quick operational check of entire system

Sealed Maintenance-Free Battery
- 12V-50W Lead-Calcium battery

Approvals
- UL 924 Standards
- UL 94, 5VA flame rated
- Damp location listed

Warranty (subject to proper installation and maintenance)
- Unit has a three year full warranty (excluding lamps and fuses)[1]
- Lead-Calcium battery has a three year full, plus three year pro-rata warranty

[1] For LED lamps warranty, refer to page 162-163 paragraph 3.2

ACCESSORIES (Order as a separate item)

Wire Guard	**WG10-L**
Vandal Resistant Shield	**CPS**
Vandal Resistant Shield (NEMA-4X)	**CPS-4X**

SPECIFICATIONS

Supply and install **Lightalarms® LCA1250** Series.

The emergency lighting unit shall be a self-contained fixture including a sealed maintenance-free Lead-Calcium battery of 12V-50W. The unit shall supply the rated wattage load for a minimum of 90 minutes to 87-1/2% of rated battery voltage. The unit shall be rated 120/277VAC, 60Hz, UL 924 and Damp location listed standard.

The unit charger shall utilize an integrated circuit which samples the battery in relation to temperature, state of charge and input voltage fluctuations. The charger shall be current limited, temperature compensated, short-circuit protected and reverse polarity protected. The unit shall be furnished with an electronic lockout circuit which will connect the battery when the AC circuit is activated, and an electronic brownout circuit which will activate the unit when utility power dips below 80-85% of nominal voltage. A low voltage battery protection circuit shall be provided and will disconnect the load and circuitry from the battery when it reaches 87-1⁄2% of its nominal voltage. The unit shall be capable of full recharge in compliance with UL 924 specifications. The unit shall be furnished with sealed dust-tight relay, red charger monitor LED indicating charging of the battery and push test switch allows for quick operational check of entire system. The cabinet shall be injection-molded, UV stabilized Thermoplastic body, snap together design with two fully adjustable glare-free MR16 lighting heads being corrosion and scratch-resistant in a mist white color.

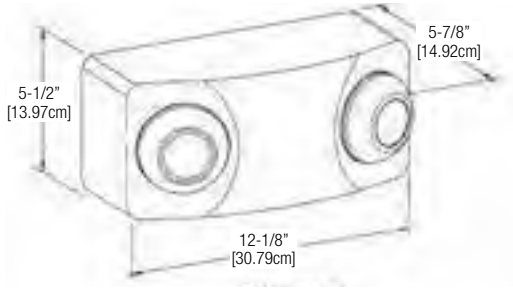
Every **LCA1250** Series unit shall be fully warranted for three years, subject to proper installation and maintenance.

Unit shall be **Lightalarms®** catalog number_____.

DIMENSIONS

Dimensions are approximate and subject to change.

12V-50W



POWER CONSUMPTION / UNIT RATING CHART

SERIES	DC SPECS						AC SPECS		
	BATTERY TYPE	DC VOLTAGE	87.5% BATTERY CAPACITY (IN WATTS)[1]				UNITS DUAL VOLTAGE[2]	CURRENT MAXIMUM	POWER MAXIMUM
			90 MIN.	2 HRS.	3 HRS.	4 HRS.			
LCA1250	Lead-Calcium	12V	50	36	25	18	120VAC 277VAC	.21A .1A	23W 23W

[1] National Electrical Code Specification
[2] All units 120/277 dual voltage, information based on wiring to specific voltage type

ORDERING FORMAT

SERIES	LAMP TYPE
LCA1250= 12V-50W	**-2M12**= (2) 12V-12W MR16 Halogen Lamps **-2M20**= (2) 12V-20W MR16 Halogen Lamps **-2LD7**= (2) 12V-4W MR16 LED

EXAMPLE: LCA1250-2M12

GRANDE™ SERIES

Thermoplastic Housing
6V up to 60W & 12V up to 72W Capacities
Lead-Calcium or Nickel-Cadmium battery

FEATURES

Housing
- Injection-molded, UV stabilized Thermoplastic, snap-together design
- Corrosion and scratch-resistant, mist white finish or optional black
- Snap-on, shock absorbent, clear polycarbonate lens covers
- Two fully adjustable glare-free MR16 protected lighting heads

Mounting
- Wall Mount, Ceiling Mount (optional)
- Universal knock-outs to mount to any standard 4" junction box

Choice of Lamp Type
- Two MR16 Halogen lamps
- Two MR16 LED lamps

Electronics
- Micro-controller based charging circuit
- Automatic, temperature compensated, pulse-type charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection is provided
- Battery lock-out prevents battery discharge during installation
- Fused output circuit

Improved Diagnostics option
- Units equipped with Improved Diagnostics shall self-test, by simulating a power failure, in accordance with NFPA101, Life Safety Code one minute monthly, 30 minutes every six months and 90 minutes annually. For complete information refer to page 8.

NEXUS® option
- Units equipped with NEXUS® self-testing monitoring system circuitry shall self-test, in accordance with NFPA101 Life Safety Code for a minimum of 30 seconds monthly, 30 minutes every six months and 90 minutes annually as well as keep a history of all testing logs, plus feature real-time diagnoses, and provide the exact fixture location while notifying service personnel of the status of the fixture via email. For complete information refer to page 4-5.

Controls
- Green LED pilot light to indicate AC-ON
- Momentary test switch allows for quick operational check of entire system

Choice of Sealed Maintenance-Free Battery
- 6V or 12V Lead-Calcium battery
- 6V or 12V Nickel-Cadmium battery

Approvals
- UL 924 Standard
- UL 94, 5VA flame rated Thermoplastic housing
- Damp location listed (optional)

Warranty (subject to proper installation and maintenance)
- Unit has a three year full warranty (excluding lamps and fuses)[1]
- Lead-Calcium battery has a three year full, plus three year pro-rata warranty
- Nickel-Cadmium battery has a five year full, plus five year pro-rata warranty

[1] For LED lamps warranty, refer to page 168 paragraph 3.2

ACCESSORIES (Order as a separate item)

Wire Guard (Wall Mount)	**WG1-L**
Wire Guard (Ceiling Mount)	**WG5-L**

SPECIFICATIONS

Supply and install **Lightalarms® Grande™** Series.

The emergency lighting unit shall be a self-contained fixture including a sealed maintenance-free Lead-Calcium or Nickel-Cadmium battery of 6V or 12V, wattages as specified on the unit rating chart. The unit shall supply the rated wattage load for a minimum of 90 minutes to 87-1/2% of rated battery voltage. The unit shall be rated 120/277VAC, 60Hz and be UL 924 listed.

The unit charger shall utilize a micro-controller which samples the battery in relation to the ambient temperature, state of charge and input voltage fluctuations. The charger shall be current limited, temperature compensated, and short-circuit protected. The unit shall be furnished with an electronic lockout circuit which will connect the battery when the AC circuit is activated, and an electronic brownout circuit which will activate the unit when utility power dips below 80-85% of nominal voltage. A low voltage battery protection circuit shall be provided and will disconnect the load and circuitry from the battery when it reaches 87-1/2% of its nominal voltage. The unit shall be capable of full recharge in compliance with UL 924 specifications. The unit shall be furnished with sealed dust-tight relay, Green LED pilot light to indicate AC-ON and a momentary test switch allows for quick operational check of entire system.

The cabinet shall be injection-molded, with UV stabilized Thermoplastic body, snap together designand have a corrosion and scratch-resistant finish in a mist white or optional black color with two fully adjustable glare-free MR16 protected polycarbonate covered lighting heads.

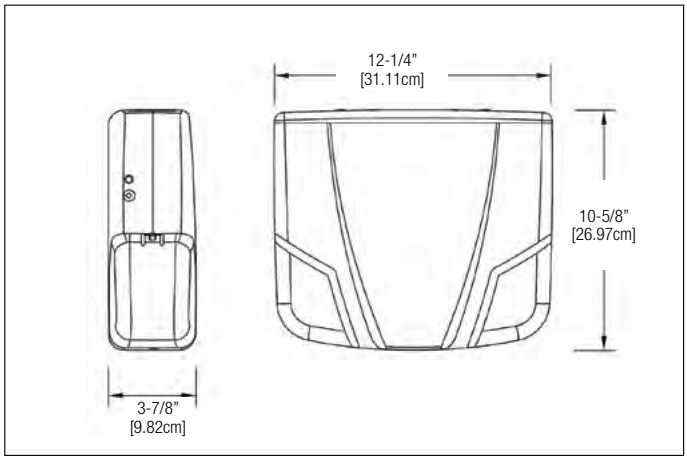
Units specified with Improved Diagnostics shall continuously monitor every critical function of the unit. If a malfunction occurs, if audible, a high-pitch audible alarm will sound and the green pilot indicator LED located on the unit will change to red and begin to a flash, indicating a fault. If non-audible, only the green pilot indicator LED located on the unit will change to red and begin to a flash, indicating a fault. A detailed diagnostic legend next to the pilot indicator LED provides fault identification as battery, charger circuitry or lamps failure. The micro-controller shall automatically self-test, by simulating a power failure in accordance with NFPA101 Life Safety Code for one minute monthly, monthly, 30 minutes every six months and 90 minutes annually

Every **Grande™** Series unit shall be fully warranted for three years, subject to proper installation and maintenance.

Unit shall be **Lightalarms®** catalog number_____.

DIMENSIONS

Dimensions are approximate and subject to change.



TYPE _____

CATALOG # _____

NOTES _____

nexus id improved diagnostics

Designed with aesthetics, ease of installation on wall or ceiling and performance in mind

POWER CONSUMPTION / UNIT RATING CHART

SERIES	DC SPECS						AC SPECS	
	BATTERY TYPE	DC VOLTAGE	87.5% BATTERY CAPACITY (IN WATTS)[1]				UNITS DUAL VOLTAGE[2]	CURRENT MAXIMUM
			90 MIN.	2 HRS.	3 HRS.	4 HRS.		
GRA1	Lead-Calcium	6V	18	14	9	0	120VAC 277VAC	.25A .12A
GRA3		6V	30	20	15	10		
GRA6		6V	40	30	20	15		
GR12A6		6V	60	40	30	20		
GR12A7		6V	72	54	36	27		
GRN2	Nickel-Cadmium	6V	20	15	10	8	120VAC 277VAC	.2A .1A
GRN25		6V	25	18	12	9		
GR12N4		6V	40	30	20	15		
GR12N50		12V	50	36	24	18		

[1] National Electrical Code Specification
[2] All units 120/277 dual voltage, information based on wiring to specific voltage type

ORDERING FORMAT

# OF HEADS	SERIES/CAPACITY	LAMP TYPE[2]	HOUSING COLOR	OPTIONS
Blank= No heads **2**= Two heads	**Lead-Calcium battery** **GRA1**= 6V-18W **GRA3**= 6V-30W **GRA6**= 6V-60W[1] **GR12A4**= 12V-40W **GR12A6**= 12V-60W **GR12A7**= 12V-72W **Nickel-Cadmium battery** **GRN2**= 6V-20W **GRN25**= 6V-25W[1] **GR12N4**= 12V-40W **GR12N50**= 12V-50W[1]	**MR16 Halogen Lamp** **M6**= 6V-6W[1] **M10**= 6V or 12V-10W[1] **M12**= 12V-12W[1] **M20**= 12V-20W[1] **MR16 LED Lamp** **LD1**= 6V-4W **LD7**= 12V-4W **LD9**= 12V-5W **LD10**= 12V-6W	**M**= Mist White **B**= Black	**Blank**= No Options **-ID**= Improved Diagnostics (audible)[1] **-IDNA**= Improved Diagnostics (non audible)[1] **-NEX**= Nexus® Wired Compatible[2] **-NEXRF**= Nexus® Wireless Compatible[2] **-T1**= Time Delay (5 minute) **-T2**= Time Delay (10 minute) **-T3**= Time Delay (15 minute) **-3CP**= 120V Cord & Plug, 3 wire, 3ft long[3] **-3CP277**= 277V Cord & Plug, 3 wire, 3ft long[3] **-DL**= Damp Location[4] [50°F -104°F (10°C - 40°C)] **-CM**= Ceiling Mount **-PM**= Pendant Mount
	[1] Not available with Damp Location	[1] Not available with Damp location [2] No other lamp types available for this Series, for complete information on these lamp types refer to page 101.		[1] -ID & IDNA include a time delay feature that can be enabled/disabled in the field or set by the factory by including -ID-TD* or -IDNA-TD* [2] -NEX & -NEXRF is CSA-US approved only. Consult your sales representative [3] -3CP & -3CP277 custom lengths available . Consult your sales representative [4] Not available with -NEX & -NEXRF option or GR12N50 & GRN25 models

EXAMPLE: 2GRA3M10M

GRANDE™ THERMOPLASTIC FAMILY – The **Grande™** Battery Unit is a part of **Grande™** family of Thermoplastic emergency lighting products. Giving the same family look and style to a complete emergency lighting and exit sign application.

Grande™ Exit Series p.30

Grande™ Combination Series p.32

ELF640 (indoor) & ELF650 (outdoor) Remote Fixture p.110-111

CAMRAY® LED SERIES

Die-Cast aluminum
LED Emergency Lighting – Interior or Exterior Capable
Nickel-Metal Hydride battery

FEATURES

Housing
Indoor/outdoor suitable for wet location

- Die-Cast aluminum housing
- Clear, High Impact, UV- Resistant (3" x 1.5") polycarbonate lens
- Four colors are available: off white, black, platinum gray and dark bronze

Mounting

- Wall Mount
- 1/2" rigid conduit entry provision on the top of the unit
- Universal knock-outs to mount to any standard 4" junction box
- Patent-pending design for easy installation: wall-mount back-plate includes electrical wire box with snap-on connector

Lamp Type

- Patent-pending light engine: four power LEDs with redundant connections and very wide beam
- 400-640 Lumens
- Color temperature: 5000K
- Optional forward-throw light distribution, for applications of outdoor Exit discharge (OSHA 1910.36)
- Optional high-lumen output: increase 25-50% additional level of illumination
- Optional dual-mode operation: normal and emergency LED lighting with separate AC inputs

Electronics

- Automatic, temperature compensated
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection is provided
- Battery lock-out prevents battery discharge during installation
- Fused output circuit

Improved Diagnostics

- Nickel-Metal Hydride battery units are standard with Improved Diagnostics shall self-test, by simulating a power failure, in accordance with NFPA101, Life Safety Code minimum 1 minute every 30 days, 30 minutes every 6 months and 90 minutes annually. For complete information refer to page 8.

Controls

- Integrated test button and LED optical pipe pilot light
- Optional photo-switch: dusk-to-dawn control of normal lighting
- Optional remote test: infrared remote control (keyboard ordered separately)
- Optional time delay: choice of 5, 10 or 15 minutes

Sealed Maintenance-Free Battery

- High-Temperature Rated, Nickel-Metal Hydride technology battery

Approval

- UL 924 Standards for wet, cold and Damp locations
- Nema-3R rated for indoor/outdoors cold-weather wet and Damp locations: -20... 40°C (-4.... 104°F)

Warranty (subject to proper installation and maintenance)

- Unit has a five year limited warranty (excluding lamps and fuses)[1]
- Nickel-Metal Hydride battery has a five year full, plus five year pro-rata warranty

[1] For LED lamps warranty, refer to page 168 paragraph 3.2

SPECIFICATIONS

Supply and install the **Camray®** Series of LED emergency lighting unit from **Lightalarms®**. The unit body shall include a back-plate and housing made of Die-Cast aluminum with paint finish color of white, black, platinum gray or dark bronze and a UV- and impact-resistant polycarbonate lens of size: 3" by 1.5". The back-plate shall have knockouts for wires and wall-mount installation box as well as a threaded hole for rigid conduit entry at the top of the unit. The back-plate shall have a built-in electrical box with wire terminals and snap-on connector. After complete electrical installation of the back-plate the equipment housing shall be installed by a simple push & snap over the back-plate.

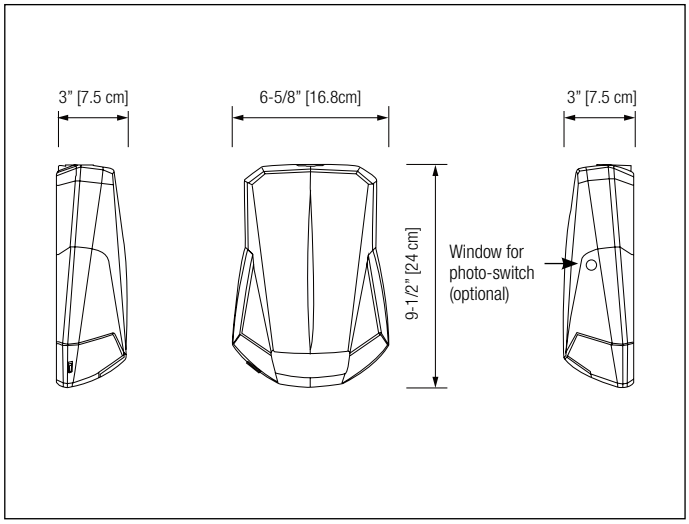
The emergency lights shall be 4 (four) power-light-emitting diodes (LED) with operational life of minimum 36,000 hours, until 70% of the initial light level (L70). The LED lamps shall have redundant interconnections: eventual failure of one lamp shall allow other LED lamps to function. The unit shall have a dual-voltage input rated: 120/277VAC, 60Hz. The battery charger shall include low voltage disconnect to prevent deep discharge, battery lockout to prevent battery drain prior to energizing the utility power, and brownout protection which will automatically switch unit into emergency mode if the utility power falls below 80% of nominal level. The unit with Nickel-Metal Hydride battery shall be equipped with a micro-controller-based non-audible Improved Diagnostic circuit. The unit shall self-test for one minute every month, 30 minutes every six months and 90 minutes annually. The pilot light shall be integrated with the test button; it shall be a bi-color LED and shall change color from normal green to flashing red when a failure is detected from the battery, charger circuit or lamps. A label located near the pilot light shall describe the diagnostic for each flashing code.

When specified, models with dual-mode illumination shall include two separate AC input circuits: for emergency lighting and for normal lighting. When specified, models equipped with photo-switch shall automatically activate the lights only from dusk till dawn, for additional energy savings. The typical ambient illumination for the photo-switch shall be: one foot-candle (to turn-on) and three foot-candles (to turn-off). The unit shall be UL Listed to the UL924 Standard for wet and Damp locations.

Unit shall be **Lightalarms®** catalog number_____.

DIMENSIONS

Dimensions are approximate and subject to change.



LED LIGHT SOURCE NORMALLY-ON AND EMERGENCY BACK-UP

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

NEMA-3R

Performance, low-profile, modern slim look emergency unit with optional dual mode normally-on and photo-cell activated models

PHOTOMETRY PERFORMANCE

Whether installed indoors or outdoors, with spacing measurements for a single unit or between two units center-to-center, the **Camray®** Series LED delivers a stable and consistent illumination making it easy to specify in a wide range of applications. The outstanding spacing of illumination ranges from 50 to 70 feet for standard units (wide beam) and from 40 to 50 feet with the forward-throw beam option.

AVERAGE OF 1 FOOT-CANDLE

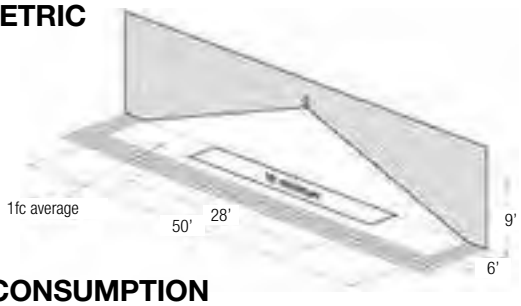
TABLE A: SPACING FOR NFPA101 (AVERAGE = 1FC, SEE NOTE)					
MODEL TYPE	MOUNTING HEIGHT	LUMEN	COLOR TEMPERATURE	WIDTH X LENGTH (FT)	
				SINGLE UNIT	CENTER-TO-CENTER
Standard	9’	400	5000K	6’ X 50’	6’ X 50’
With option -H	11’	550		6’ X 60’	6’ X 60’
					3’ X 70’
With option -FT	12’	460		6’ X 40’	—
With option -FTH	15’	640		6’ X 50’	—

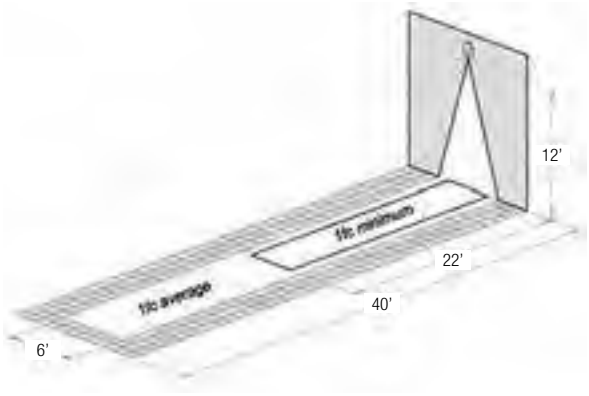
Indoor reflectance: 80/50/20 and 10-ft wide corridor. Outdoor reflectance: 0/30/10
Note: The illumination level meets ALL the requirements of the Life Safety Code (NFPA 101):
1) Average of 1 foot-candle or more
2) Minimum at any point of 0.1 foot-candle or more
3) Maximum-to-minimum illumination uniformity ratio of 40:1 or less

MINIMUM OF 1 FOOT-CANDLE

TABLE B: SPACING FOR MINIMUM ILLUMINATION = 1FC					
MODEL TYPE	MOUNTING HEIGHT	LUMEN	COLOR TEMPERATURE	WIDTH X LENGTH (FT)	
				SINGLE UNIT	CENTER-TO-CENTER
Standard	9’	400	5000K	4’ x 28’	4’ x 32’
With option -H	11’	550		4’ x 32’	4’ x 40’
With option -FT	12’	460		4’ x 22’	—
With option -FTH	15’	640		4’ x 27’	—

PHOTOMETRIC





POWER CONSUMPTION

MODEL	AC INPUT(S): 120/277VAC				DC INPUT
	NORMAL LIGHTING		EMERGENCY LIGHTING		6-12V[1]
	CURRENT (MAX)	POWER (MAX.)	CURRENT (MAX)	POWER (MAX.)	POWER (MAX.)
AC, 2AC, ACDC, DC	0.12/0.08A	12W	0.11/0.08A	12W	8W
All above, -H	0.18/0.11A	18W	0.18/0.11A	18W	14W (6VDC only)
ACSD, SD, SD-H	0.12/0.06A	12W	0.05/0.02A	5W	N/A[1]
SD-CW	—	—	0.15/0.07A	16W	
ACSD-CW-P, -FT	N/A[1]		0.22/0.10A	24W	

[1] Note: Only unswitched AC input; normal lighting with photo-switch or remote control

ORDERING FORMAT - BATTERY UNIT

SERIES	MODEL	COLOR	OPTIONS
CAM= Camray LED	**Nickel-Metal Hydride Battery Units (standard with Self-Diagnostics)** **SD**= Self-Powered Only (-4°F + 122°F)(-20°C + 50°C) **ACSD**= Dual-Mode AC/Self-Powered (-4°F + 104°F) (-20°C + 40°C)	**B**= Black **DB**= Dark bronze **OW**= Off white **PG**= Platinum gray	**-CW**= Cold weather (-40°F - 86°F) (-40°C - 30°C); not available with option -H **-FT**= Forward throw lighting **-H**= High lumen output (32... 86°F / 0... 30°C; model SD only) **-P**= Photo-switch, (model models ACSD only) **-T1**= Time delay: 5 minutes (models ACSD, SD only) **-T2**= Time delay: 10 minutes (models ACSD, SD only) **-T3**= Time delay: 15 minutes (models ACSD, SD only) **-RC**= Remote control - infrared[1] [1] With -RC option, order the remote control keypad (TB-RC1-L) separately

EXAMPLE: CAMSDOW-RC

ORDERING FORMAT - REMOTE FIXTURE

SERIES	MODEL	COLOR	OPTIONS
CAM= Camray LED	**AC**= AC-Only (-40°F + 122°F) (-40°C + 50°C) 120/277V **2AC**= AC-Only two Circuit 120/120V or 277/277V (-40°F + 122°F) (-40°C + 50°C) **ACDC**= AC/6-12VDC (-40°F + 122°F) (-40°C + 50°C) **DC**= 6-12VDC Only (-40°F + 122°F) (-40°C + 50°C)	**B**= Black **DB**= Dark bronze **OW**= Off white **PG**= Platinum gray	**-FT**= Forward throw lighting **-H**= High lumen output (maximum 86°F/30°C); not available ACSD) **-P**= Photo-switch, (model models AC, AC/DC only) **-RC**= Remote control - infrared[1] [1] With -RC option, order the remote control keypad (TB-RC1-L) separately

EXAMPLE: CAMACOW-RC


Shown with ELF3 heads and LED Lamps

MC SERIES

Steel Housing
6V up to 36W & 12V up to 50W Capacities
Lead-Calcium or Nickel-Cadmium battery

FEATURES

Housing
- 20 gauge steel housing with hinged front access panel
- Corrosion-resistant baked enamel mist white finish standard, black optional
- Provision for mounting up to 2 lighting heads
- Various choices of lighting head styles and lamp types

Mounting
- Ceiling or Wall Mount
- 1/2" conduit knock-outs, rear keyhole slots and universal knock-outs to mount to any standard 4" junction box

Electronics
- Automatic, temperature compensated, pulse-type charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection is provided
- Battery lock-out prevents battery discharge during installation
- Fused output circuit

Improved Diagnostics option
- Units equipped with Improved Diagnostics shall self-test, by simulating a power failure, in accordance with NFPA101, Life Safety Code one minute monthly, 30 minutes every six months and 90 minutes annually. For complete information refer to page 8.

NEXUS® option
- Units equipped with NEXUS® self-testing monitoring system circuitry shall self-test, in accordance with NFPA101 Life Safety Code for a minimum of 30 seconds monthly, 30 minutes every six months and 90 minutes annually as well as keep a history of all testing logs, plus feature real-time diagnoses, and provide the exact fixture location while notifying service personnel of the status of the fixture via email. For complete information refer to page 4-5.

Controls
- Red charger monitor LED indicates charging of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allows for quick operational check of entire system

Choice of Sealed Maintenance-Free Battery
- 6V or 12V Lead-Calcium battery
- 6V or 12V volt, Nickel-Cadmium battery

Approvals
- UL 924 Standard

Warranty (subject to proper installation and maintenance)
- Unit has a three year full warranty (excluding lamps and fuses)[1]
- Lead-Calcium battery has a three year full, plus three year pro-rata warranty
- Nickel-Cadmium battery has a five year full, plus five year pro-rata warranty

[1] For LED lamps warranty, refer to page 168 paragraph 3.2

HEAD STYLE WITH LAMP TYPE CHOICES

LAMP TYPE	HEAD STYLE					
	ELF645 (pg.134)	**ELF2** (pg.129)	**ELF3** (pg.130)	**DR1130** (pg.128)	**ELF622** (pg.131)	**ELF623** (pg.132)
Wedge Based Incandescent	X	X			X	X
BI-Pin Halogen	X	X			X	X
PAR36 Sealed Beam Incand.	X				X	
PAR36 Sealed Beam Halogen	X				X	
MR16 Halogen			X	X		
MR16 LED			X	X		

SPECIFICATIONS

Supply and install **Lightalarms® MC** Series.

The emergency lighting unit shall be a self-contained fixture including a sealed maintenance-free Lead-Calcium or Nickel-Cadmium battery of 6V or 12V, of wattage as specified on the unit rating chart. The unit shall supply the rated wattage load for a minimum of 90 minutes to 87-1/2% of rated battery voltage.

The unit shall be rated 120/277VAC, 60Hz and be UL 924 listed.

The unit charger shall utilize an integrated circuit which samples the battery in relation to its temperature, state of charge and input voltage fluctuations. The charger shall be current limited, temperature compensated, short-circuit protected and reverse polarity protected. The unit shall be furnished with an electronic lockout circuit which will connect the battery when the AC circuit is activated, and an electronic brownout circuit which will activate the unit when utility power dips below 80-85% of nominal voltage. A low voltage battery protection circuit shall be provided and will disconnect the load and circuitry from the battery when it reaches 87-1⁄2% of its nominal voltage. The unit shall be capable of full recharge in compliance with UL 924 specifications. The unit shall be furnished with sealed dust-tight relay, a test switch and dual diagnostic LED indicator lights (hi-charge and AC pilot). The cabinet shall be 20 gauge steel with a front hinged panel. Unit shall have 1/2" conduit knock-outs, rear keyhole slots and universal knock-outs to mount to any standard 4" junction box with provision for mounting up to 2 heads on top of cabinet.

Units specified with Improved Diagnostics (audible or non-audible) will continuously monitor every critical function of the unit, attached remote lighting heads and/or attached AC/DC Exit Signs. Operational status of the battery, charger and lamps are indicated by individual LED status indicators. Once a malfunction is detected, if audible, a high-pitch audible alarm will sound, and the appropriate LED status indicator will illuminate alerting of the unit malfunction. If non-audible, only LED status indicator illuminate alerting of the unit malfunction. The microcontroller shall automatic self-test, by simulating a power failure in accordance with NFPA101 Life Safety Code for one minute monthly, 30 minutes every six months and 90 minutes annually

Every **MC** Series unit shall be fully warranted for three years, subject to proper installation and maintenance.

Unit shall be **Lightalarms®** catalog number_____.

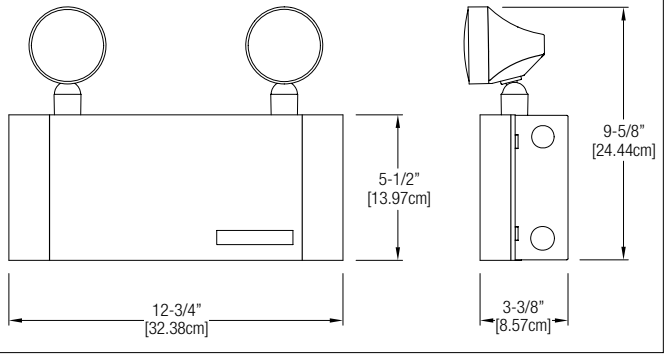
ACCESSORIES (Order as a separate item)

Wire Guard (ELF2, ELF3 and DR1130 Heads)	**WG1**
Wire Guard (ELF622, ELF623 and ELF645 Heads)	**WG2**

DIMENSIONS

Dimensions are approximate and subject to change.

Shown with ELF2 heads



TYPE _____

CATALOG # _____

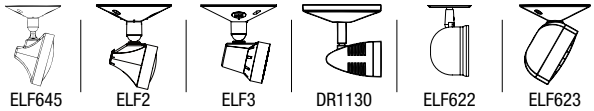
_____

NOTES _____

_____

nexus id improved diagnostics UL

Incorporates maximum versatility in head style and lamp choices with performance, ease of installation, all into a compact unit



	ELF645	ELF2	ELF3	DR1130	ELF622	ELF623
Available Head Style Choices:						
Head Style Suffix:	/Blank	/ELF2	/ELF3	/DR1130	/ELF622	/ELF623

POWER CONSUMPTION / UNIT RATING CHART

SERIES	DC SPECS						AC SPECS		
	BATTERY TYPE	DC VOLTAGE	87.5% BATTERY CAPACITY (IN WATTS)[1]				UNITS DUAL VOLTAGE[2]	CURRENT MAXIMUM	POWER MAXIMUM
			90 MIN.	2 HRS.	3 HRS.	4 HRS.			
MCG	Lead-Calcium	6V	18	12	0	0	120VAC 277VAC	.2A .08A	24W
MCG1		6V	20	15	12	0			
MCG2		6V	27	18	15	9			
MCG3		6V	30	20	18	10			
MCG4		6V	36	27	20	12			
MCG5		6V	40	30	24	15			
MC121		12V	36	27	20	12	277VAC	.12A .24A	30W
MCN1	Nickel-Cadmium	6V	20	18	12	0	120/277VAC	.2A/.08A	24W
MC12N1		12V	36	24	15	12	120VAC	.24A	30W
MC12N2		12V	50	36	24	18	277VAC	.12A	

[1] National Electrical Code Specification

[2] All units 120/277 dual voltage, information based on wiring to specific voltage type

ORDERING FORMAT

# OF HEADS	SERIES/CAPACITY	HEAD STYLE	LAMP TYPE	HOUSING COLOR	OPTIONS
0= No Heads **1**= One Head **2**= Two Heads	**Lead-Calcium battery** **MCG**= 6V-18W **MCG1**= 6V-20W **MCG2**= 6V-27W **MCG3**= 6V-30W **MCG4**= 6V-36W **MC12G1**= 12V-20W **Nickel-Cadmium battery*** **MCN1**= 6V-20W* **MC12N1**= 12V-36W* **MC12N2**= 12V-50W* * Not available with sealed beams _____ lamps	**/Blank**= ELF645 (PAR36, Plastic) **/ELF622**= ELF622 (PAR36, Metal) **/ELF2**= ELF2 (PAR18, Plastic) **/ELF3**= ELF3 (MR16, Plastic) **/DR1130**= DR1130 (MR16, Metal) **/ELF623**= ELF623 (Square, Plastic)	**Add lamp suffix to indicate lamp type, voltage and wattage.** For available Lamp Types within a specified Head Style, refer to that Head Style page for proper lamp suffix with **Blank (ELF645)**, page 134 with **ELF622**, page 131 with **ELF2**, page 129 with **ELF3**, page 130 with **DR1130**, page 128 with **ELF623**, page 132 **Lamp Type MUST:** 1) Match Battery Voltage 2) Total of all lamps wattage must not exceed battery watt capacity for 90 min.	**-M**= Mist White **-B**= Black	**Blank**= No Options **-ID**= Improved Diagnostics (audible)[1] **-IDNA**= Improved Diagnostics (non audible)[1] **-NEX**= Nexus® Wired Compatible[2] **-NEXRF**= Nexus® Wireless Compatible[2] **-T1**= Time Delay (5 minute) **-T2**= Time Delay (10 minute) **-T3**= Time Delay (15 minute) **-DS**= Lamp Disconnect Switch **-VS**= Vandal-Resistant Screws **-FM**= Front Mounted heads **-3CP**= 120V Cord & Plug, 3 wire, 3ft long[3] [1] -ID & -IDNA include a time delay feature that can be enabled/disabled in the field or set by the factory by including -ID-TD* or -IDNA-TD* [2] Consult your sales representative [3] -3CP custom lengths available. Consult your sales representative

EXAMPLE: 2MCG4/ELF3-M6-M-ID

PG & P12G SERIES

Steel Housing
6V up to 54W & 12V-54W Capacities
Lead-Calcium battery

FEATURES

Housing
- 20 gauge steel housing with removable front access panel
- Corrosion-resistant baked enamel mist white finish standard, black optional
- Provision for mounting up to 3 lighting heads
- Various choices of lighting head styles and lamp types

Mounting
- Wall Mount
- 1/2'"conduit knock-outs, rear keyhole slots and universal knock-outs to mount to any standard 4" junction box

Electronics
- Automatic, temperature compensated, pulse-type charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection is provided
- Battery lock-out prevents battery discharge during installation
- Fused output circuit
- Input: 120/277 VAC, 60Hz 0.3/0.15A

Improved Diagnostics option
- Units equipped with Improved Diagnostics shall self-test, by simulating a power failure, in accordance with NFPA101, Life Safety Code one minute monthly, 30 minutes every six months and 90 minutes annually. For complete information refer to page 8.

NEXUS® option
- Units equipped with NEXUS® self-testing monitoring system circuitry shall self-test, in accordance with NFPA101 Life Safety Code for a minimum of 30 seconds monthly, 30 minutes every six months and 90 minutes annually as well as keep a history of all testing logs, plus feature real-time diagnostics, and provide the exact fixture location while notifying service personnel of the status of the fixture via email. For complete information refer to page 4-5.

Controls
- Red charger monitor LED indicates charging of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allows for quick operational check of entire system

Choice of Sealed Maintenance-Free Battery
- 6V or 12V Lead-Calcium battery

Approvals
- UL 924 Standard

Warranty (subject to proper installation and maintenance)
- Unit has a three year full warranty (excluding lamps and fuses)[1]
- Lead-Calcium battery has a three year full, plus five year pro-rata warranty

[1] For LED lamps warranty, refer to page 168 paragraph 3.2

ACCESSORIES (Order as a separate item)

Wire Guard	**WG2-L**
Mounting Platform	**MP-PQA**

HEAD STYLE WITH LAMP TYPE CHOICES

LAMP TYPE	HEAD STYLE				
	ELF645 (pg.108)	**ELF2** (pg.105)	**ELF3** (pg.106)	**DR1130** (pg.104)	**ELF623** (pg.107)
Wedge Based Incandescent	X	X			X
Bi-Pin Halogen	X	X			X
PAR36 Sealed Beam Incand.	X				
PAR36 Sealed Beam Halogen	X				
MR16 Halogen			X	X	
MR16 LED			X	X	

SPECIFICATIONS

Supply and install **Lightalarms® PG, P12G** Series.

The emergency lighting unit shall be a self-contained fixture including a sealed maintenance-free Lead-Calcium battery of 6V or 12V, of wattage as specified on the unit rating chart. The unit shall supply the rated wattage load for a minimum of 90 minutes to 87-1/2% of rated battery voltage. The unit shall be rated 120/277VAC, 60Hz and be UL 924 listed.

The unit charger shall utilize an integrated circuit which samples the battery in relation to its temperature, state of charge and input voltage fluctuations. The charger shall be current limited, temperature compensated, short-circuit protected and reverse polarity protected. The unit shall be furnished with an electronic lockout circuit which will connect the battery when the AC circuit is activated, and an electronic brownout circuit which will activate the unit when utility power dips below 80-85% of nominal voltage. A low voltage battery protection circuit shall be provided and will disconnect the load and circuitry from the battery when it reaches 87-1/2% of its nominal voltage. The unit shall be capable of full recharge in compliance with UL 924 specifications. The unit shall be furnished with sealed dust-tight relay, a test switch and dual diagnostic LED indicator lights (hi-charge and AC pilot). The cabinet shall be 20 gauge steel with a removable front panel. Unit shall have 1/2" conduit knock-outs, rear keyhole slots and universal knock-outs to mount to any standard 4" junction box with provision for mounting up to 3 heads on top of cabinet.

Units specified with Improved Diagnostics (audible or non-audible) will continuously monitor every critical function of the unit, attached remote lighting heads and/or attached AC/DC Exit Signs. Operational status of the battery, charger and lamps are indicated by individual LED status indicators. Once a malfunction is detected, if audible, a high-pitch audible alarm will sound, and the appropriate LED status indicator will illuminate alerting of the unit malfunction. If non-audible, only the LED status indicator will illuminate alerting of the unit malfunction. The microcontroller shall automatically self-test, by simulating a power failure, in accordance with NFPA101, Life Safety Code for a minimum of one minute monthly, 30 minutes every six months and 90 minutes annually

Every **PG, P12G** Series unit shall be fully warranted for three years, subject to proper installation and maintenance.

Unit shall be **Lightalarms®** catalog number_____.

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

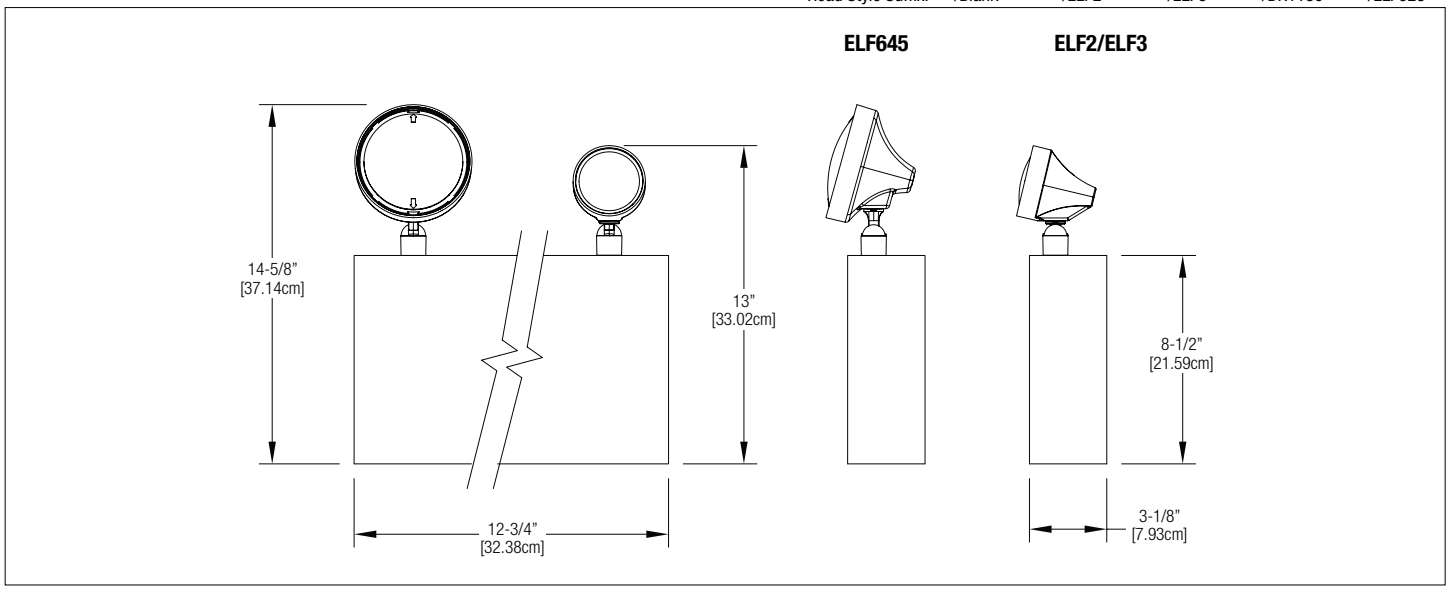
nexus

Combines reliability, versatility, performance into an aesthetically pleasing design

Available Head Style Choices:	ELF645	ELF2	ELF3	DR1130	ELF623
Head Style Suffix:	/Blank	/ELF2	/ELF3	/DR1130	/ELF623

DIMENSIONS

Dimensions are approximate and subject to change.



POWER CONSUMPTION / UNIT RATING CHART

SERIES	DC SPECS						AC SPECS	
	BATTERY TYPE	DC VOLTAGE	87.5% BATTERY CAPACITY (IN WATTS)[1]				UNITS DUAL VOLTAGE[2]	CURRENT MAXIMUM
			90 MIN.	2 HRS.	3 HRS.	4 HRS.		
PG1	Lead-Calcium	6V	18	15	0	0	120VAC 277VAC	.25A .15A
PG2		6V	54	36	27	18		
P12G1		12V	54	36	27	18		

[1] National Electrical Code Specification

[2] All units 120/277 dual voltage, information based on wiring to specific voltage type

ORDERING FORMAT

# OF HEADS	SERIES/CAPACITY	HEAD STYLE	LAMP TYPE	HOUSING COLOR	OPTIONS
0= No head **1**= One head **2**= Two heads **3**= Three heads	**PG1**= 6V-18W **PG2**= 6V-54W **P12G1**= 12V-54W	**/Blank**= ELF645 (PAR36, Plastic) **/ELF2**= ELF2 (PAR18, Plastic) **/ELF3**= ELF3 (MR16, Plastic) **/DR1130**= DR1130 (MR16, Metal) **/ELF623**= ELF623 (Square, Plastic)	**Add lamp suffix to indicate lamp type, voltage and wattage.** For available Lamp Types within a specified Head Style, refer to that Head Style page for proper lamp suffix with **Blank (ELF645)**, page 108 with **ELF2**, page 105 with **ELF3**, page 106 with **DR1130**, page 104 with **ELF623**, page 107 **Lamp Type MUST:** 1) Match Battery Voltage 2) Total of all lamps wattage must not exceed battery watt capacity for 90 min.	**-M**= Mist White **-B**= Black	**Blank**= No Options **-ID**= Improved Diagnostics (audible)[1] **-IDNA**= Improved Diagnostics (non audible)[1] **-NEX**= Nexus® Wired Compatible[2] **-NEXRF**= Nexus® Wireless Compatible[2] **-T1**= Time Delay (5 minute) **-T2**= Time Delay (10 minute) **-T3**= Time Delay (15 minute) **-A**= Ammeter[3] **-V**= Voltmeter[3] **-PTS**= Photocell Test Switch **-DS**= Lamp Disconnect Switch **-VS**= Vandal-Resistant Screws **-3CP**= 120V Cord & Plug, 3 wire, 3ft long[4] [1] -ID & -IDNA include a time delay feature that can be enabled/disabled in the field or set by the factory by including -ID-TD* or -IDNA-TD* [2] Consult your sales representative [3] -A & -V not available with -ID, -IDNA, -NEX, -NEXRF option [4] -3CP custom length available. Consult your sales representative

EXAMPLE: PG1/LH5-M

PN & P12N SERIES

Steel Housing
6V-25W & 12V up to 72W Capacities
Nickel-Cadmium battery

FEATURES

Housing

- 20 gauge steel housing with removable front access panel
- Corrosion-resistant baked enamel mist white finish standard, black optional
- Provision for mounting up to 3 lighting heads
- Various choices of lighting head styles, head mounting and lamp types

Mounting

- Wall Mount
- 1/2" conduit knock-outs, rear keyhole slots and universal knock-outs to mount to any standard 4" junction box

Electronics

- Automatic, temperature compensated, pulse-type charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection is provided
- Battery lock-out prevents battery discharge during installation
- Fused output circuit
- Input: 120/277 VAC, 60Hz 0.3/0.15A

Improved Diagnostics option

- Units equipped with Improved Diagnostics shall self-test, by simulating a power failure, in accordance with NFPA101, Life Safety Code one minute monthly, 30 minutes every six months and 90 minutes annually. For complete information refer to page 8.

Controls

- Red charger monitor LED indicates charging of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allows for quick operational check of entire system

Choice of Sealed Maintenance-Free Battery

- 6V or 12V Nickel-Cadmium battery

Approvals

- UL 924 Standard

Warranty (subject to proper installation and maintenance)

- Unit has a three year full warranty (excluding LED lamps and fuses)[1]
- Nickel-Cadmium battery has a five year full, plus five year pro-rata warranty

[1] For LED lamps warranty, refer to page 168 paragraph 3.2

ACCESSORIES (Order as a separate item)

Wire Guard (A cabinet)	**WG2-L**
Wire Guard (B cabinet)	**WG3-L**
Mounting Platform	**MP-PQA**

HEAD STYLE WITH LAMP TYPE CHOICES

LAMP TYPE	HEAD STYLE				
	ELF645 (pg.108)	**ELF2** (pg.105)	**ELF3** (pg.106)	**DR1130** (pg.104)	**ELF623** (pg.107)
Wedge Based Incandescent	X	X			X
Bi-Pin Halogen	X	X			X
MR16 Halogen			X	X	
MR16 LED			X	X	

SPECIFICATIONS

Supply and install **Lightalarms® PN, P12N** Series. The emergency lighting unit shall be a self-contained fixture including a sealed maintenance-free Nickel-Cadmium battery of 6V or 12V of volt wattage as specified on the unit rating chart. The unit shall supply the rated wattage load for a minimum of 90 minutes to 87-1/2% of rated battery voltage. The unit shall be rated 120/277VAC, 60Hz and be UL 924 listed.

The unit charger shall utilize an integrated circuit which samples the battery in relation to temperature, state of charge and input voltage fluctuations. The charger shall be current limited, temperature compensated, short-circuit protected and reverse polarity protected. The unit shall be furnished with an electronic lockout circuit which will connect the battery when the AC circuit is activated, and an electronic brownout circuit which will activate the unit when utility power dips below 80-85% of nominal voltage. A low voltage battery protection circuit shall be provided and will disconnect the load and circuitry from the battery when it reaches 87-1/2% of its nominal voltage. The unit shall be capable of full recharge in compliance with UL 924 specifications. The unit shall be furnished with sealed dust-tight relay, a test switch and dual diagnostic LED indicator lights (hi-charge and AC pilot). The cabinet shall be 20 gauge steel with a removable front panel. Unit shall have 1/2" conduit knock-outs, rear keyhole slots and universal knock-outs to mount to any standard 4" junction box with provision for mounting up to 3 heads on top of cabinet.

Units specified with Improved Diagnostics (audible or non-audible) will continuously monitor every critical function of the unit, attached remote lighting heads and/or attached AC/DC Exit Signs. Operational status of the battery, charger and lamps are indicated by individual LED status indicators. Once a malfunction is detected, if audible, a high-pitch audible alarm will sound, and the appropriate LED status indicator will illuminate alerting of the unit malfunction. If non-audible, only the LED status indicator will illuminate alerting of the unit malfunction. The microcontroller shall automatically self-test, by simulating a power failure, in accordance with NFPA101 Life Safety Code for one minute monthly, 30 minutes every six months and 90 minutes annually

Every **PN, P12N** Series unit shall be fully warranted for three years, subject to proper installation and maintenance.

Unit shall be **Lightalarms®** catalog number_____.

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

nexus

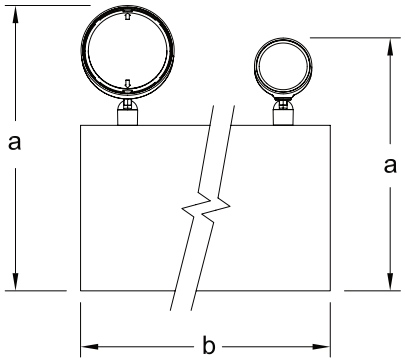
Combines reliability, versatility, performance into a aesthetically pleasing design

Available Head Style Choices: ELF645, ELF2, ELF3, DR1130, ELF623

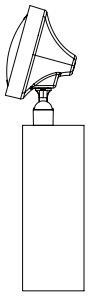
Head Style Suffix: /Blank, /ELF2, /ELF3, /DR1130, /ELF623

DIMENSIONS

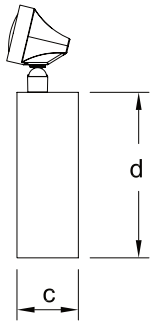
Dimensions are approximate and subject to change.



ELF645



ELF2/ELF3



25W and 50W units use A Cabinet dimensions
72W unit use B Cabinet dimensions

CABINET	DIMENSIONS			
	a	**b**	**c**	**d**
A	14-5/8" (37.14cm) // 13" (33.02cm)	12-3/4" (32.38cm)	3-1/8" (7.93cm)	8-1/2" (21.59cm)
B	16-3/8" (41.59cm) // 14-3/4" (37.46cm)	16-1/8" (40.95cm)	5-7/16" (13.81cm)	10-1/4" (26.03cm)

POWER CONSUMPTION / UNIT RATING CHART

SERIES	DC SPECS						AC SPECS	
	BATTERY TYPE	DC VOLTAGE	87.5% BATTERY CAPACITY (IN WATTS)[1]				UNITS DUAL VOLTAGE[2]	CURRENT MAXIMUM
			90 MIN.	2 HRS.	3 HRS.	4 HRS.		
PN1	Nickel-Cadmium	6V	25	20	14	10	120VAC 277VAC	.3A .15A
PN2		6V	50	36	25	18		
P12N2		12V	72	60	50	38		

[1] National Electrical Code Specification

[2] All units 120/277 dual voltage, information based on wiring to specific voltage type

ORDERING FORMAT

# OF HEADS	SERIES/ CAPACITY	HEAD STYLE	LAMP TYPE	HOUSING COLOR	OPTIONS
0= No head **1**= One head **2**= Two heads **3**= Three heads	**PN1**= 6V-25W **P12N1**= 12V-50W **P12N2**= 12V-72W	**/Blank**= ELF645 (PAR36, Plastic) **/ELF2**= ELF2 (PAR18, Plastic) **/ELF3**= ELF3 (MR16, Plastic) **/DR1130**= DR1130 (MR16, Metal) **/ELF623**= ELF623 (Square, Plastic)	**Add lamp suffix to indicate lamp type, voltage and wattage.** For available Lamp Types within a specified Head Style, refer to that Head Style page for proper lamp suffix with **Blank (ELF645)**, page 108 with **ELF2**, page 105 with **ELF3**, page106 with **DR1130**, page 104 with **ELF623**, page 107 **Lamp Type MUST:** 1) Match Battery Voltage 2) Total of all lamps wattage must not exceed battery watt capacity for 90 min. 3) Sealed Beams not compatible with Nickel-Cadmium battery	**-M**= Mist White **-B**= Black	**Blank**= No Options **-ID**= Improved Diagnostics (audible)[1] **-IDNA**= Improved Diagnostics (non audible)[1] **-NEX**= Nexus® Wired Compatible[2] **-NEXRF**= Nexus® Wireless Compatible[2] **-T1**= Time Delay (5 minute) **-T2**= Time Delay (10 minute) **-T3**= Time Delay (15 minute) **-A**= Ammeter[3] **-V**= Voltmeter[3] **-PTS**= Photocell Test Switch **-DS**= Lamp Disconnect Switch **-VS**= Vandal-Resistant Screws **-3CP**= 120V Cord & Plug, 3 wire, 3ft long[4]

[1] -ID & -IDNA include a time delay feature that can be enabled/ disabled in the field or set by the factory by including -ID-TD* or -IDNA-TD*

[2] Consult your sales representative

[3] -A & -V not available with -ID, -IDNA, -NEX, -NEXRF option

[4] -3CP custom lengths available. Consult your sales representative

EXAMPLE: 2P12N2/L9-M-ID


Shown with ELF645 heads

PQ & P12Q SERIES

Steel Housing
6V up to 200W & 12V up to 200W Capacities
Lead-Calcium battery

FEATURES

Housing
- 20 gauge steel housing with removable front access panel
- Corrosion-resistant baked enamel mist white finish standard, black optional
- Provision for mounting up to 3 lighting heads
- Various choices of lighting head styles and lamp types

Mounting
- Wall Mount
- 1/2" conduit knock-outs, rear keyhole slots and universal knock-outs to mount to any standard 4" junction box

Electronics
- Automatic, temperature compensated, pulse-type charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection is provided
- Battery lock-out prevents battery discharge during installation
- Fused output circuit

Improved Diagnostics option
- Units equipped with Improved Diagnostics shall self-test, by simulating a power failure, in accordance with NFPA101, Life Safety Code one minute monthly, 30 minutes every six months and 90 minutes annually. For complete information refer to page 8.

NEXUS® option
- Units equipped with NEXUS® self-testing monitoring system circuitry shall self-test, in accordance with NFPA101 Life Safety Code for a minimum of 30 seconds monthly, 30 minutes every six months and 90 minutes annually as well as keep a history of all testing logs, plus feature real-time diagnostics, and provide the exact fixture location while notifying service personnel of the status of the fixture via email. For complete information refer to page 4-5.

Controls
- Red charger monitor LED indicates charging of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allows for quick operational check of entire system

Choice of Sealed Maintenance-Free Battery
- 6V or 12V Lead-Calcium battery

Approvals
- UL 924 Standard

Warranty (subject to proper installation and maintenance)
- Unit has a three year full warranty (excluding lamps and fuses)[1]
- Lead-Calcium battery has a three year full, plus three year pro-rata warranty

[1] For LED lamps warranty, refer to page 168 paragraph 3.2

ACCESSORIES (Order as a separate item)

Wire Guard	**WG3-L**
Mounting Platform (B cabinet)	**MP-PQA**
Mounting Platform (C cabinet)	**MP-PQB**

SPECIFICATIONS

Supply and install **Lightalarms® PQ, P12Q** Series.

The emergency lighting unit shall be a self-contained fixture including a sealed maintenance-free Nickel-Cadmium battery of 6V or 12V of wattage as specified on the unit rating chart. The unit shall supply the rated wattage load for a minimum of 90 minutes to 87-1/2% of rated battery voltage. The unit shall be rated 120/277VAC, 60Hz and be UL 924 listed.

The unit charger shall utilize an integrated circuit which samples the battery in relation to temperature, state of charge and input voltage fluctuations. The charger shall be current limited, temperature compensated, short-circuit protected and reverse polarity protected. The unit shall be furnished with an electronic lockout circuit which will connect the battery when the AC circuit is activated, and an electronic brownout circuit which will activate the unit when utility power dips below 80-85% of nominal voltage. A low voltage battery protection circuit shall be provided and will disconnect the load and circuitry from the battery when it reaches 87-1/2% of its nominal voltage. The unit shall be capable of full recharge in compliance with UL 924 specifications. The unit shall be furnished with sealed dust-tight relay, a test switch and dual diagnostic LED indicator lights (hi-charge and AC pilot). The cabinet shall be 20 gauge steel with a removable front panel. Unit shall have 1/2" conduit knock-outs, rear keyhole slots and universal knock-outs to mount to any standard 4" junction box with provision for mounting up to 3 heads on top of cabinet.

Units specified with Improved Diagnostics (audible or non-audible) will continuously monitor every critical function of the unit, attached remote lighting heads and/or attached AC/DC Exit Signs. Operational status of the battery, charger and lamps are indicated by individual LED status indicators. Once a malfunction is detected, if audible, a high-pitch audible alarm will sound, and the appropriate LED status indicator will illuminate alerting of the unit malfunction. If non-audible, only the LED status indicator will illuminate alerting of the unit malfunction. The microcontroller shall automatically self-test, by simulating a power failure, in accordance with NFPA101 Life Safety Code for one minute monthly, 30 minutes every six months and 90 minutes annually

Every **PQ, P12Q** Series unit shall be fully warranted for three years, subject to proper installation and maintenance.

Unit shall be **Lightalarms®** catalog number_____.

HEAD STYLE WITH LAMP TYPE CHOICES

LAMP TYPE	HEAD STYLE				
	ELF645 (pg.108)	**ELF2** (pg.105)	**ELF3** (pg.106)	**DR1130** (pg.104)	**ELF623** (pg.107)
Wedge Based Incandescent	X	X			X
Bi-Pin Halogen	X	X			X
PAR36 Sealed Beam Incand.	X				
PAR36 Sealed Beam Halogen	X				
MR16 Halogen			X	X	
MR16 LED			X	X	

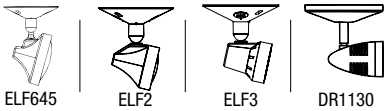
TYPE _____

CATALOG # _____

NOTES _____

Performance along with the extra battery capacity to power up to two 50W mounted heads or numerous matching remote heads

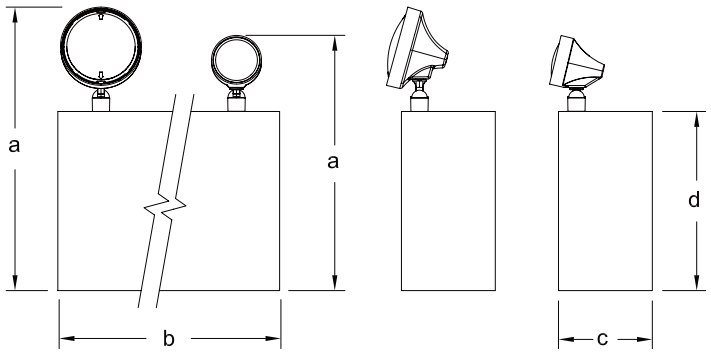

shown with ELF3 heads and LED lamps



Available Head Style Choices:	ELF645	ELF2	ELF3	DR1130
Head Style Suffix:	/Blank	/ELF2	/ELF3	/DR1130

DIMENSIONS

Dimensions are approximate and subject to change.



100W unit use B Cabinet dimensions
200W unit use C Cabinet dimensions

CABINET	DIMENSIONS			
	a	**b**	**c**	**d**
B	16-3/8" (41.59cm)// 14-3/4"	16-1/8" (40.95cm)	5-7/16" (13.81cm)	10-1/4" (26.03cm)
C	18-3/8" (46.67cm)// 16 3/4" (42.54cm)	16-1/2" (41.91cm)	7-1/4" (18.41cm)	12-1/4" (32.38cm)

POWER CONSUMPTION / UNIT RATING CHART

SERIES	DC SPECS						AC SPECS	
	BATTERY TYPE	DC VOLTAGE	87.5% BATTERY CAPACITY (IN WATTS)[1]				UNITS DUAL VOLTAGE[2]	CURRENT MAXIMUM
			90 MIN.	2 HRS.	3 HRS.	4 HRS.		
PQ2	Lead-Calcium	6V	100	75	50	36	120VAC 277VAC	.3A .15A
PQ3		6V	200	150	100	72		
P12Q1		12V	100	75	50	36		
P12Q2		12V	200	150	100	72		

[1] National Electrical Code Specification
[2] All units 120/277 dual voltage, information based on wiring to specific voltage type

ORDERING FORMAT

# OF HEADS	SERIES/CAPACITY	HEAD STYLE	LAMP TYPE	COLOR	OPTIONS
0= No heads **1**= One head **2**= Two heads **3**= Three heads	**PQ2**= 6V-100W **PQ3**= 6V-200W **P12Q1**= 12V-100W **P12Q2**= 12V-200W	**/Blank**= ELF645 (PAR36, Plastic) **/ELF2**= ELF2 (PAR18, Plastic) **/ELF3**= ELF3 (MR16, Plastic) **/DR1130**= DR1130 (MR16, Metal)	**Add lamp suffix to indicate lamp type, voltage and wattage.** For available Lamp Types within a specified Head Style, refer to that Head Style page for proper lamp suffix with **Blank (ELF645)**, page 108 with **ELF2**, page 105 with **ELF3**, page 106 with **DR1130**, page 104 with **ELF623**, page 107 **Lamp Type MUST:** 1) Match Battery Voltage 2) Total of all lamps wattage must not exceed battery watt capacity for 90 min.	**-M**= Mist White **-B**= Black	**Blank**= No Options **-ID**= Improved Diagnostics (audible)[1] **-IDNA**= Improved Diagnostics (non audible)[1] **-NEX**= Nexus® Wired Compatible[2] **-NEXRF**= Nexus® Wireless Compatible[2] **-T1**= Time Delay (5 minute) **-T2**= Time Delay (10 minute) **-T3**= Time Delay (15 minute) **-A**= Ammeter[3] **-V**= Voltmeter[3] **-DS**= Lamp Disconnect Switch **-VS**= Vandal-Resistant Screws **-3CP**= 120V Cord & Plug, 3 wire, 3ft long[4]

[1] -ID & -IDNA include a time delay feature that can be enabled/disabled in the field or set by the factory by including -ID-TD* or -IDNA-TD*. Not available with P12Q2 series
[2] Consult your sales representative
[3] -A & -V not available with -ID, -IDNA, -NEX, -NEXRF option
[4] -3CP & -3CP277 custom lengths available. Consult your sales representative

EXAMPLE: 2P12Q1/DR1130M50-M


shown with ELF645 heads

S12E & S24E SERIES

Steel Housing
12V up to 400W & 24V-400W Capacities
Lead-Calcium battery

FEATURES

Housing
- 20 gauge steel housing with removable front access panel
- Corrosion-resistant baked enamel gray finish standard, mist white and black optional
- Provision for mounting up to 3 lighting heads
- Various choices of lighting head styles and lamp types

Mounting
- Wall Mount
- 1/2" conduit knock-outs, rear keyhole slots and universal knock-outs to mount to any standard 4" junction box

Electronics
- Automatic, temperature compensated, pulse-type charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection is provided
- Battery lock-out prevents battery discharge during installation
- Fused output circuit
- Input: 120/277 VAC, 60Hz 0.3/0.15A

Improved Diagnostics option
- Units equipped with Improved Diagnostics shall self-test, by simulating a power failure, in accordance with NFPA101, Life Safety Code one minute monthly, 30 minutes every six months and 90 minutes annually. For complete information refer to page 8.

NEXUS® option
- Units equipped with NEXUS® self-testing monitoring system circuitry shall self-test, in accordance with NFPA101 Life Safety Code for a minimum of 30 seconds monthly, 30 minutes every six months and 90 minutes annually as well as keep a history of all testing logs, plus feature real-time diagnoses, and provide the exact fixture location while notifying service personnel of the status of the fixture via email. For complete information refer to page 4-5.

Controls
- Red charger monitor LED indicates charging of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allows for quick operational check of entire system

Choice of Sealed Maintenance-Free Battery
- 12V or 24V Lead-Calcium battery

Approvals
- UL 924 Standard

Warranty (subject to proper installation and maintenance)
- Unit has a three year full warranty (excluding lamps and fuses)[1]
- Lead-Calcium battery has a three year full, plus three year pro-rata warranty

[1] For LED lamps warranty, refer to page 168 paragraph 3.2

ACCESSORIES (Order as a separate item)

Wire Guard (S12E4)	**WG3-L**
Wire Guard (S12E5/S12E6/S24E4)	**WG4-L**
Mounting Platform (S12E4)	**MP-A**
Mounting Platform (S12E5/S12E6/S24E4)	**MD-12**
Mounting Bracket (S12E4/S24E4)	**MB-A**

SPECIFICATIONS

Supply and install **Lightalarms® S12E, S24E** Series.

The emergency lighting unit shall be a self-contained fixture including a sealed maintenance-free Lead-Calcium battery of 12V or 24V of wattage as specified on the unit rating chart. The unit shall supply the rated wattage load for a minimum of 90 minutes to 87-1/2% of rated battery voltage. The unit shall be rated 120/277VAC, 60Hz and be UL924 listed.

The unit charger shall utilize an integrated circuit which samples the battery in relation to temperature, state of charge and input voltage fluctuations. The charger shall be current limited, temperature compensated, short-circuit protected and reverse polarity protected. The unit shall be furnished with an electronic lockout circuit which will connect the battery when the AC circuit is activated, and an electronic brownout circuit which will activate the unit when utility power dips below 80-85% of nominal voltage. A low voltage battery protection circuit shall be provided and will disconnect the load and circuitry from the battery when it reaches 87-1⁄2% of its nominal voltage. The unit shall be capable of full recharge in compliance with UL924 specifications. The unit shall be furnished with sealed dust-tight relay, a test switch and dual diagnostic LED indicator lights (hi-charge and AC pilot). The cabinet shall be 20 gauge steel with a removable front panel. Unit shall have 1/2" conduit knock-outs, rear keyhole slots and universal knock-outs to mount to any standard 4" junction box with provision for mounting up to 3 heads on top of cabinet.

Units specified with Improved Diagnostics (audible or non-audible) will continuously monitor every critical function of the unit, attached remote lighting heads and/or attached AC/DC Exit Signs. Operational status of the battery, charger and lamps are indicated by individual LED status indicators. Once a malfunction is detected, if audible, a high-pitch audible alarm will sound, and the appropriate LED status indicator will illuminate alerting of the unit malfunction. If non-audible, only the LED status indicator will illuminate alerting of the unit malfunction. The microcontroller shall automatically self-test, by simulating a power failure, in accordance with NFPA101 Life Safety Code for one minute monthly, 30 minutes every six months and 90 minutes annually.

Every **S12E, S24E** Series unit shall be fully warranted for three years, subject to proper installation and maintenance.

Unit shall be **Lightalarms®** catalog number_____.

HEAD STYLE WITH LAMP TYPE CHOICES

LAMP TYPE	HEAD STYLE				
	ELF645 (pg.108)	**ELF2** (pg.105)	**ELF3** (pg.106)	**DR1130** (pg.104)	**ELF623** (pg.107)
Wedge Based Incandescent	X	X			X
BI-Pin Halogen	X	X			X
PAR36 Sealed Beam Incand.	X				
PAR36 Sealed Beam Halogen	X				
MR16 Halogen			X	X	
MR16 LED			X	X	

TYPE _____

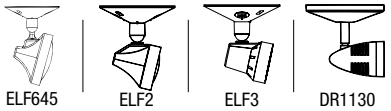
CATALOG # _____

_____

NOTES _____

_____

Suited for applications requiring high capacity for multiple remote capabilities or extended operating times

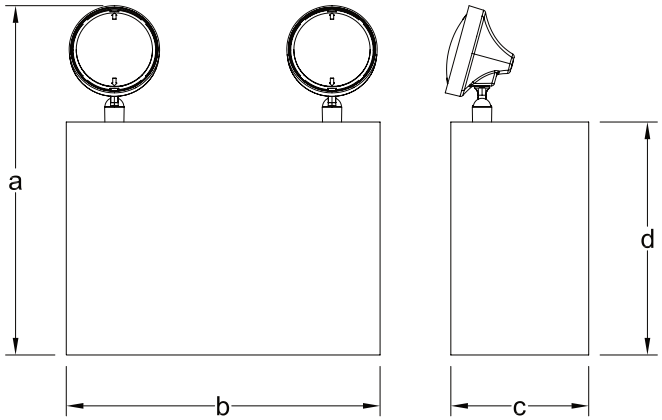


Available Head Style Choices: ELF645 | ELF2 | ELF3 | DR1130

Head Style Suffix: /Blank | /ELF2 | /ELF3 | /DR1130

DIMENSIONS

Dimensions are approximate and subject to change.



200W unit use C Cabinet dimensions
300W and 400W unit use D Cabinet dimensions

CABINET	DIMENSIONS			
	a	**b**	**c**	**d**
C	18-3/8" (46.67cm)	16-1/2" (41.91cm)	7-1/4" (18.41cm)	12-1/4" (32.38cm)
D	18-3/8" (46.67cm)	27" (68.58cm)	7-1/4" (18.41cm)	12-1/4" (32.38cm)

POWER CONSUMPTION / UNIT RATING CHART

SERIES	DC SPECS						AC SPECS	
	BATTERY TYPE	DC VOLTAGE	87.5% BATTERY CAPACITY (IN WATTS)[1]				UNITS DUAL VOLTAGE[2]	CURRENT MAXIMUM
			90 MIN.	2 HRS.	3 HRS.	4 HRS.		
S12E4	Lead-Calcium	12V	200	150	107	85	120VAC 277VAC	.3A .15A
S1245		12V	300	225	165	127		
S12E6		12V	400	300	214	170		
S24E4		24V	400	300	120	60		

[1] National Electrical Code Specification
[2] All units 120/277 dual voltage, information based on wiring to specific voltage type

ORDERING FORMAT

# OF HEADS	SERIES/ CAPACITY	HEAD STYLE	LAMP TYPE	FINISH	OPTIONS
0= No heads **1**= 1 head **2**= 2 heads **3**= 3 heads	**S12E4**= 12V-200W[1] **S12E5**= 12V-300W **S12E6**= 12V-400W **S24E4**= 24V-400W	**/Blank**= ELF645 (PAR36, Plastic) **/ELF2**= ELF2 (PAR18, Plastic) **/ELF3**= ELF3 (MR16, Plastic) **/DR1130**= DR1130 (MR16, Metal)	**Add lamp suffix to indicate lamp type, voltage and wattage.** For available Lamp Types within a specified Head Style, refer to that Head Style page for proper lamp suffix with **Blank (ELF645)**, page 108 with **ELF2**, page 105 with **ELF3**, page 106 with **DR1130**, page 104 with **ELF623**, page 107 **Lamp Type MUST:** 1) Match Battery Voltage 2) Total of all lamps wattage must not exceed battery watt capacity for 90 min.	**-G**= Gray **-M**= Mist White **-B**= Black	**Blank**= No Options **-ID**= Improved Diagnostics (audible)[1] **-IDNA**= Improved Diagnostics (non audible)[1] **-T1**= Time Delay (5 minute) **-T2**= Time Delay (10 minute) **-T3**= Time Delay (15 minute) **-A**= Ammeter[2] **-V**= Voltmeter[2] **-DS**= Lamp Disconnect Switch **-VS**= Vandal-Resistant Screws **-3CP**= 120V Cord & Plug, 3 wire, 3ft long[3]

[1] -ID & -IDNA include a time delay feature that can be enabled/ disabled in the field or set by the factory by including -ID-TD* or -IDNA-TD*
[2] -A & -V not available with -ID, -IDNA, -NEX, -NEXRF option
[3] -3CP & -3CP277 custom lengths available. Consult your sales representative

EXAMPLE: 2S12E4/L25-G

FG, F12G, FN, F12N & F24N SERIES

Weather & Corrosion-Resistant Housing
6V up to 100W, 12V up to 110W & 24V-100W Capacities
Lead-Calcium or Nickel-Cadmium battery

FEATURES

Housing

- Weather and Corrosion Resistant
- Molded gray high impact Thermoplastic case with hinged front access panel
- Oil, water and dust-tight construction, stainless steel hardware, single piece neoprene gasket and vented battery compartment
- Provision for mounting up to 2 lighting heads
- Various choices of lamp types

Mounting

- Wall Mount; external mounting feet are provided

Electronics

- Automatic, temperature compensated, pulse-type charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection is provided
- Battery lock-out prevents battery discharge during installation
- Fused output circuit

Improved Diagnostics option

- Units equipped with Improved Diagnostics shall self-test, by simulating a power failure, in accordance with NFPA101, Life Safety Code one minute monthly, 30 minutes every six months and 90 minutes annually. For complete information refer to page 8.

NEXUS® option

- Units equipped with NEXUS® self-testing monitoring system circuitry shall self-test, in accordance with NFPA101 Life Safety Code for a minimum of 30 seconds monthly, 30 minutes every six months and 90 minutes annually as well as keep a history of all testing logs, plus feature real-time diagnoses, and provide the exact fixture location while notifying service personnel of the status of the fixture via email. For complete information refer to page 4-5.

Controls

- Red charger monitor LED indicates charging of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allows for quick operational check of entire system

Choice of Sealed Maintenance-Free Battery

- 6V or 12V, Lead-Calcium battery
- 6V, 12V or 24V Nickel-Cadmium battery

Approvals

- UL 924 Standard

Warranty (subject to proper installation and maintenance)

- Unit has a three year full warranty (excluding lamps and fuses)[1]
- Lead-Calcium battery has a three year full, plus three year pro-rata warranty
- Nickel-Cadmium battery has a five year full, plus five year pro-rata warranty

[1] For LED lamps warranty, refer to page 168 paragraph 3.2

ACCESSORIES (Order as a separate item)

Wire Guard	**WG3-L**

SPECIFICATIONS

Supply and install **Lightalarms® FG, F12G, FN, F12N, F24N** Series.

The emergency lighting unit shall be a self-contained fixture including a sealed maintenance-free Lead-Calcium or Nickel-Cadmium battery of 6V, 12V or 24V, of wattage as specified in the unit rating chart. The unit shall supply the rated wattage load for a minimum of 90 minutes to 87-1/2% of rated battery voltage. The unit shall be rated 120/277VAC, 60Hz and be UL 924 listed.

The unit charger shall utilize an integrated circuit which samples the battery in relation to temperature, state of charge and input voltage fluctuations. The charger shall be current limited, temperature compensated, short-circuit protected and reverse polarity protected. The unit shall be furnished with an electronic lockout circuit which will connect the battery when the AC circuit is activated, and an electronic brownout circuit which will activate the unit when utility power dips below 80-85% of nominal voltage. A low voltage battery protection circuit shall be provided and will disconnect the load and circuitry from the battery when it reaches 87-1⁄2% of its nominal voltage. The unit shall be capable of full recharge in compliance with UL 924 specifications. The unit shall be furnished with sealed dust-tight relay, a test switch and dual diagnostic LED indicator lights (hi-charge and AC pilot). The cabinet shall be molded gray high impact Thermoplastic case with hinged front access panel featuring oil, water and dust-tight construction, stainless steel hardware, single piece neoprene gasket and vented battery compartment. Includes mounting feet and provision for mounting up to 2 heads on front access panel.

Units specified with Improved Diagnostics (audible or non-audible) will continuously monitor every critical function of the unit, attached remote lighting heads and/or attached AC/DC Exit Signs. Operational status of the battery, charger and lamps are indicated by individual LED status indicators. Once a malfunction is detected, if audible, a high-pitch audible alarm will sound, and the appropriate LED status indicator will illuminate alerting of the unit malfunction. If non-audible, only the LED status indicator will illuminate alerting of the unit malfunction. The microcontroller shall automatically self-test, by simulating a power failure, in accordance with NFPA101, Life Safety Code for one minute monthly, 30 minutes every six months and 90 minutes annually.

Every **FG, F12G, FN, F12N, F24N** Series unit shall be fully warranted for three years, subject to proper installation and maintenance.

Unit shall be **Lightalarms®** catalog number_____.

TYPE _____

CATALOG # _____

_____

NOTES _____

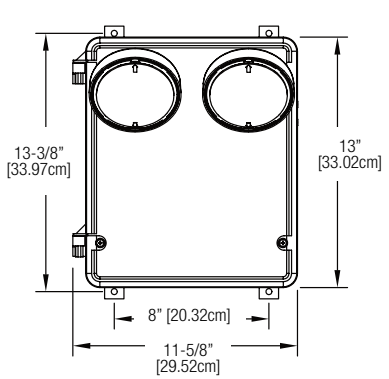
_____

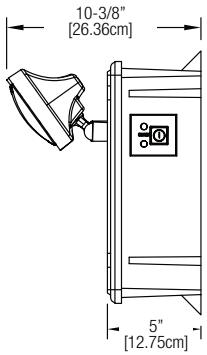
nexus id improved diagnostics UL

Designed for weather-resistant and industrial applications, especially for corrosive atmospheres

DIMENSIONS

Dimensions are approximate and subject to change.





POWER CONSUMPTION / UNIT RATING CHART

SERIES	DC SPECS						AC SPECS	
	BATTERY TYPE	DC VOLTAGE	87.5% BATTERY CAPACITY (IN WATTS)[1]				UNITS DUAL VOLTAGE[2]	CURRENT MAXIMUM
			90 MIN.	2 HRS.	3 HRS.	4 HRS.		
FG1	Lead-Calcium	6V	50	36	25	12	120VAC 277VAC	.3A .15A
FG2		6V	100	75	50	24		
F12G1		12V	50	36	25	12		
F12G2		12V	100	75	50	24		
F12N1	Nickel-Cadmium	12V	50	36	18	10		
F12N2		12V	100	75	37	20		
F24N2		24V	100	75	37	20		

[1] National Electrical Code Specification

[2] All units 120/277 dual voltage, information based on wiring to specific voltage type

ORDERING FORMAT

# OF HEADS	SERIES/CAPACITY	LAMP TYPE	OPTIONS
0= No head **1**= One head **2**= Two heads	**Lead-Calcium battery** **FG1**= 6V-50W **FG2**= 6V-100W **F12G1**= 12V-54W **F12G2**= 12V-100W **Nickel-Cadmium battery** **F12N1**= 12V-50W **F12N2**= 12V-100W **F24N2**= 24V-100W	**Add lamp suffix to indicate lamp type, voltage and wattage.** For available Lamp Types within an **ELF647** Head Style Weather-Proof, refer to that Head Style page for proper lamp suffix see page 109 **Lamp Type MUST:** 1) Match Battery Voltage 2) Total of all lamps wattage must not exceed battery watt capacity for 90 min.	**Blank**= No Options **-ID**= Improved Diagnostics (audible)[1,2] **-IDNA**= Improved Diagnostics (non audible)[1,2] **-NEX**= Nexus® Wired Compatible[3] **-NEXRF**= Nexus® Wireless Compatible[3] **-T1**= Time Delay (5 minute) **-T2**= Time Delay (10 minute) **-T3**= Time Delay (15 minute) **-A**= Ammeter[4] **-V**= Voltmeter[4] **-DS**= Lamp Disconnect Switch **-VS**= Vandal-Resistant Screws **-3CP**= 120V Cord & Plug, 3 wire, 3ft long[5]

[1] -ID & -IDNA include a time delay feature that can be enabled/disabled in the field or set by the factory by including -ID-TD* or -IDNA-TD*

[2] -ID & -IDNA not available with F12N2 & F24N2

[3] Consult your sales representative

[4] -A & -V not available with -ID, -IDNA, -NEX, -NEXRF option

[5] -3CP & -3CP277 custom lengths available . Consult your sales representative

EXAMPLE: 2F12G1/L9-ID

SEVERE™ V SERIES

NEMA-4X, NSF, Vandal-Resistant Housing
6V-18W & 12V up to 60W Capacities
Lead-Calcium, Nickel-Cadmium or Nickel-Metal Hydride battery

FEATURES

Housing
- NEMA 4X; suited for industrial, hose down, food processing and harsh environments
- Die-cast aluminum back plate with internal Thermoplastic housing
- Vandal-resistant UV stabilized polycarbonate cover
- Fully gasketed between die-cast back plate and polycarbonate cover
- Phillips head or Tamper-proof screws
- Available in three colors: white, black or gray

Mounting
- Wall Mount on a 4" junction box, not intended for ceiling mount
- Universal bracket accessory available for beams or superstrut mounting

Choice of Lamp Type
- Two 6V or 12V-6W, 12W or 20W each MR16 Halogen lamps
- Two 6V or 12V-4W, 12V-5W or 12V-6W each MR16 LED lamps

Electronics
- Standard, fully automatic Improved Diagnostic Micro-controller based circuitry detects and indicates any malfunction or failure of the battery, charger circuitry, or lamps
- External LED signals a service alarm, four internal diagnostic LED's
- Incorporates battery lockout and brownout circuits, and low voltage disconnection, protects the unit from over-current, short-circuit, and reverse polarity

Improved Diagnostics
- Units equipped with Improved Diagnostics shall self-test, by simulating a power failure, in accordance with NFPA101, Life Safety Code one minute monthly, 30 minutes every six months and 90 minutes annually. For complete information refer to page 8.

NEXUS® option
- Units equipped with NEXUS® self-testing monitoring system circuitry shall self-test, in accordance with NFPA101 Life Safety Code for a minimum of 30 seconds monthly, 30 minutes every six months and 90 minutes annually as well as keep a history of all testing logs, plus feature real-time diagnoses, and provide the exact fixture location while notifying service personnel of the status of the fixture via email. For complete information refer to page 4-5.

Controls
- Red LED indicates if unit requires service
- Green AC-ON LED indicates AC power is on
- Magnetic test switch allows for quick operational check of entire system

Choice of Sealed Maintenance-Free Battery
- 6V or 12V Lead-Calcium battery
- 12V Nickel-Cadmium battery listed for Damp and wet locations (+10°C to +40°C/+50°F to +104°F)
- 12V Nickel-Metal Hydride battery

Approvals
- UL 924 Standard
- UL listed for wet and Damp locations
- UL listed for cold weather (-40°C to +40°C/-40°F to +104°F) option
- NSF certified for use in food processing plants
- NEMA 4X Rated

Warranty (subject to proper installation and maintenance)
- Unit has a three year full warranty (excluding LED lamps and fuses)[1]
- Lead-Calcium battery, three year full, plus three year pro-rata warranty
- Nickel-Cadmium battery, five year full, plus five year pro-rata warranty
- Nickel-Metal Hydride battery, five year full, plus five year pro-rata warranty

[1] For LED lamps warranty, refer to page 168 paragraph 3.2

ACCESSORIES (Order as a separate item)

Bit for Tamper-proof Screws	**690.0454-L**
Universal Mounting Bracket	**PMK-L**

SPECIFICATIONS

Supply and install **Lightalarms®**, **Severe™ V** Series Emergency Battery Unit.

The unit shall be a self-contained fixture including a sealed maintenance-free 6V or 12V, Lead-Calcium or Nickel-Cadmium, or 12V, Nickel-Metal Hydride battery with wattage as specified on the unit rating chart. The unit shall be supplied with an Improved Diagnostic Micro-controller board rated wattage load for a minimum of 90 minutes to 87-1/2% of rated battery voltage. The unit shall be rated 120/277VAC, 60Hz and be UL 924 listed.

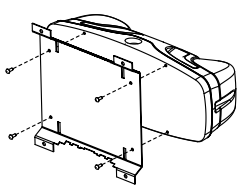
The charger shall continuously recharge the battery. When the battery is at full capacity, the charger will periodically pulse-charge the battery in stand-by mode. This pulse-type charger promotes long battery life and reduces the potential for grid corrosions. Its charge voltage is factory set to +/-1% tolerance and temperature compensated. The charger incorporates Lockout and Brownout Circuits, and Low Voltage Disconnection. It protects the unit from over-current, short-circuit, and reverse polarity.

This unit shall self-test for 1 minute monthly, 30 minutes on the 6th month and 90 minutes every 12 months. The unit shall be capable of full recharge in compliance with UL specifications. The unit shall be furnished with a magnetic test switch. A "Service Required" lamp shall be located near the test switch and flash when a fault is detected. A LED-based diagnostic display shall be located inside the equipment and shall identify the source of failure (battery, charger, circuitry, or lamps).

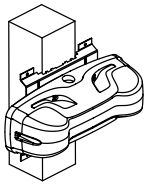
The unit shall include a die-cast aluminum back plate, an internal housing made of industrial grade Thermoplastic, a neoprene gasket and a UV stabilized polycarbonate lens. The front of the unit shall be protected with a clear cover constructed of heavy-duty vandal-resistant, UV stabilized polycarbonate lens, with a gasket between the lens and back plate, attached with Phillips head or tamper-proof screws. Emergency lights shall be fully adjustable and equipped with high efficiency MR16 Halogen or MR16 LED lamps as specified. The unit shall be NEMA-4X rated and designed specifically for high abuse areas, wet and Damp locations.

Unit shall be **Lightalarms®** catalog number_____.

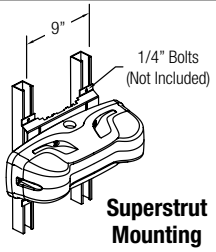
UNIVERSAL MOUNTING BRACKETS



PMK KIT (screws included)



Beam Mounting



Superstrut Mounting

The **Severe™ XV Series** Battery Unit is part of the **Severe™** family of NEMA-4X rated emergency lighting products. The **Severe™** family offers complete emergency lighting solutions for commercial and industrial environments where protecting against humidity, dust, water infiltration and the risk of vandalism are specification criteria.

Severe™ XV Exit Series
p.40

Severe™ XV Combo Series
p.42

Severe™ ELF650 Remote Series
p.111

nexus NEMA-4X NSF id improved diagnostics UL

TYPE _____

CATALOG # _____

_____

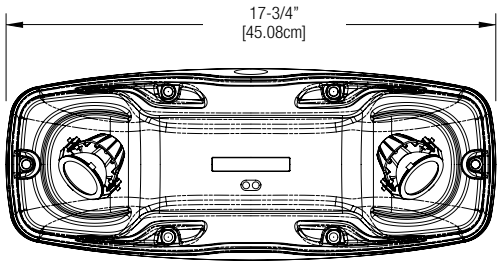
NOTES _____

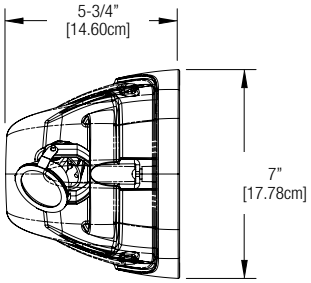
_____

For heavy-duty industrial environments, such as hose-down, food processing, or vandal-prone areas.

DIMENSIONS

Dimensions are approximate and subject to change.





POWER CONSUMPTION / UNIT RATING CHART

SERIES	DC SPECS						AC SPECS		
	BATTERY TYPE	DC VOLTAGE	87.5% BATTERY CAPACITY (IN WATTS)[1]				UNITS DUAL VOLTAGE[2]	CURRENT MAXIMUM	POWER MAXIMUM
			90 MIN.	2 HRS.	3 HRS.	4 HRS.			
VG1	Lead-Calcium	6V	18	12	-	-	120VAC 277VAC	.2A .11A	20W 20W
V12G1		12V	24	16	12	-			
V12G2		12V	36	24	20	14			
V12G3		12V	54	36	27	20			
V12G1-CW4	With cold weather option	12V	24	NOTE 3	-	-	120/227VAC	.4A/.3A	60W
V12G2-CW4		12V	36	NOTE 3	-	-		.7A/4A	100W
V12N1	Nickel-Cadmium	12V	24	16	12	-	120VAC 277VAC	.2A .11A	20W 20W
V12N2		12V	40	30	20	15			
V12H1	Nickel Metal Hydride	12V	60	40	30	20			

[1] National Electrical Code Specification
[2] All units 120/277 dual voltage, information based on wiring to specific voltage type
[3] Dependent on lower ambient temperatures

ORDERING FORMAT

# OF HEADS	SERIES	LAMP TYPE[1]	HOUSING COLOR	STANDARD DIAGNOSTICS	OPTIONS
2= Two heads	**Lead-Calcium battery** **VG1**= 6V-18W **V12G1**= 12V-24W **V12G2**= 12V-36W **V12G3**= 12V-54W **Nickel-Cadmium battery** **V12N1**= 12V-24W **V12N2**= 12V-40W **Nickel-Metal Hydride battery** **V12H1**= 12V-60W	**MR16 Halogen Lamp** **M6**= 6V-6W **M10**= 12V-10W **M12**= 12V-12W **MH20**= 12V-20W High Output **MR16 LED Lamp** **LD1**= 6V-4W **LD7**= 12V-4W **LD9**= 12V-5W **LD10**= 12V-6W **Lamp Type MUST:** 1) Match Battery Voltage 2) Total of all lamps wattage must not exceed battery watt capacity for 90 min. [1] No other lamp types available for this Series, for complete information on these lamp types refer to page 153.	**-B**= Black **-G**= Gray **-M**= White	**-D**= Improved Diagnostics (non audible)[1] [1] -D includes a time delay feature that can be enabled/disabled in the field or set by the factory by including -D-TD*	**Blank**= No Options **-DA**= Improved Diagnostics (audible)[1] **-NEX**= Nexus® Wired Compatible[2] **-NEXRF**= Nexus® Wireless Compatible[2] **-T1**= Time Delay (5 minute) **-T2**= Time Delay (10 minute) **-T3**= Time Delay (15 minute) **-CW4**= Cold Weather 40°F to 104°F (-40°C to 40°C)[3] [1] -DA includes a time delay feature that can be enabled/disabled in the field or set by the factory by including -D-TD* [2] -NEX & -NEXRF is CSA-US approved only. Consult your sales representative [3] -CW4 option only available with V12G1 & V12G2 models

EXAMPLE: 2V12G2/M12-B-D-CW4

SEVERE™ VH SERIES

Class I, Division 2 Housing
6V-18W & 12V up to 72W Capacities
Lead-Calcium battery

FEATURES

Housing
- Class I Division 2, Groups A, B, C and D
- Lamps shielded by a clear vandal-resistant polycarbonate cover
- Two fully tool-less adjustable glare-free MR16 lighting heads
- Front and Back plates are of a heavy duty 1/8 inch thick aluminum
- Stainless steel tamper-proof screws

Mounting:
- Surface Wall Mount Only
- Includes mounting lugs on each side of the housing
- Backplate included universal knock-outs to mount to any standard 4" junction box
- 1/2 inch Conduit knock-outs entry on both sides and top of housing

Choice of Lamp Type
- MR16 Halogen Lamp, 12V-12W or 12V-20W
- MR16 LED Lamp, 6V-4W, 12V-4W or 12V-5W

Electronics
- Micro-controller based charging circuit
- Automatic, temperature compensated, pulse type charger
- High capacity, automatic, solid-state transfer "spark-free"
- Low voltage disconnect prevents over discharge of battery
- Battery lock-out prevents battery discharge during installation
- Fused output circuit

Improved Diagnostics
- Units equipped with Improved Diagnostics shall self-test, by simulating a power failure, in accordance with NFPA101, Life Safety Code minimum 30 seconds every 30 days, 30 minutes every six months and 90 minutes annually. For complete information refer to page 8.

Nexus® Option
- Units equipped with NEXUS® self-testing monitoring system circuitry shall self-test, in accordance with NFPA101, Life Safety Code minimum 30 seconds every 30 days, 30 minutes every six months and 90 minutes annually as well as keep a history of all testing logs, plus feature a real-time diagnostics, as well as, be able to locate exact fixture location while notifying service personnel to the status of the fixture via email notification. For complete information refer to page 4-5.

Controls
- Red AC-On LED indicates Ac power is on
- Magnetically operated test switch allows for quick operational check of entire system

Sealed-Maintenance Free Battery
- 6 or 12V Lead-Calcium battery

Approvals
- CSA-US approved
- Evaluated to UL924 Standard
- Evaluated to the UL 844 Standard for Class I Division 2, Groups A, B, C and D
- NEC, OSHA and NEMA compliant for above Classes and Groups
- Ambiant temperature 50-104F (10-40C)
- Certified temperature codes for several emergency lamp types
- Certified for use in damp and wet locations

Warranty (subject to proper installation and maintenance)
- Unit has a three year full warranty (excluding LED lamps and fuses)[1]
- Lead Calcium Battery has a 3 year full, plus 3 year pro-rata warranty

[1] For LED lamps warranty, refer to page 168 paragraph 3.2

SPECIFICATIONS

Supply and install **Lightalarms® Severe™ VH Series**.

The emergency lighting unit shall be a self-contained fixture including a sealed maintenance-free Lead-Calcium battery of 6V or 12V with watts as specified. The unit shall supply the rated wattage load for a minimum of 90 minutes to 87-1/2% of rated battery voltage. The unit shall be rated 120/277VAC, 60 Hz and be CSA-US approved. The unit shall be certified for use in Hazardous locations: Class I Division 2, Groups A, B, C and D.

The unit charger shall utilize a micro-controller which samples the battery in relation to the ambient temperature, state of charge and input voltage fluctuations. The charger shall be current limited, temperature compensated, and short-circuit protected. The unit shall be furnished with an electronic lockout circuit which will connect the battery when the AC circuit is activated, and an electronic brownout circuit which will activate the unit when utility power dips below 80-85% of nominal voltage. A low voltage battery protection circuit shall be provided and will disconnect the load and circuitry from the battery when it reaches 87-1/2% of its nominal voltage. The unit shall be capable of full recharge in compliance with UL924 specifications. The unit shall be furnished with sealed dust-tight relay, Green LED pilot light to indicate AC-On and a magnetic test switch allows for quick operational check of entire system.

The Improved Diagnostics shall continuously monitor every critical function of the unit. If a malfunction occurs, the green pilot indicator LED located on the unit will change to red and begin to a flash, indicating a fault. If an audible optional alarm is specified, a high-pitch audible alarm will sound as well as the illuminating the fault pilot indicator. A detailed diagnostic legend next to the pilot indicator LED provides fault identification as battery, charger circuitry or lamps failure. The microcontroller shall automatic self-test, by simulating a power failure, in accordance with NFPA101, Life Safety Code for one minute every 30 days, 30 minutes every six months and 90 minutes annually.

The frame shall be of industrial grade polyvinyl chloride with gaskets around both sides of the frame contour. The frame shall be covered by two plates made of 1/8 inch thick aluminum sheets. The back plate shall include four keyholes for wall mount application. The front plate shall include water lenses for AC On and Service required pilot light indicators. Two fully tool-less adjustable glare-free MR16 lighting heads covered by a shock-absorbent clear vandal-resistant polycarbonate cover.

Every **Severe™ VH Series** unit shall be fully warranted for three years, subject to proper installation and maintenance.

Unit shall be **Lightalarms®** catalog number_____.

ACCESSORIES (Order as a separate item)

Wire Guard	**WG3-L**

SEVERE™ CLASS 1, DIVISION 2 FAMILY

The **Severe™ VH** Battery Unit is part of the **Severe™** family of Class I Division 2 rated emergency lighting products. Extremely resistant to strong impacts, vibrations and variations in temperature, this family of products is ideally suited for areas with the risk of the presence of flammable gases, or vapors or liquids able to create an explosive gas atmosphere.

Severe™ XVHZ & XVEHZ Exit Series
p.44

Severe™ XVH Combo Series
p.46

Severe™ ELF651 Remote Series
p.113

TYPE _____

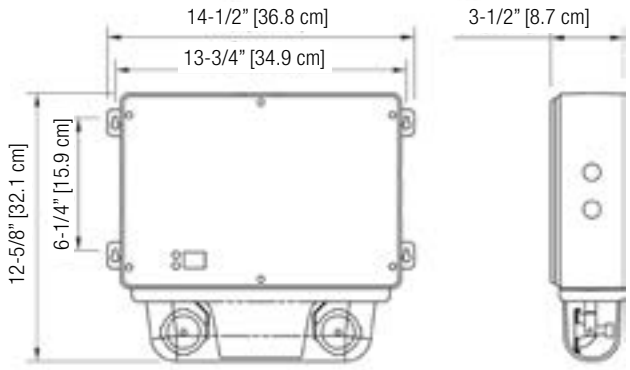
CATALOG # _____

NOTES _____

Designed to meet the specific requirements of Class I, Division 2, Groups A, B, C, and D, hazardous areas

DIMENSIONS

Dimensions are approximate and subject to change.



TEMPERATURE CODES: MR16LED LAMPS

LAMPS SUFFIX	VOLTAGE	WATTAGE	TEMPERATURE CODE	MAX. TEMPERATURE	REPLACEMENT #
LD1	6	4	T4A	120°C	580.0097-L
LD7	12	4	T4A	120°C	580.0093-L
LD9	12	5	T4A	120°C	580.0104-L

MR16 HALOGEN LAMPS

LAMPS SUFFIX	VOLTAGE	WATTAGE	TEMPERATURE CODE	MAX. TEMPERATURE	REPLACEMENT #
M12	12	12	T3C	180°C	580.0080-L
MH20	12	20	T2C	230°C	580.0168-L

POWER CONSUMPTION / UNIT RATING CHART

SERIES	DC SPECS						AC SPECS	
	BATTERY TYPE	DC VOLTAGE	87.5% BATTERY CAPACITY (IN WATTS)[1]				UNITS DUAL VOLTAGE[2]	CURRENT MAXIMUM
			90 MIN.	2 HRS.	3 HRS.	4 HRS.		
VHG1	Lead-Calcium	6V	18	12	9	0	120/277VAC	.17A/.09A
VH12G1		12V	36	27	18	14	120VAC 277VAC	.3A .15A
VH12G2		12V	60	45	30	24		
VH12G3		12V	72	54	36	28		

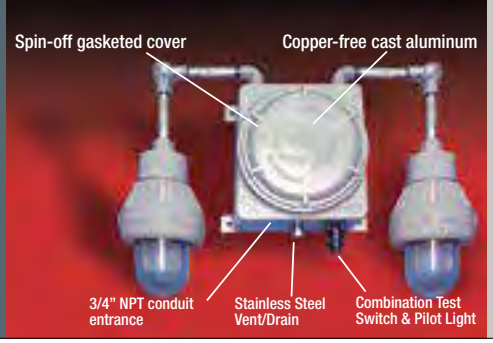
[1] National Electrical Code Specification

[2] All units 120/277 dual voltage, information based on wiring to specific voltage type

ORDERING FORMAT

# OF HEADS	SERIES	LAMP TYPE[1]	COLOR	OPTIONS
0= No head **2=** 2 Heads	**VHG1**= 6V-18W **VH12G1**= 12V-36W **VH12G2**= 12V-60W **VH12G3**= 12V-72W	**MR16 Halogen Lamp** **M10**= 12V-10W **M12**= 12V-12W **MH20**= 12V-20W **MR16 LED Lamp** **LD1**= 6V-4W MR16 LED **LD7**= 12V-4W MR16 LED **LD9**= 12V-5W MR16 LED [1] No other lamp types available for this Series, for complete information on these lamp types refer to page 153.	**G**= Grey	**Blank**= IDNA **-DA**= Improved Diagnostics (optional - audible)[1] **-D**= Improved Diagnostics (included standard - non audible) **-NEX**= Nexus® Wired Compatible[2] **-NEXRF**= Nexus® Wireless Compatible[2] **-T1**= Time Delay (5 minute) **-T2**= Time Delay (10 minute) **-T3**= Time Delay (15 minute) [1] -ID & -IDNA include a time delay feature that can be enabled/disabled in the field or set by the factory by including -ID-TD* or -IDNA-TD* [2] -NEX & -NEXRF is CSA-US approved only. Consult your sales representative

EXAMPLE: 2VHG1LD1G



Lightalarms

EXP6N & EXP12N SERIES

Explosives/Hazardous location Housing
6V up to 50W & 12V up to 72W Capacities
Nickel-Cadmium battery

FEATURES

Housing

- Class I, Division 1 & 2, Group C & D
- Class II, Division 1 & 2, Group E, F & G
- One-piece heavy gauge, corrosion resistant, copper-free cast aluminum
- Consists of a housing with provisions for up to two lighting heads
- Spin-off gasketed cover prevents propagation of internally generated arcs
- Stainless steel vent/drain
- Lighting head fixtures are heavy cast aluminum with Pyrex® lens
- Circuit board silicone conformal coated to protect against humidity

Mounting

- Surface Wall Mount for complete unit with attached lamp heads
- Surface, Wall, Ceiling and Pendant Mount for EPF401 as DC remote heads
- Housing includes 4 mounting lugs on each corner
- 3/4" NPT conduit entry on top and bottom of housing
- Single and double pendant mount heads include elbow swivel, conduit extension pipe (6" increments) and Hazardous Location junction box.

Electronics

- High capacity, automatic, solid-state transfer
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection is provided
- Battery lock-out prevents battery discharge during installation
- Fused output circuit
- Input: 120/277 VAC, 60Hz 0.3/0.15A

Controls

- Combination momentary test switch and AC present indicator light

Sealed Maintenance-Free Battery

- 6V or 12V, Nickel-Cadmium battery

Approvals

- Manufactured in accordance with UL844, UL1203, and UL924
- Cabinet and lighting fixtures rated for operation in Class I, Division 1 & 2, Groups C and D
- Cabinet and lighting fixtures rated for operation in Class II, Division 1 & 2, Groups E, F and G
- NEC, OSHA and NEMA compliant for above Classes and Groups

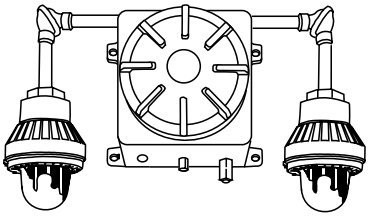
Warranty (subject to proper installation and maintenance)

- Unit has a three year full warranty (excluding lamps and fuses)[1]
- Nickel-Cadmium battery, five year full, plus five year pro-rata warranty

[1] For LED lamps warranty, refer to page 168 paragraph 3.2

DIMENSIONS

Dimensions are approximate and subject to change.



Housing: 12" X 12" X 9-1/2".
Mounting Lugs: 10" and 13-1/2" on center
Overall dimensions (including fixtures): 38" X 38" X 10"

SPECIFICATIONS

Supply and install **Lightalarms® EXP6N, EXP12N** Series. The emergency lighting unit shall be a self-contained fixture including a sealed maintenance-free Nickel-Cadmium battery of 6V or 12V wattage as specified on the unit rating chart. The unit shall supply the rated wattage load for a minimum of 90 minutes to 87-1/2% of rated battery voltage. The unit shall be rated 120/277VAC, 60Hz .

The unit charger shall utilize an integrated circuit which samples the battery in relation to temperature, state of charge and input voltage fluctuations. The charger shall be current limited. The unit shall be furnished with an electronic lockout circuit which will connect the battery when the AC circuit is activated, and an electronic brownout circuit which will activate the unit when utility power dips below 80-85% of nominal voltage. A low voltage battery protection circuit shall be provided and will disconnect the load and circuitry from the battery when it reaches 87-1⁄2% of its nominal voltage. The unit shall be capable of full recharge in compliance with UL 924 specifications.

The unit shall be furnished with solid state transfer, a combination momentary test switch, to simulate a power failure and an AC indicator light which indicates presence of AC to the unit. The cabinet shall be Hazardous Location, one-piece heavy gauge, corrosion resistant, copper-free cast aluminum, finished in gray. Housing with provisions of up to two lighting head and includes 4 mounting lugs on each corner and a 3/4" NPT conduit entry on the top and bottom. Spin-off gasketed cover prevents propagation of internally generated arcs into the hazardous atmosphere. Lighting head are heavy cast aluminum with Pyrex® lens(es). Housing shall be surface wall mount with or without attached lamp heads. EPF401 lighting heads not attached to housing, thus being remote heads, shall be surface, wall, ceiling or pendent mount. Single and double pendant mount fixtures include elbow swivel, conduit extension pipe (6" increments) and combination explosion-proof junction box / mounting plate.

Every **EXP6N, EXP12N** Series unit shall be fully warranted for three years, subject to proper installation and maintenance.

Unit shall be **Lightalarms®** catalog number_____.

LAMP SELECTION CHART

WEDGE BASE INCANDESCENT LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
L9	6V	9W	126	570.0010-L
L18	6V	18W	300	570.0037-L
L9	12V	9W	126	570.0011-L
L18	12V	18W	276	570.0030-L
L25	12V	25W	400	570.0031-L

BI-PIN HALOGEN LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
LH4	6V	6W	113	570.0012-L
LH5	6V	8W	163	570.0013-L
LH7	6V	10W	200	570.0017-L
LH6	6V	12W	240	570.0011-L
LH1	6V	15W	210	570.0086-L
LH8	12V	8W	163	570.0014-L
LH3	12V	12W	276	570.0010-L

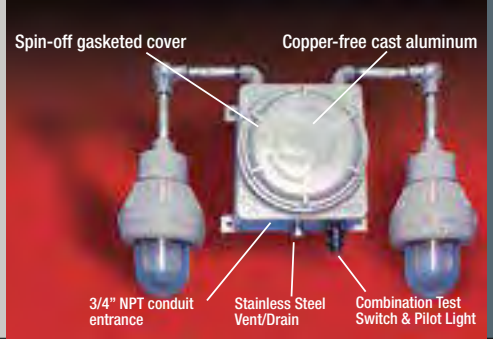
Note: Units are supplied standard with appropriate wattage (HIT) high intensity tungsten lamps (unless otherwise specified). Alternate wattage lamps or halogen lamps may be substituted as required.

TYPE _____

CATALOG # _____

NOTES _____

Designed to meet the specific requirements Class I, Division 1&2, Groups C and D Class II, Division 1&2, Groups E, F and G Complies with NEC, OSHA and NEMA specification

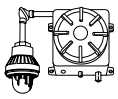
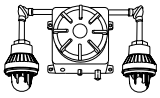


POWER CONSUMPTION / UNIT RATING CHART

SERIES	DC SPECS						AC SPECS	
	BATTERY TYPE	DC VOLTAGE	87.5% BATTERY CAPACITY (IN WATTS)[1]				UNITS DUAL VOLTAGE[2]	CURRENT MAXIMUM
			90 MIN.	2 HRS.	3 HRS.	4 HRS.		
EXP6N18	Nickel-Cadmium	6V	18	12	0	0	120VAC 277VAC	.3A .15A
EXP6N25		6V	25	28	9	9		
EXP6N36		6V	36	21	12	12		
EXP6N50		6V	50	36	18	18		
EXP12N36		12V	36	21	12	12		
EXP12N50		12V	50	36	18	10		
EXP12N72		12V	72	42	24	24		

[1] National Electrical Code Specification
[2] All units 120/277 dual voltage, information based on wiring to specific voltage type

STANDARD CONFIGURATIONS FOR EXP6N AND EXP12N SERIES

UNIT	CATALOG NUMBER	DESCRIPTION
 (Remote capability)	EXP12N50	12V self-contained hazardous area emergency lighting power unit complete with battery and charger.
	EXP12N50-TS	12V self-contained hazardous area emergency lighting. power unit complete with battery charger and transfer switch.
	EXP6N50E402/LH1	Single head unit with 6V-15W Bi-Pin halogen lamp.
	EXP6N50E402/LH1-TS	Single head unit with 6V-15W lamp shown with Transfer Switch option.
	EXP6N50E402/L9-2	6V self-contained hazardous area emergency lighting power units complete with battery and charger and two heads. Each fixture supplied with one 9W HIT lamp.
	EXP6N50E402/L9-TS-2	6V self-contained hazardous area emergency lighting. Power unit complete with battery, charger, 2 heads and transfer switch. Each fixture supplied with one 9W HIT lamp.

Note: Above units are supplied with appropriate wattage (HIT) High Intensity Tungsten lamps (unless otherwise specified).
Alternate wattages lamps or halogen lamps may be substituted as required.

ORDERING FORMAT

SERIES	HEAD STYLE	LAMP SUFFIX[1]	TS OPTION	# OF HEADS	OPTIONS
EXP6N18= 6V-18W **EXP6N25**= 6V-25W **EXP6N36**= 6V-36W **EXP6N50**= 6V-50W **EXP12N36**= 12V-36W **EXP12N50**= 12V-50W **EXP12N72**= 12V-72W	**Blank**= No Heads **E402**= Head Style	/_____ [1] On page 94 choose from lamp selection chart no other lamp types available	**Blank**= No Transfer Switch **-TS**= Transfer Switch	**Blank**= One head **-2**= Two heads	**Blank**= No options **-AG**= Angle reflector **-DM**= Dome reflector **-GD**= Wire guard (covers glass globe only)

EXAMPLE: EXP6N36/LH5-2

EXP FAMILY

Ideal for industrial applications, the **EXP family** include explosion-proof fixtures to deliver reliable performance and with stand harsh conditions.

EPF401 Remote Head
p.114

X402 Series Exit Sign Unit
p.48

EXP6N & EXP12N Combination Series
p.49

REMOTE FIXTURES

Remote Fixtures, Remote Heads & Unit Heads

INTRODUCTION

About Remote Fixtures and Lamp Information

98-99

ARCHITECTURAL
Recessed Mount

Remote Fixture
Phantom™ Series

100

ARCHITECTURAL
Recessed Mount

Remote Fixture
Decorative™ Series

101

ARCHITECTURAL
Surface Mount

NEMA-3R Remote Fixture
Camray® LED Series

102

ARCHITECTURAL
Surface Mount

NEMA-3R Remote Fixture
Saf-T-Ray™ Series

103

ARCHITECTURAL
Surface Mount

Remote Head & Unit Head
DR Series

104

COMMERCIAL
Surface Mount

Remote Head & Unit Head
ELF2 Series

105

COMMERCIAL
Surface Mount

Remote Head & Unit Head
ELF3 Series

106

COMMERCIAL
Surface Mount

Remote Head & Unit Head
ELF623 Series

107

COMMERCIAL
Surface Mount

Remote Head & Unit Head
ELF645 Series

108

INDUSTRIAL
Surface Mount

Remote Head & Unit Head
ELF647 Series

109

COMMERCIAL &
INDUSTRIAL Surface Mount

Remote Fixture
Vandal-Resistant ELF640 Series

110

COMMERCIAL & INDUSTRIAL
Surface Mount

Remote Fixture
NEMA-4X ELF650 Series

111

INDUSTRIAL
Surface Mount

Explosion / Hazardous Remote Fixture ELF647C Series

112

INDUSTRIAL
Surface Mount

Explosion / Hazardous Remote Fixture ELF651 Series

113

INDUSTRIAL
Surface Mount

Explosion / Hazardous Remote Fixture EPF401 Series

114

INDUSTRIAL
Surface Mount

Explosion / Hazardous Remote Fixture
X402 Exit Series

115

About Remote Fixtures & Head Illumination

Emergency Lighting Heads and the lamps they use: Illuminating a Path of Egress

Emergency Lighting Heads and the choice of lamps used within those heads is the most important element of an emergency lighting system's performance getting people to safety in an emergency situation. The light output or lumens provided by the lamp is a key factor in evacuating a building quickly and safely during an emergency situation, thus possibly saving lives. Providing the correct amount of light allows people to easily see their path of egress, saving precious seconds exiting a building in an emergency situation when every second counts.

The Life Safety Code, which can be found at the back of this catalog, provides information on the minimum light levels that should illuminate a path of egress for safe evacuation, and the required foot candles at floor level. The lumen output of a lamp can provide different foot candle levels based on the mounting height of the lighting head or fixture. A photometric layout with the lighting heads mounted at the height of installation and the lamps being used will provide a visual estimation of the foot candle levels achieved at floor level.

Emergency lighting heads should be installed to provide illumination along the path of egress of no less then an average of 1 footcandle, with no point at less then 0.1 footcandle. The heads should also be mounted in such a way that if one lamp should fail, it will not leave an area with less than 0.2 foot candle of illumination. Local and state codes may have other requirements. It is always good practice to check with the appropriate inspector about the illumination required.

Important considerations when choosing the proper lamp

Emergency Lighting is required to provide illumination for a minimum of 90 minutes or an hour and a half during an emergency situation. Emergency Lighting lamps powered from a DC battery source must be powered by a battery that has the capacity to power all the lamps using that battery source for a minimum of 90 minutes. It is important to choose the correct lumen output lamp to meet the required illumination at the floor level on a path of egress. It is equally important to match the lamp and the battery voltages. If you do not have a battery that is the same voltage as the lamp and with enough wattage capacity to illuminate all the lamps, then the lamps will not provide adequate lumen output for 90 minutes to meet the required illumination at floor level along the path of egress.

First, match voltage. The voltage of the lamp **MUST** exactly match the voltage of the battery powering that lamp. If the voltage of the battery is lower than the voltage of the lamp, the lamp may not illuminate. If the voltage of the battery is higher than the voltage of the lamp, the lamp may "pop".

Second, consider total wattage. The wattage of each individual lamp drawing from a battery during emergency operation, including the lamps mounted on the unit as well as all remote lamps wired to that unit, added together, **CAN NOT EXCEED** the total wattage capacity of that battery within 90 minutes of operation. A unit's battery wattage capacities are shown in the Unit Rating Chart of each particular unit.

Available lamp types are shown on the Lamp Selection Chart on the catalog page for each head style or fixture type. Lamp Selection Chart information refers to a single lamp. If you are using a double or triple lamp type head or fixture, the wattage draw of that head or fixture will be the total number of lamps used. For example, if you are using a double lamp fixture with a 12W lamp, that fixture will have a 24W draw (two lamps of 12W each, 12W + 12W = 24W total).

Lamp Life

It is often asked why emergency lighting lamps have such a short lamp life. Who wants a lamp that only lasts 50 hours? However, considering that most of the time emergency lighting lamps are not illuminated, 50 hours is not such a short life. If power failures are relatively scarce; for example, 90 minutes 4 times a year, then emergency lighting would only be required for six hours. If you add in monthly testing and a 90-minute annual test, that lamp would be illuminated for an average of 8 hours a year. Based on that example, a lamp with a 50-hour life is more than adequate for emergency lighting. By design, some emergency lighting lamps are made to burn brighter using the same wattage draw as lamps that could have a longer life but not burn as bright. A brighter burn lamp has a shorter life, but in an emergency situation, the brighter the better.

Lamp improvements are continuously being made to make them brighter, draw less wattage, increase lumen efficacy per watt, and provide longer life. LED lamps have taken emergency lighting lamps to a whole new level. For example, our 12V-6W MR16 LED lamp provides 540 lumens with a lamp life of over 30,000 hours.

Lamp Types:

Wedge Base Incandescent and Bi-Pin Halogen

These two lamps types are commonly referred to as miniature lamps with a tungsten filament burning differently based on the gas filled within that lamp. Lamps with a tungsten filament enclosed within the glass case of the lamp, filled with a gas mixture of argon and nitrogen are generally referred to as incandescent lamps. A bi-pin halogen lamp, which is filled with iodide/chloride gas, allows the tungsten filament to burn at a higher temperature. This higher temperature burn results in a higher lumen output, thus being 20-30% superior to a standard incandescent lamp of the same voltage and wattage. A typical bi-pin halogen lamp used in emergency lighting has a 50-hour lamp life.

PAR36 Sealed Beam Incandescent and Halogen

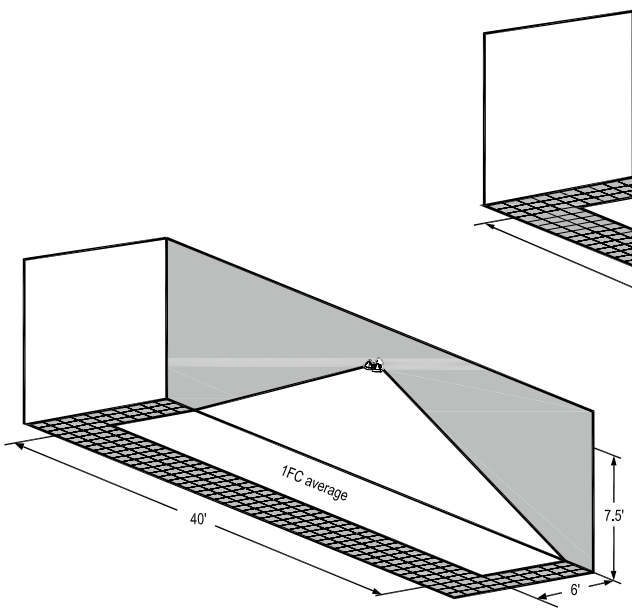
Lamp lumen output is also dependent on the lamp optics – the reflector and lens that make up the lamp. Protecting the lamp optics is especially critical in damp areas where vapors and water condensation can deteriorate the reflector's performance. Sealed beam lamps are recommended for such applications. Sealed beam lamps have a metal-coated glass reflector and a lens sealed together with argon and nitrogen gas for incandescent lamps, or iodide/chloride gas for halogen lamps. Different gases affect the filament burn temperatures and lumen output. Halogen lamps burn hotter, thus providing brighter illumination. PAR36 sealed beam lamps have a lamp life of 50-300 hours, with an efficacy of 12-25 lumens per watt.

MR16 Halogen

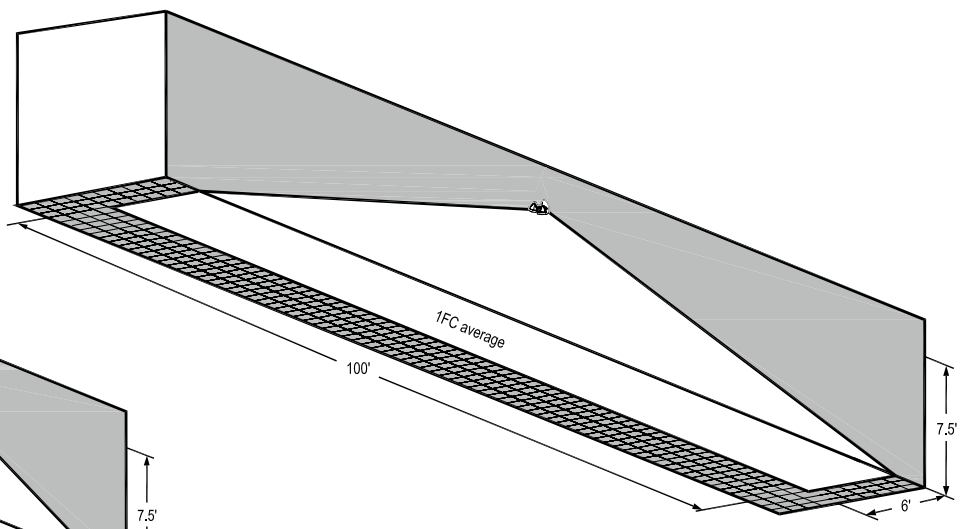
MR16 stands for Multi-facetted Reflector, 16/8-inch diameter lamp. The MR16 lamp contains everything in one small package: a halogen lamp, a metal-coated glass reflector, and a clear glass cover cemented to the reflector. An MR16 lamp is easy to install and replace if needed – just push it in or pull it out of the lamp socket. Additional benefits of MR16 lamps include a high lumen output, a long lamp life of 2,000 to 6,000 hours, and an efficacy of 11-30 lumens per watt.

MR16 LED

The MR16 LED lamp contains everything in one small package: long-life, high lumen output, and a high lumens-to-watts efficacy ratio. An MR16 lamp is easy to install and replace if needed – just push it in or pull it out of the lamp socket. Our 12V-6W MR16LED lamp has a lumen output of 540 for an average spacing of 100 feet center-to-center. With an efficacy of 91.9 lumens per watt, that's 3 times the efficacy of an MR16 20W high-output lamp. An MR16 LED lamp has a life of over 30,000 hours.



40-ft. Path of egress 2 X 4W MR16 LED



100-ft. Path of egress 2 X 6W MR16 LED


Shown with MR16 LED lamps

REMOTE FIXTURE PHANTOM™ SERIES

Virtually Invisible, Architecturally Pleasing

TYPE _____

CATALOG # _____

NOTES _____

FEATURES

Description

- Indoor use
- Two lamp MR16 remote fixture with a choice of halogen or LED
- One-piece all-metal module design (does not require large galvanized steel back box as does the battery back-up unit)
- Complete 360° door rotation, 180° to open 180° to close
- Slip gear mechanism protects the unit from objects that would cause the door rotation to be forcibly stopped.

Finish

- Flat door and frame are covered with a high-quality, powder coated textured off-white finish
- Surface finish can be customized on site with paint, wallpaper or other coverings.

Mounting

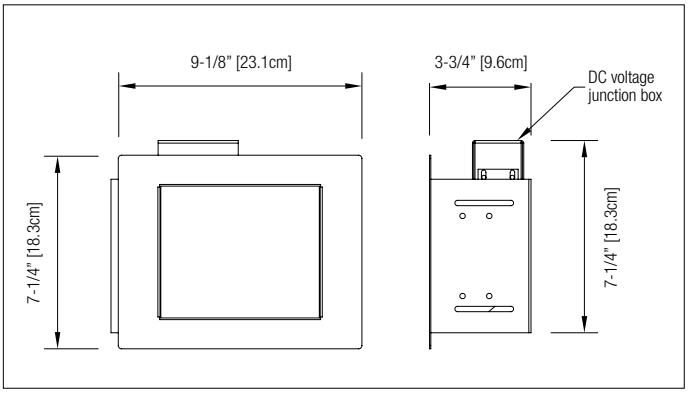
- The DC-remote fixture unit includes as an option (specify when ordering a hardware kit for installation in T-Bar ceiling structure).
- The module includes the electrical junction box and is installed on the wall stud or ceiling beam with the help of a simple, U-shape bracket.
- Key-hole slot for ease of installation

Approval

- CSA-US

DIMENSIONS

Dimensions are approximate and subject to change.



LAMP SELECTION CHART

MR 16 HALOGEN LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
M12	12	12	80	580.0080-L
M20	12	20	150	580.0064-L
MH20	12	20-H	400	580.0068-L
M35	12	35	430	580.0083-L
MH35	12	35-H	830	580.0090-L
M50	12	50	700	580.0076-L
MH50	12	50-H	1460	580.0089-L
M12	24	12	82	580.0070-L
M20	24	20	240	580.0077-L
M35	24	35	235	580.0084-L
M50	24	50	670	580.0076-L

MR 16 LED LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
LD7	12	4	170	580.0093-L
LD9	12	5	340	580.0101-L
LD10	12	6	540	580.0106-L
LD13	24	4	200	580.0098-L

ORDERING FORMAT

SERIES	LAMP SUFFIX	OPTIONS
12PMR2= 12 VDC[1] **24PMR2**= 24 VDC[1]	/ _____[1]	**DL**= Damp location
[1]Double lamp remote fixture	[1]Choose from lamp selection chart	

EXAMPLE: 12PM2R-M50

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

REMOTE FIXTURE DECORATIVE™ SERIES

Contemporary and Enduring Style

FEATURES

Description

- Indoor Use
- Powder-coated die cast aluminum construction
- Tool-less lamp head adjust ability
- Glass MR16 lamp lens
- Choice of MR16 Halogen or LED Lamp

Finish

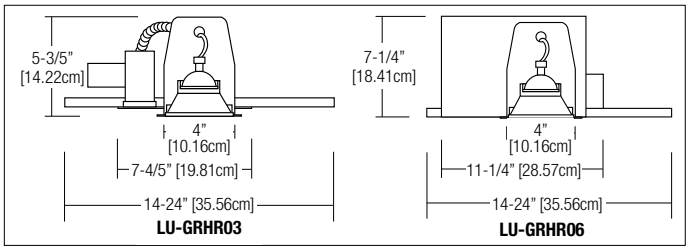
- Choice of White, Black, Chrome, Brushed Nickel or Polished Brass

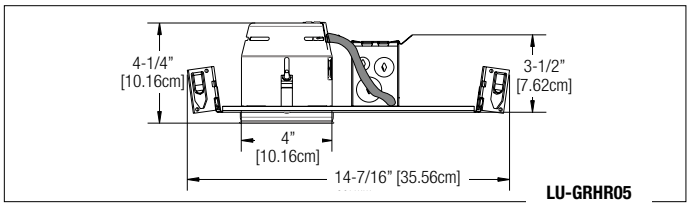
Mounting

- Recessed Ceiling Mount
- Must order appropriate housing with Decorative head selection for installation into new construction ceiling (LU-GRHR03) or Non-Insulated ceiling (LU-GRHR05) GU10 or Insulated ceiling (LU-GRHR06)

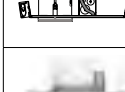
DIMENSIONS

Dimensions are approximate and subject to change.





SERIES

	RSTH24	**Description:** Decorative lighting head **Dimensions:** 4.0" diameter base **Color Suffix:** -WH= White, -BK= Black, -CH= Chrome, -PB= Polished brass, -BN= Brushed Nickel
	RSTH18	**Description:** Decorative lighting head **Dimensions:** 4.0" diameter base **Color Suffix:** -WH= White or -BN= Brushed nickel
	RSTH18R	**Description:** Decorative lighting head **Dimensions:** 4.0" diameter base **Color Suffix:** -WH = White or -BN = Brushed nickel
	RSTH19	**Description:** Decorative lighting head **Dimensions:** 4.0" diameter base **Color Suffix:** -WH = White
	LU-GRHR03	**Housing Enclosure** **Description:** New construction housing **Dimensions:** 5.6" x 14.24"
	LU-GRHR05	**Housing Enclosure** **Description:** New construction housing **New construction housing for GU10**
	LU-GRHR06	**Housing Enclosure** **Description:** Insulated ceilings housing **Dimensions:** 7.25" x 14.24"

LAMP SELECTION CHART

MR 16 HALOGEN LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
M5	6	5	34	580.0072-L
M6	6	6	40	580.0074-L
M10	6	10	74	580.0079-L
M10	12	10	84	580.0099-L
M12	12	12	80	580.0080-L
M20	12	20	150	580.0064-L
MH20	12	20-H	400	580.0068-L
M35	12	35	430	580.0083-L
MH35	12	35-H	830	580.0090-L
MH31	12	37-H	900	580.0088-L
M50	12	50	700	580.0076-L
MH50	12	50-H	1460	580.0089-L
M12	24	12	82	580.0070-L
M20	24	20	240	580.0077-L
MA20	24	20-A	220	580.0094-L
M35	24	35	235	580.0084-L
M50	24	50	670	580.0076-L
M20	120	20	100	580.0065-L
M35	120	35	230	580.0066-L

MR16 LED LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
LD1	6	4	130	580.0097-L
LD7	12	4	170	580.0093-L
LD9	12	5	340	580.0098-L
LD10	12	6	540	580.0106-L
LD13	24	4	200	580.0104-L
LD26	120	4	200	580.0113-L
LD14	24	6	590	580.0100-L

MR16 LED LAMPS COMPATIBILITY CHART						
HEAD STYLE	6V-4W	12V-4W	24V-4W	12V-5W	12V-6W	120V-4W
RSTH18	X	X	X	–	–	–
RSTH18R	X	X	X	X	X	X
RSTH19	X	X	X	X	X	X
RSTH24	–	–	–	–	–	–

ORDERING FORMAT

(Must also order Housing Enclosure based on Ceiling Type, sold separately)

SERIES	LAMP SUFFIX	COLOR	VOLTAGE
RSTH24 **RSTH18** **RSTH18R** **RSTH19**	/ _____[1] [1]Choose from lamp selection chart	**-WH**= White **-BK**= Black (available with RSTH24 only) **-CH**= Chrome (available with RSTH24 only) **-BN**= Brushed Nickel (available with RSTH19) **-PB**= Polished Brass (available with RSTH24 only)	**6**= 6 VDC **12**= 12 VDC **24**= 24 VDC **120**= 120 VAC/VDC

EXAMPLE: RSTH18/M6-WH

With Housing Enclosure Example: LU-GRHR06 (for Insulated Ceiling installation)

Lightalarms UL NEMA-3R NEW! NEW DESIGN & LED FOR NORMALLY-ON AND/OR EMERGENCY BACK-UP

REMOTE FIXTURE CAMRAY® LED SERIES

Low-profile, slim look and performance in a Remote Fixture

TYPE _____

CATALOG # _____

NOTES _____

FEATURES

Description

- Indoor or Outdoor Use
- (4) 100% LED light engine with redundant connections and very wide beam
- Powder-coated Die-Cast aluminum construction
- Clear Polycarbonate lens allows for maximum lumen output
- Optional forward-throw light distribution, for applications of outdoor Exit discharge (OSHA 1910.36)
- Optional dual-mode: normal and emergency LED lighting with separate AC inputs
- Optional high-lumen output: 25-50% additional level of illumination
- Optional photo-switch: dusk-to-dawn control of normal lighting
- Optional remote test: infrared remote control (keyboard ordered separately)
- 400-640 Lumens
- Color temperature: 5000K

Finish

- Choice of four finishes, off-white, Black, platinum gray or dark bronze

Mounting

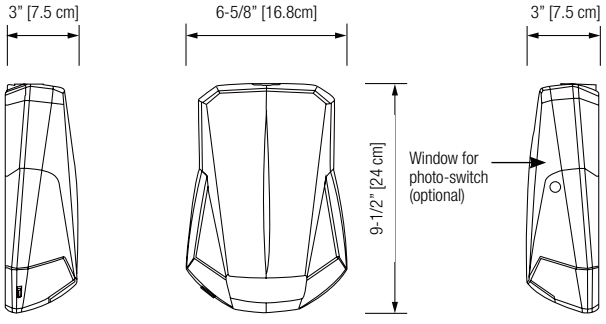
- Surface Wall Mount
- Universal knock-out for mounting to a standard 4" octagonal electrical box

Approval

- UL Listed
- NEMA-3R
- UL Listed for Damp and Wet Location
- Operating temperature -40°F to 122°F (-40°C to + 50°C)

DIMENSIONS

Dimensions are approximate and subject to change.



PHOTOMETRIC

TABLE A: SPACING FOR NFPA101 (AVERAGE = 1FC, SEE NOTE)					
MODEL TYPE	MOUNTING HEIGHT	LUMEN	COLOR TEMPERATURE	WIDTH X LENGTH (FT)	
				SINGLE UNIT	CENTER-TO-CENTER
Standard	9'	400	5000K	6' X 50'	6' X 50'
With option -H	11'	550		6' X 60'	6' X 60'
					3' X 70'
With option -FT	12'	460		6' X 40'	—
With option -FTH	15'	640		6' X 50'	—

Indoor reflectance: 80/50/20 and 10-ft wide corridor. Outdoor reflectance: 0/30/10

Note: The illumination level meets ALL the requirements of the Life Safety Code (NFPA 101):
1) Average of 1 foot-candle or more
2) Minimum at any point of 0.1 foot-candle or more
3) Maximum-to-minimum illumination uniformity ratio of 40:1 or less

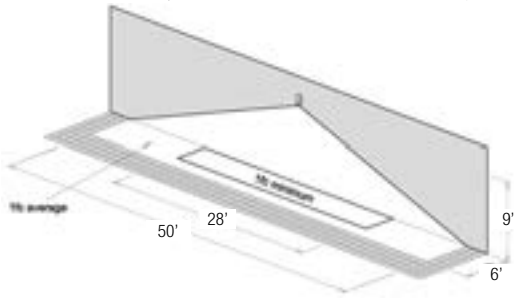
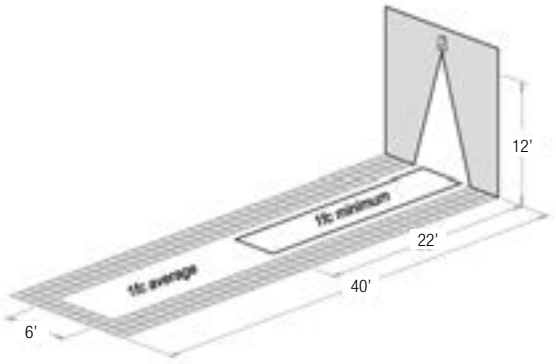


TABLE B: SPACING FOR MINIMUM ILLUMINATION = 1FC					
MODEL TYPE	MOUNTING HEIGHT	LUMEN	COLOR TEMPERATURE	WIDTH X LENGTH (FT)	
				SINGLE UNIT	CENTER-TO-CENTER
Standard	9'	400	5000K	4' x 28'	4' x 32'
With option -H	11'	550		4' x 32'	4' x 40'
With option -FT	12'	460		4' x 22'	—
With option -FTH	15'	640		4' x 27'	—



ORDERING FORMAT

SERIES	MODEL[1]	COLOR	OPTIONS
CAM= Camray® LED	**AC**= AC-only **ACDC**= AC/6-12VDC remote **DC**= 6-12VDC remote fixture **2AC**= AC-only two circuits: 120/120 or 277/277V [1] Temperature range: -40°C + 50°C (-40°F - 122°F)	**B**= Black **DB**= Dark bronze **OW**= Off white **PG**= Platinum gray	**-FT**= Forward throw lighting **-H**= High lumen output (-40°C - 30°C) (-40°F - 86°F) **-P**= Photo-switch (AC and ACDC only) **-RC**= Remote control - infrared (AC and ACDC only)[1] [1] With -RC option, order the remote control keypad (TB-RC1-L) separately

EXAMPLE: CAMACDCB-H

NEMA-3R

TYPE _____

CATALOG # _____

NOTES _____

REMOTE FIXTURE SAF-T-RAY™ SERIES

Wall Mount Remote Head for Damp and Wet Locations

FEATURES

Description

- Indoor or Outdoor use
- Double MR16 size lighting head
- Die-Cast aluminum construction
- Fully gasketed cover available with (optional) Tamper Proof Screws
- Adjustable tool-less aiming swivel head rotates side to side and tilts in and out
- Impact- and tamper-resistant polycarbonate diffuser maximizes light output

Finish

- Mist white, black or dark gray

Mounting

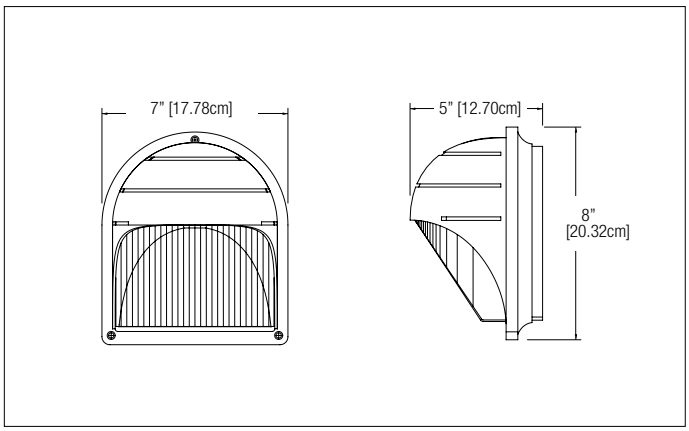
- Surface Wall Mount
- Universal knock-outs for mounting to a standard 4" octagonal electrical box

Approval

- UL Listed
- NEMA-3R

DIMENSIONS

Dimensions are approximate and subject to change.



LAMP SELECTION CHART

MR 16 HALOGEN LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
M5	6	5	34	580.0072-L
M6	6	6	40	580.0074-L
M10	6	10	74	580.0079-L
M10	12	10	84	580.0099-L
M12	12	12	80	580.0080-L
M20	12	20	150	580.0064-L
MH20	12	20-H	400	580.0068-L
M12	24	12	82	580.0070-L
M20	24	20	240	580.0077-L
M20	120	20	100	580.0065-L

MR 16 LED LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
LD1	6	4	130	580.0097-L
LD7	12	4	170	580.0093-L
LD9	12	5	340	580.0098-L
LD10	12	6	540	580.0106-L
LD13	24	4	200	580.0104-L
LD25	120	4	200	580.0010-L

ORDERING FORMAT

SERIES	LAMP SUFFIX	COLOR	VOLTAGE	OPTIONS
SAF-2= Double lamp remote fixture	/ _____[1]	**-M**= Mist White **-B**= Black **-DG**= Dark Gray **-DB**= Dark Bronze	**6**= 6 VDC **12**= 12 VDC **24**= 24 VDC **120**= 120 VAC/VDC	**-VR**= Vandal resistant screws **-C**= Clear lens

[1] Choose from lamp selection chart

EXAMPLE: SAF-2/M6-M6

REMOTE HEAD & UNIT HEAD DR SERIES

Metal MR16 Lamp Head

Available Mounted on:
• TBR Series • RD Series • S12E Series • MG & MN Series
• PG & P12G Series • PN & P12N Series • PQ & P12Q Series

TYPE _____

CATALOG # _____

NOTES _____

FEATURES

Description

- Indoor use
- Available as a single, double or triple MR16 size lighting head
- Die cast aluminum construction
- Fully tool-free adjustable aiming swivel head
- Clear glass lens

Finish

- Powder-coated white or black

Mounting

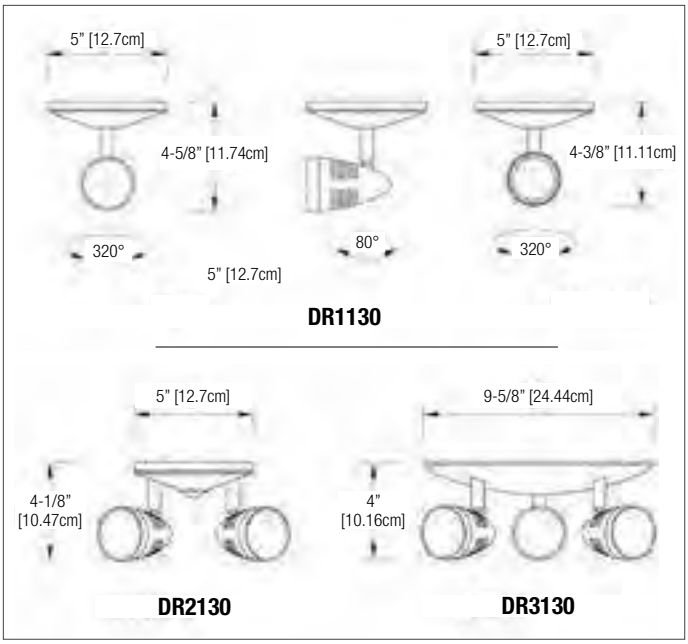
- Surface Mount
- Includes canopy plate for mounting to a standard 4" octagonal electrical box.

Approval

- UL Listed

DIMENSIONS

Dimensions are approximate and subject to change.



ACCESSORIES

(Order as a separate item)

Wire Guard for DR1130, DR2130	**WG8-L**
Wire Guard for DR3130	**WG2-L**

LAMP SELECTION CHART

MR 16 HALOGEN LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
M5	6	5	34	580.0072-L
M6	6	6	40	580.0074-L
M10	6	10	74	580.0079-L
M10	12	10	84	580.0099-L
M12	12	12	80	580.0080-L
M20	12	20	150	580.0064-L
MA20	12	20-A	225	580.0075-L
MH20	12	20-H	400	580.0068-L
M35	12	35	430	580.0083-L
MH35	12	35-H	830	580.0090-L
MH31	12	37-H	900	580.0088-L
M50	12	50	700	580.0076-L
MH50	12	50-H	1460	580.0089-L
M12	24	12	82	580.0070-L
M20	24	20	240	580.0077-L
MA20	24	20-A	220	580.0094-L
M35	24	35	235	580.0084-L
M50	24	50	670	580.0076-L
M20	120	20	100	580.0065-L
M35	120	35	230	580.0066-L
M50	120	50	460	580.0067-L

MR 16 LED LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
LD1	6	4	130	580.0097-L
LD7	12	4	170	580.0093-L
LD9	12	5	340	580.0104-L
LD10	12	6	540	580.0106-L
LD13	24	4	200	580.0098-L
LD14	24	6	590	580.0100-L
LD25	120	4	200	580.0010-L

ORDERING FORMAT

SERIES	LAMP SUFFIX	COLOR	VOLTAGE
DR1130= Single remote head **DR2130**= Double remote head **DR3130**= Triple remote head	/_____[1] [1] Choose from lamp selection chart	**-WH**= White **-BK**= Black	**6**= 6 VDC **12**= 12 VDC **24**= 24 VDC **120**= 120 VAC/VDC

EXAMPLE: DR1130/M12-WH12

Available Mounted on:
• TBR Series • RD Series • S12E Series • MG & MN Series
• PG & P12G Series • PN & P12N Series • PQ & P12Q Series

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

REMOTE HEAD & UNIT HEAD ELF2 SERIES

Thermoplastic Par 18 size lamp head

FEATURES

Description

- Indoor Use
- Available as a single, double or triple Par 18 size lighting head
- Thermoplastic construction
- Fully adjustable tool-less aiming swivel head
- Specular parabolic reflector and prismatic lens for wide-beam, even light distribution
- Snap out lens for easy lamp replacement.

Finish

- Mist white or black

Mounting

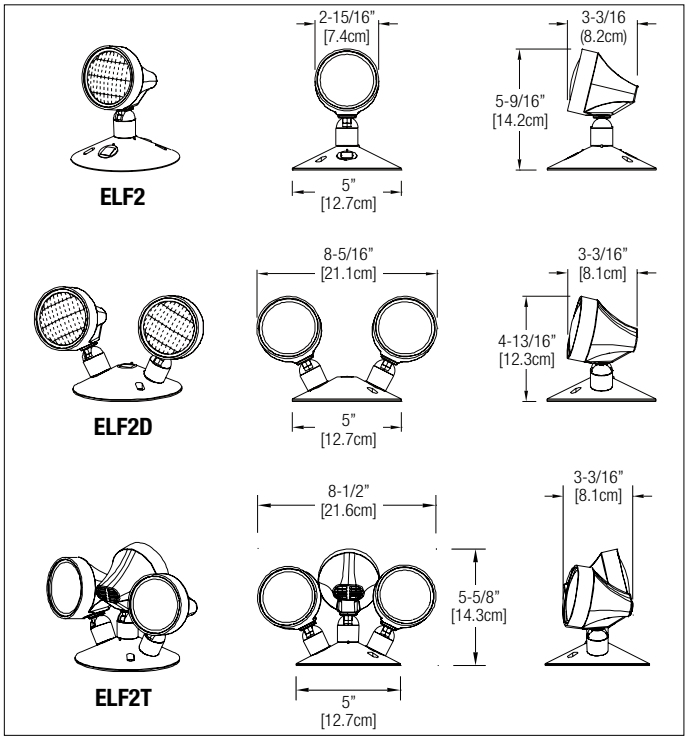
- Surface Mount
- Includes a 5" round universal canopy plate with 3 knockouts (supplied with 2 plugs) for use with single, double or triple head mounting.
- Mounts to either a standard 4" octagonal or a single gang electrical box. (4-gang plate for ELF2D optional).

Approval

- UL Listed

DIMENSIONS

Dimensions are approximate and subject to change.



LAMP SELECTION CHART

WEDGE BASE INCANDESCENT LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
L5	6	5.4	68	570.0012-L
L7	6	7.2	100	570.0026-L
L9	6	9	150	570.0016-L
L9	12	9	138	570.0025-L
L12	12	12	150	570.0028-L
L18	12	18	264	570.0029-L
L9	24	9	113	570.0045-L
L18	24	18	239	570.0046-L

BI-PIN HALOGEN LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
LH4	6	6	113	580.0012-L
LH5	6	8	163	580.0013-L
LH7	6	10	201	580.0017-L
LH6	6	12	239	580.0011-L
LH8	12	8	163	580.0014-L
LH3	12	12	276	580.0015-L
LH9	12	14	302	580.0016-L

ORDERING FORMAT

SERIES	# OF HEADS	LAMP SUFFIX	COLOR	VOLTAGE
ELF2= Par18 head	**Blank**= Single head **D**= Double heads **T**= Triple heads	/ _____[1] [1] Choose from lamp selection chart	**M**= Mist White **B**= Black	**6**= 6 VDC **12**= 12 VDC **24**= 24 VDC

EXAMPLE: ELF2/LH5-M6

REMOTE HEAD & UNIT HEAD ELF3 SERIES

Thermoplastic MR16 Lamp Head

Available Mounted on:
• TBR Series • RD Series • S12E Series • MG & MN Series
• PG & P12G Series • PN & P12N Series • PQ & P12Q Series

TYPE _____

CATALOG # _____

NOTES _____

FEATURES

Description

- Indoor use
- Available as a single, double or triple Par 18 size MR16 lighting head
- Thermoplastic construction
- Fully adjustable tool-less aiming swivel head
- Specular parabolic reflector and prismatic lens for wide-beam, even light distribution
- Snap-out lens for easy lamp replacement.

Finish

- Mist white or black

Mounting

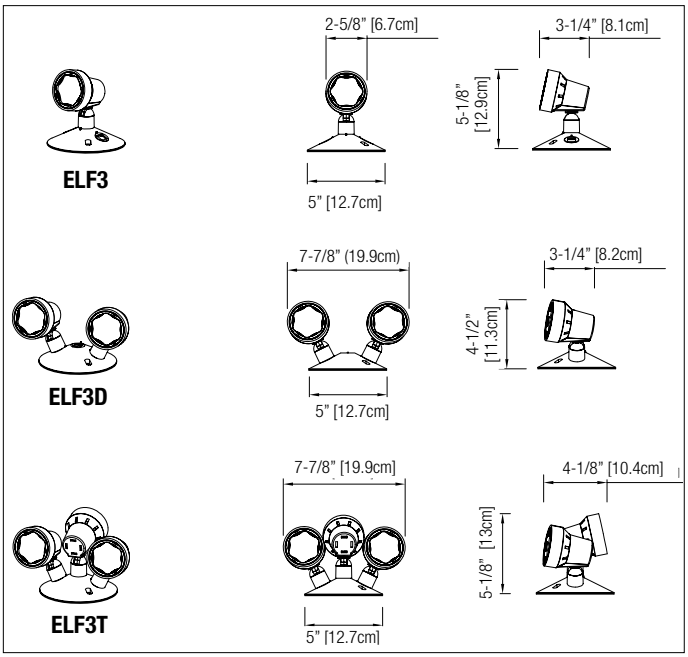
- Surface Mount
- Includes a 5" round universal canopy plate with 3 knockouts (supplied with 2 plugs) for use with single, double or triple head mounting.
- Mounts to either a standard 4" octagonal or a single gang electrical box. (4-gang plate for ELF3D optional).

Approval

- UL Listed

DIMENSIONS

Dimensions are approximate and subject to change.



ACCESSORIES

(Order as a separate item)

Wire Guard	**WG8-L**

LAMP SELECTION CHART

MR 16 HALOGEN LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
M5	6	5	34	580.0072-L
M6	6	6	40	580.0074-L
M10	6	10	74	580.0079-L
M10	12	10	84	580.0099-L
M12	12	12	80	580.0080-L
M20	12	20	150	580.0075-L
M12	24	12	82	580.0070-L

MR 16 LED LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
LD1	6	4	130	580.0097-L
LD7	12	4	170	580.0093-L
LD9	12	5	340	580.0104-L
LD10	12	6	540	580.0106-L
LD13	24	4	200	580.0098-L
LD14	24	6	590	580.0100-L

ORDERING FORMAT

SERIES	# OF HEADS	LAMP SUFFIX	COLOR	VOLTAGE
ELF3= MR16 Par18 head	**Blank**= Single head **D**= Double heads **T**= Triple heads	/ _____ [1] [1] Choose from lamp selection chart	**-B**= Black **-M**= Mist White	**6**= 6 VDC **12**= 12 VDC **24**= 24 VDC

EXAMPLE: ELF3/M10-M6

Available Mounted on:
• TBR Series • RD Series • S12E Series • MG & MN Series
• PG & P12G Series • PN & P12N Series • PQ & P12Q Series

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

REMOTE HEAD & UNIT HEAD ELF623 SERIES

Thermoplastic Square Lamp Head

FEATURES

Description

- Indoor use
- Available as a single, or double square lighting head
- Thermoplastic construction
- Fully adjustable tool-less aiming swivel
- Specular parabolic reflector and prismatic lens for wide-beam, even light distribution
- Snap-out lens for easy lamp replacement.

Finish

- Mist white or black

Mounting

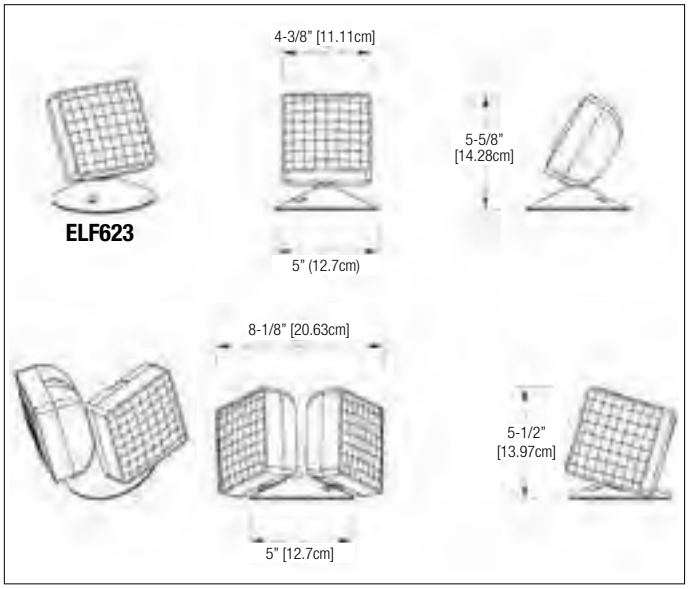
- Surface Mount
- Includes a 5" round universal canopy plate with 3 knockouts (supplied with 2 plugs) for use with single or double head mounting.
- Mounts to either a standard 4" octagonal or a single gang electrical box. (4-gang plate for ELF623D optional).

Approval

- UL Listed

DIMENSIONS

Dimensions are approximate and subject to change.



ACCESSORIES

(Order as a separate item)

Wire Guard	**WG8-L**

LAMP SELECTION CHART

WEDGE BASE INCANDESCENT LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
L5	6	5.4	68	570.0012-L
L7	6	7.2	100	570.0026-L
L9	6	9	150	570.0016-L
L9	12	9	138	570.0025-L
L12	12	12	150	570.0028-L
L18	12	18	264	570.0029-L
L9	24	9	113	570.0045-L
L18	24	18	239	570.0046-L

BI-PIN HALOGEN LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
LH4	6	6	113	580.0012-L
LH5	6	8	163	580.0013-L
LH7	6	10	201	580.0017-L
LH6	6	12	239	580.0011-L
LH8	12	8	163	580.0014-L
LH3	12	12	276	580.0015-L
LH9	12	14	302	580.0016-L

ORDERING FORMAT

SERIES	# OF HEADS	LAMP SUFFIX	COLOR	VOLTAGE
ELF623= Square Head	**Blank**= Single head **D**= Double heads	/ _____[1] [1] Choose from lamp selection chart	**-M**= Mist White **-B**= Black	**6**= 6 VDC **12**= 12 VDC **24**= 24 VDC

EXAMPLE: ELF623/L9-M12

REMOTE HEAD & UNIT HEAD ELF645 SERIES

Thermoplastic PAR36 Lamp Head

Available Mounted on:
• TBR Series • RD Series • S12E Series • MG & MN Series
• PG & P12G Series • PN & P12N Series • PQ & P12Q Series

TYPE _____

CATALOG # _____

NOTES _____

FEATURES

Description

- Indoor use
- Available as a single, double or triple Par 36 size lighting head
- Thermoplastic construction
- Fully adjustable tool-less aiming swivel head
- Specular parabolic reflector and prismatic lens for wide-beam, even light distribution
- Snap-out lens for easy lamp replacement
- Sealed Beam lamps not compatible with Nickel-Cadmium battery

Finish

- Mist white, black or gray

Mounting

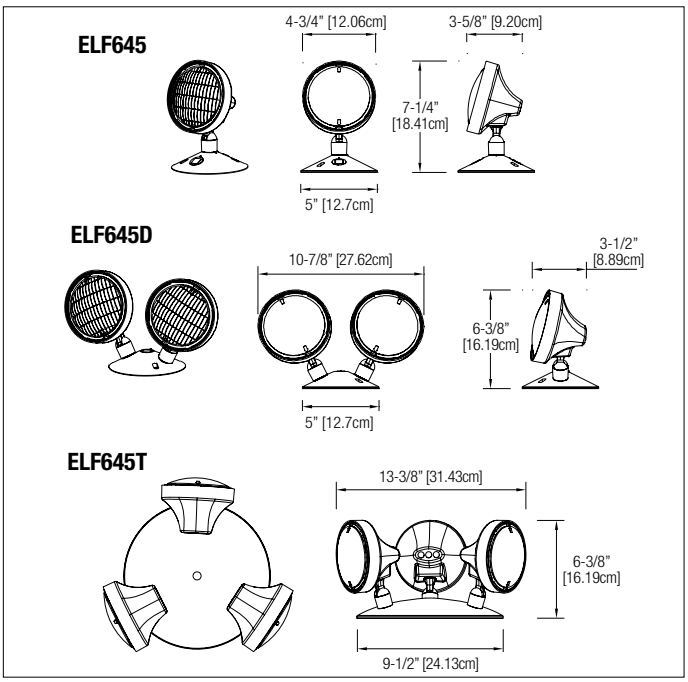
- Surface Mount
- Includes a 5" round universal canopy plate with 3 knockouts (supplied with 2 plugs) for use with single, double or triple head mounting
- Mounts to either a standard 4" octagonal or a single gang electrical box (4-gang plate for ELF645D optional)

Approval

- UL Listed

DIMENSIONS

Dimensions are approximate and subject to change.



ACCESSORIES (Order as a separate item)

Wire Guard	WG9-L

LAMP SELECTION CHART

WEDGE BASE INCANDESCENT LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
L5	6	5.4	68	570.0012-L
L7	6	7.2	100	570.0026-L
L9	6	9	150	570.0016-L
L9	12	9	138	570.0025-L
L12	12	12	150	570.0028-L
L18	12	18	264	570.0029-L
L9	24	9	113	570.0045-L
L18	24	18	239	570.0046-L

BI-PIN HALOGEN LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
LH4	6	6	113	580.0012-L
LH5	6	8	163	580.0013-L
LH7	6	10	201	580.0017-L
LH6	6	12	239	580.0011-L
LH8	6	20	402	580.0022-L
LH8	12	8	163	580.0014-L
LH3	12	12	276	580.0015-L
LH9	12	14	302	580.0016-L
LH2	12	20	314	580.0027-L

PAR36 SEALED BEAM INCANDESCENT LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
7613	6	8	130	550.0018-L
4042	6	12	170	550.0030-L
4014	6	18	250	550.0016-L
4510	6	25	350	550.0017-L
4515	6	30	420	550.0035-L
4044	12	12	190	550.0026-L
4414	12	18	210	550.0027-L
4446	12	25	395	550.0023-L
25WFL	12	25	360	550.0028-L
25VWFL	12	25	160	550.0050-L
50NSP	12	50	300	550.0043-L
50WFL	12	50	300	550.0029-L

PAR36 SEALED BEAM HALOGEN LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
H7556	6	6	107	550.0022-L
H7551	6	8	155	550.0036-L
H7552	6	10	190	550.0037-L
H7553	6	12	225	550.0019-L
H7554	6	20	380	550.0021-L
H7555	12	8	160	550.0024-L
H7557	12	12	230	550.0025-L
H7616	12	37	700	550.0047-L
H7614	12	50	950	550.0012-L

ORDERING FORMAT

SERIES	# OF HEADS	LAMP SUFFIX	COLOR	VOLTAGE
EF645= Par36 head	**Blank**= Single head **D**= Double head **T**= Triple head	/ _____* *Choose from lamp selection chart	**-M**= Mist white (not available with 30W or higher lamp) **-B**= Black (not available with 30W or higher lamp) **-G**= Gray	**6**= 6 VDC **12**= 12 VDC **24**= 24 VDC

EXAMPLE: ELF645/LH6-M6

Available Mounted on:
• FG & FG12 Series

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

REMOTE HEAD & UNIT HEAD ELF647 SERIES

Thermoplastic Weather-Resistant PAR36 Lamp Head

FEATURES

Description

- Outdoor use
- Available as a single, double or triple Par 36 size lighting head
- Thermoplastic construction with aluminum canopy plate
- Fully adjustable aiming swivel head
- Specular parabolic reflector and prismatic lens to assure a wide-beam, even light distribution
- Sealed for rain; dust-tight; corrosion resistant
- Sealed Beam lamps not compatible with Nickel-Cadmium battery

Finish

- Mist white, black or gray

Mounting

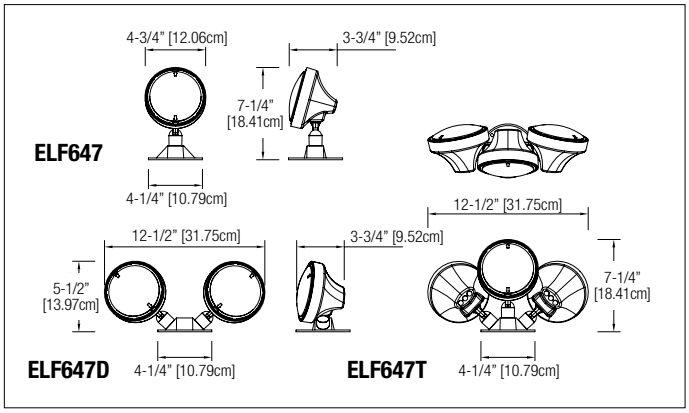
- Surface Mount
- Includes a universal aluminum canopy
- Mounts to a standard 4" octagonal electrical box

Approval

- UL Listed
- Weather Resistant

DIMENSIONS

Dimensions are approximate and subject to change.



ACCESSORIES

(Order as a separate item)

Wire Guard	**WG9-L**

LAMP SELECTION CHART

WEDGE BASE INCANDESCENT LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
L5	6	5.4	68	570.0012-L
L7	6	7.2	100	570.0026-L
L9	6	9	150	570.0016-L
L9	12	9	138	570.0025-L
L12	12	12	150	570.0028-L
L18	12	18	264	570.0029-L
L9	24	9	113	570.0045-L
L18	24	18	239	570.0046-L

BI-PIN HALOGEN LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
LH4	6	6	113	580.0012-L
LH5	6	8	163	580.0013-L
LH7	6	10	201	580.0017-L
LH6	6	12	239	580.0011-L
LH8	6	20	402	580.0022-L
LH8	12	8	163	580.0014-L
LH3	12	12	276	580.0015-L
LH9	12	14	302	580.0016-L
LH2	12	20	314	580.0027-L

PAR36 SEALED BEAM INCANDESCENT LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
7613	6	8	130	550.0018-L
4042	6	12	170	550.0030-L
4014	6	18	250	550.0016-L
4510	6	25	350	550.0017-L
4515	6	30	420	550.0035-L
4044	12	12	190	550.0026-L
4414	12	18	210	550.0027-L
4446	12	25	395	550.0023-L
25WFL	12	25	360	550.0028-L
25VWFL	12	25	160	550.0050-L
50NSP	12	50	300	550.0043-L
50WFL	12	50	300	550.0029-L

PAR36 SEALED BEAM HALOGEN LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
H7556	6	6	107	550.0022-L
H7551	6	8	155	550.0036-L
H7552	6	10	190	550.0037-L
H7553	6	12	225	550.0019-L
H7554	6	20	380	550.0021-L
H7555	12	8	160	550.0024-L
H7557	12	12	230	550.0025-L
H7616	12	37	700	550.0047-L
H7614	12	50	950	550.0012-L

ORDERING FORMAT

SERIES	# OF HEADS	LAMP SUFFIX	COLOR	VOLTAGE
ELF647= Weather Resistant head	**Blank**= Single head **D**= Double heads **T**= Triple heads	/ _____[1] [1] Choose from lamp selection chart	**-M**= Mist white (not available with 30W or higher lamp) **-B**= Black (not available with 30W or higher lamp) **-G**= Gray	**6**= 6 VDC **12**= 12 VDC **24**= 24 VDC

EXAMPLE: ELF647/H7551-B6

ELF640 SERIES

ELF640 Vandal Resistant

NEW! **VANDAL RESISTANT ELF640**

TYPE _____

CATALOG # _____

NOTES _____

FEATURES

Description

- ELF640 Vandal Resistant Indoor use only
- ELF640 choice of cast aluminum or plastic back plate
- ELF640 Vandal Resistant comes standard with Phillips head screws, optional tamper proof screws
- Available as single or double MR16 lamp size remote lighting fixture
- Include clear polycarbonate UV and impact resistant cover
- Tool-less, fully adjustable, aiming swivel head and easy lamp replacement

Finish

- White, Black or Gray

Mounting

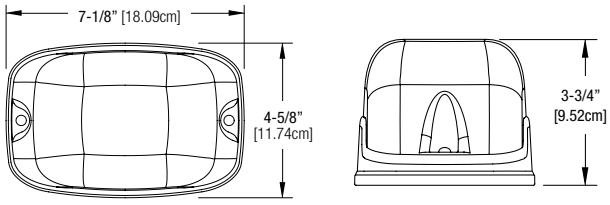
- Surface Mount
- Includes a back plate for mounting to a standard 4" octagonal electrical box

Approval

- UL Listed
- Vandal Resistant

DIMENSIONS

Dimensions are approximate and subject to change.



LAMP SELECTION CHART

MR 16 HALOGEN LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
M6	6	6	40	580.0074-L
M10	6	10	74	580.0079-L
M10	12	10	74	580.0099-L
M12	12	12	80	580.0080-L
M12	24	12	80	580.0070-L
M20[1]	12	20	270	580.0064-L
M20[1]	24	20	240	580.0077-L
MH20[1]	12	20-H	400	580.0068-L

[1] Not available with ELF640P Series (12W lamp max).

MR 16 LED LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
LD1	6	4	130	580.0097-L
LD7	12	4	170	580.0093-L
LD9	12	5	340	580.0104-L
LD10	12	6	510	580.0106-L
LD13	24	4	200	580.0098-L

ORDERING FORMAT - ELF640 SERIES

SERIES	LAMP SUFFIX	COLOR	VOLTAGE	OPTIONS
ELF640P= All polycarbonate single head for dry location[1] **ELF640PD**= All polycarbonate double head for dry location[1] **ELF640**= Die-Cast back plate single head for dry location **ELF640D**= Die-Cast back plate double head for dry location [1] Up to 12W lamps max and 4W MR16 LED max	/ _____[1] [1] Choose from lamp selection chart	**-M**= White **-B**= Black **-G**= Gray	**6**= 6 VDC **12**= 12 VDC **24**= 24V DC	**Blank**= no option **T**= tamper proof screws

EXAMPLE: ELF640P/M12-M12

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

ELF650 SERIES

ELF650 NEMA-4X & NSF Certified

FEATURES

Description

- ELF650 NEMA-4X and NSF Certified Indoor or Outdoor use
- ELF650 NEMA-4X and NSF Certified with choice of fully gasketed cast aluminum or plastic back plate[1]
- ELF650 NEMA-4X and NSF Certified comes standard with Phillips head screws and tamper proof screws
- Available as single or double MR16 lamp size remote lighting fixture
- Include clear polycarbonate UV and impact resistant cover
- Tool-less, fully adjustable, aiming swivel head and easy lamp replacement

Finish

- White, Black or Gray

Mounting

- Surface Mount
- Includes a back plate for mounting to a standard 4" octagonal electrical box

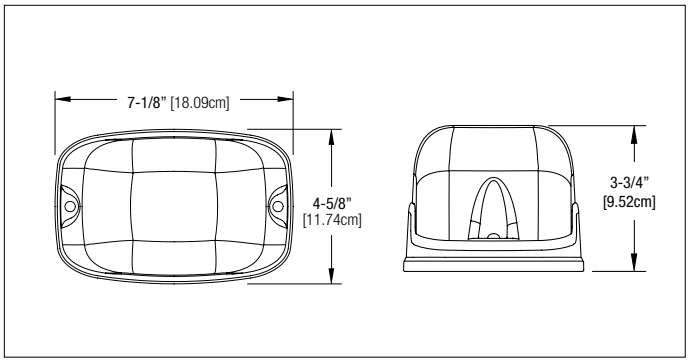
Approval

- UL Listed
- Vandal Resistant
- NEMA-4X[1]
- NSF Rated

[1] ELF650P & ELF650PD units are NEMA-4X Certified when installed using a circular NEMA-4X rated junction box (sold seperatly by Thomas&Betts under P/N 091647-L)

DIMENSIONS

Dimensions are approximate and subject to change.



LAMP SELECTION CHART

MR 16 HALOGEN LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
M6	6	6	40	580.0074-L
M10	6	10	74	580.0079-L
M10	12	10	74	580.0099-L
M12	12	12	80	580.0080-L
M12	24	12	80	580.0070-L
M20[1]	12	20	270	580.0064-L
M20[1]	24	20	240	580.0077-L
MH20[1]	12	20-H	400	580.0068-L

[1] Not available with ELF650P Series (12W lamp max).

MR 16 LED LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
LD1	6	4	130	580.0097-L
LD7	12	4	170	580.0093-L
LD9	12	5	340	580.0104-L
LD10	12	6	510	580.0106-L
LD13	24	4	200	580.0098-L

ORDERING FORMAT - ELF650 SERIES

SERIES	LAMP SUFFIX	COLOR	VOLTAGE
ELF650= Die-Cast back plate NEMA-4X and NSF Certified with single head **ELF650D**= Die-Cast back plate NEMA-4X and NSF Certified with double head **ELF650P**= All polycarbonate NEMA-4X and NSF Certified with single head[1] **ELF650PD**= All polycarbonate NEMA 4X and NSF Certified with double head[1]	/_____[1]	**-M**= Mist White **-B**= Black **-G**= Gray	**6**= 6 VDC **12**= 12 VDC **24**= 24 VDC
[1] Up to 12W lamps max and 4W MR16 LED max	[1] Choose from lamp selection chart		

EXAMPLE: ELF650/M12-M12

REMOTE FIXTURE ELF647C SERIES

Class I Division 2, Groups A, B, C and D Certified Remote Fixture

TYPE _____

CATALOG # _____

NOTES _____

FEATURES

Description

- Indoor use
- Available as a single or double Par 36 size
- Thermoplastic construction, with gasketed aluminum canopy plate and junction box
- Fully adjustable tool-less aiming swivel head
- Specular parabolic reflector and prismatic lens for wide-beam, even light distribution

Finish

- Gray only

Mounting

- Surface Mount
- Includes a universal aluminum canopy and junction box
- Conduit entry ½" NPT

Approval

- UL Listed
- Class I, Division 2, Groups A, B, C and D

ACCESSORIES

(Order as a separate item)

Wire Guard	**WG6-L**

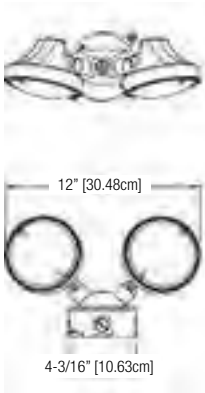
LAMP SELECTION CHART

PAR36 SEALED BEAM HALOGEN LAMPS				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
H7553	6	12	255	550.0019-L
H7557	12	12	230	550.0025-L

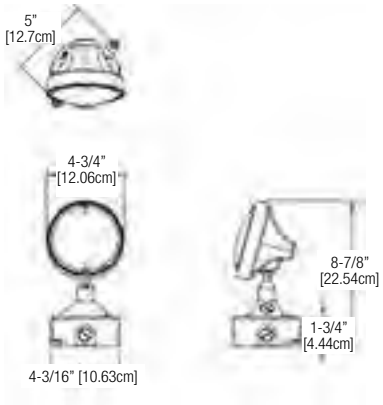
DIMENSIONS

Dimensions are approximate and subject to change.

ELF647DC



ELF647C



ORDERING FORMAT

SERIES	LAMP SUFFIX	COLOR
ELF647C= Single lamp remote fixture **ELF647DC**= Double lamp remote fixture	/ _____[1]	**-Blank**= Gray **-M**= Mist White **-B**= Black w

[1] Choose from lamp selection chart

EXAMPLE: ELF647C/H7553

TYPE _____

CATALOG # _____

NOTES _____

REMOTE FIXTURE ELF651 SERIES

Class I Division 2, Groups A, B, C and D Certified Remote Fixture

FEATURES

Description

- Available with single or double lamp heads with high-efficiency MR16 halogen lamps of 10W, 12W or 20W or high-output LEDs of 4W, 5W or 6W
- Die-Cast aluminum back plate with gasket. Clear polycarbonate cover, UV and impact resistant
- Input voltage: 6V, 12V, 24V or 120V
- Easy installation on a 4" octagonal box (included). Comes standard with tamper-proof screws and bit
- Extreme operational temperature range: -40ºF to +104ºF (-40ºC to +40ºC)
- Indoor use
- Fully adjustable tool-less aiming swivel
- Tool-less easy lamp replacement

Finish

- Gray

Mounting

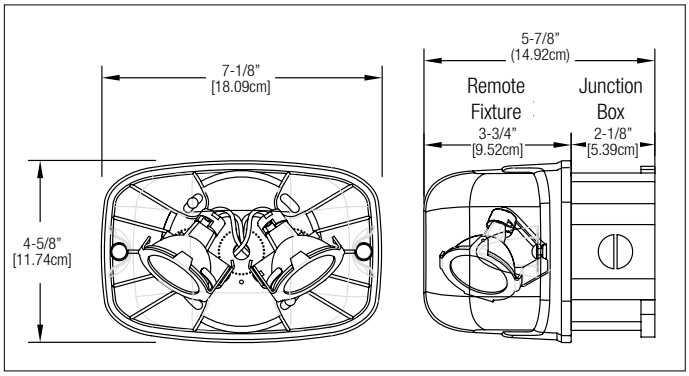
- Surface Mount
- Conduit entry 1/2" NPT

Approval

- Evaluated to UL 844 Standard for Class I Division 2, Groups A, B, C and D. Temperature Codes: T3B (10W and 12W MR16 lamps) and T2C (20W MR16 lamps) and T4A and T5 MR16 LED

DIMENSIONS

Dimensions are approximate and subject to change.



LAMP SELECTION CHART

MR16 HALOGEN LAMPS						
LAMP SUFFIX	VOLT	WATT	LUMENS	REPLACEMENT NUMBER	TEMP CODE	MAX TEMP
M10	6	10	74	580.0079-L	T3B	329°F/165°C
M12	12	12	80	580.0080-L	T3B	329°F/165°C
MH20	12	20-H	400	580.0068-L	T2C	446°F/230°C
M12	24	12	82	580.0070-L	T3B	329°F/165°C
M20	24	20	240	580.0077-L	T3B	221°F/105°C
M20	120	20	100	580.0065-L	T2C	257°F/125°C

MR16 LED LAMPS						
LAMP SUFFIX	VOLT	WATT	LUMENS	REPLACEMENT NUMBER	TEMP CODE	MAX TEMP
LD1	6	4	200	580.0097-L	T4A	248°F/120°C
LD7	12	4	220	580.0093-L	T5	212°F/100°C
LD9	12	5	340	580.0104-L	T4A	248°F/120°C
LD10	12	6	540	580.0106-L	T4	275°F/135°C
LD13	24	4	220	580.0098-L	T5	212°F/100°C
LD26	120	4	230	580.0113-L	T4A	248°F/120°C

ORDERING FORMAT

SERIES	LAMP SUFFIX	COLOR	VOLTAGE
ELF651= Single lamp remote fixture **ELF651D**= Double lamp remote fixture	/ _____[1]	**-G**= Gray	**6**= 6 VDC **12**= 12 VDC **24**= 24 VDC **120**= 120 VAC/VDC

[1] Choose from lamp selection chart

EXAMPLE: ELF651/M10-G6

REMOTE FIXTURE EPF401 SERIES

Hazardous Location Remote Fixtures

TYPE _____

CATALOG # _____

NOTES _____

FEATURES

Description

- Indoor use
- Available as a single or double
- Heavy cast aluminum
- Pyrex Lenses

Finish

- Painted Grey

Mounting

- Surface Mount: Wall or Ceiling
- Pendant Mount: Single Head or Double Head
- Pendant mount including hazardous location elbows, swivels and conduit extension pipe (6" increments)
- Combination hazardous location junction box/mounting plate
- Conduit entry ½" NPT

Approval

- UL Listed for use in Paint Spray Areas (75W max)
- Class I, Division 1&2, Groups C and D
- Class II, Division 1&2, Groups E, F and G
- Class III, Division 1&2, (150W max)
- Complies with NEC, OSHA and NEMA for above classes and groups

OPTIONS

(Add Suffix to Model No.)	Suffix
Angle Reflector: Highly reflective white finish inside and out. Attaches to globe holder ring with four screws	 -AG
Dome Reflector: Highly reflective white finish inside and out. Attaches to globe holder ring with four screws	 -DM
Guard: One-piece aluminum casting construction. Attaches to globe holder ring with four screws	 -GD

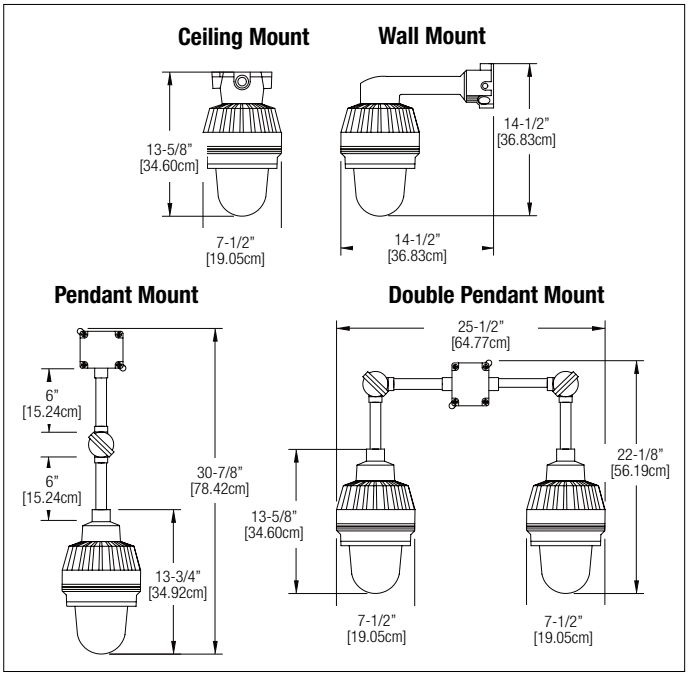
LAMP SELECTION CHART

HIGH INTENSITY TUNGSTEN				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
L9	6	9	126	570.0010-L
L18	6	18	300	570.0037-L
L9	12	9	126	570.0011-L
L18	12	18	276	570.0030-L
L25	12	25	400	570.0031-L

BI-PIN HALOGEN				
LAMP SUFFIX	VOLTAGE	WATTAGE	LUMENS	REPLACEMENT #
LH4	6	6	113	580.0012-L
LH5	6	8	163	580.0013-L
LH7	6	10	200	580.0017-L
LH6	6	12	240	580.0011-L
LH1	6	15	210	580.0086-L
LH8	12	8	163	580.0030-L
LH3	12	12	276	580.0015-L

DIMENSIONS

Dimensions are approximate and subject to change.



ORDERING FORMAT

SERIES	MOUNTING	LAMP SUFFIX	VOLTAGE	OPTIONS
EPF401= Single Lamp Remote Fixture	**W**= Wall Mount **C**= Ceiling Mount **P**= Pendant Mount **D**= Double Pendant Mount	/ _____[1] [1] Choose from lamp selection chart	**6**= 6 VDC **12**= 12 VDC	**Blank**= No Option **-AG**= Angle Reflector **-DM**= Dome Reflector **-GD**= Guard

EXAMPLE: EPF401W/L96

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

X402 EXIT SIGN SERIES

Class I, Division 1 & 2, Groups C and D
Class II, Division 1 & 2, Groups E, F and G

FEATURES

Description
- Indoor use
- Available as single or double face with red or green Legend
- Heavy cast aluminum
- Pyrex Lenses

Finish
- Painted Grey

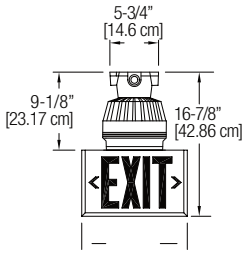
Mounting
- Surface Mount: Wall or Ceiling
- Pendant Mount
- Pendant mount including hazardous location elbows, swivels and conduit extension pipe (6" increments)
- Combination hazardous location junction box/mounting plate
- Conduit entry ½" NPT

Approval
- UL Listed for use in Paint Spray Areas (75W max)
- Class I, Division 1&2, Groups C and D
- Class II, Division 1&2, Groups E, F and G
- Class III, Division 1&2, (150W max)
- Complies with NEC, OSHA and NEMA for above classes and groups

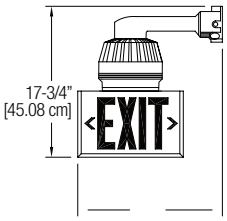
DIMENSIONS

Dimensions are approximate and subject to change.

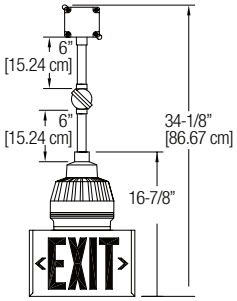
Ceiling Mount



Wall Mount



Pendant Mount



LAMP SELECTION CHART, X402 EXIT SIGN (ONLY) (lamp automatically specified in model number based on voltage of unit)

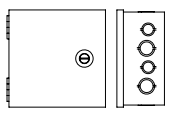
LAMP TYPE	VOLTAGE	LAMP WATTAGE	LAMP TYPE	AVERAGE LIFE (HOURS)	LAMP SUFFIX	REPLACEMENT LAMP PART #
Quartz Bi-Pin	6V	15W	JC-6V15W	2000	6	580.0086-L
	12V	25W	25A-12	1000	12	570.0071-L
Medium Base	24V		143A	1000	24	570.0118-L
	120V		A19	2500	120	570.0136-L

ORDERING FORMAT

AC-Only or AC/DC Exit Sign

Faces	Series	Mounting	Lamp	Legend color
1= Single Face **2=** Double Face	**X402**	**C=** Ceiling **W=** Wall **P=** Pendant	**-6=** 6V **-12=** 12V **-24=** 24V **-120=** 120V	**R=** Red **G=** Green

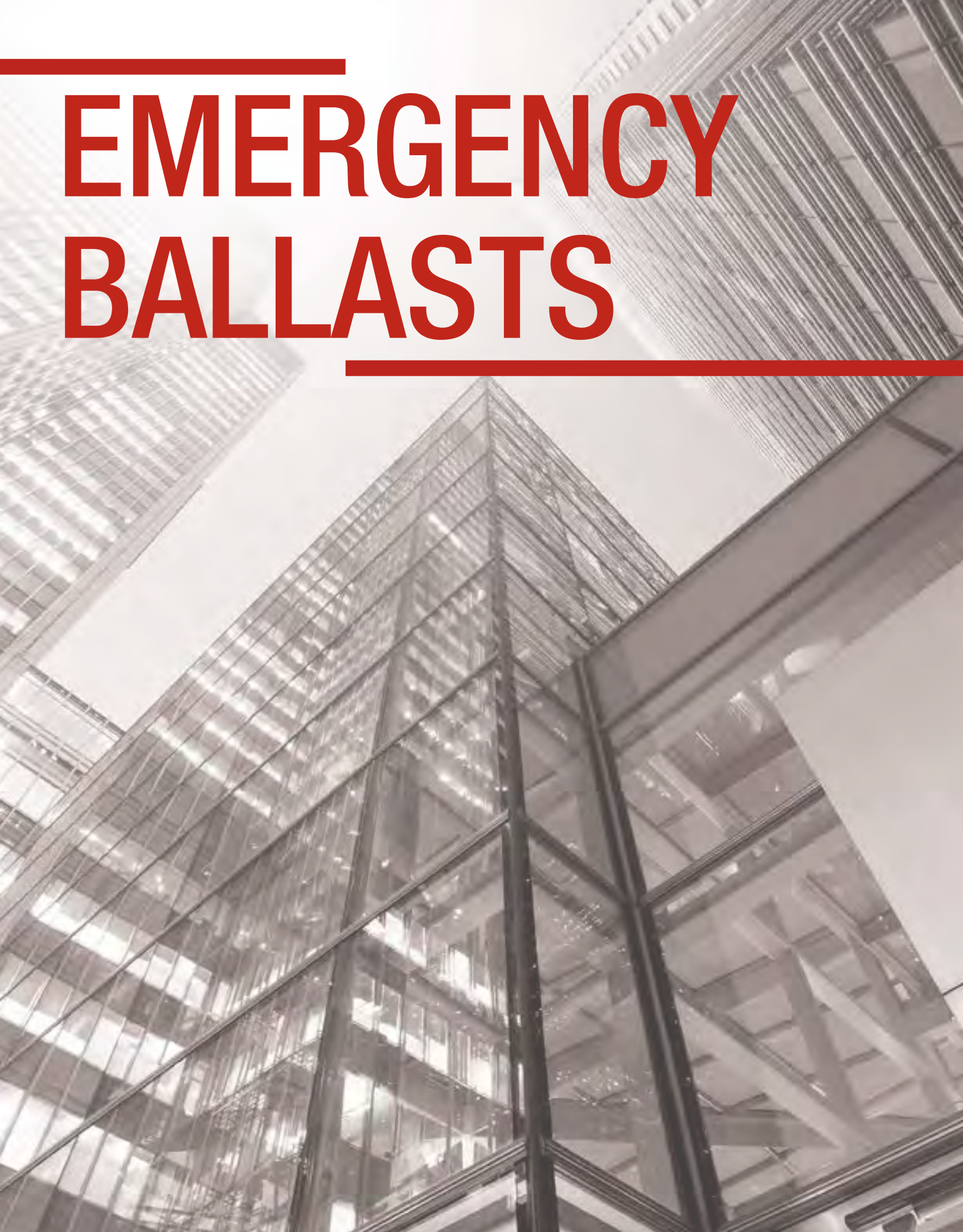
Transfer Panel (Required for the operation of the X402 AC/DC Exit Sign)



AC voltage	DC voltage	Series	Watts
120= 120V AC **277=** 277V AC	**-6=** 6V DC **-12=** 12V DC **-24=** 24V DC	**-TS**	**-25=** 25W **-50=** 50W **-75=** 75W **-100=** 100W

EXAMPLE: AC-Only or AC/DC Exit Sign: 1X402C12R, Transfer Panel (needed for AC/DC operation): 12012TS25

EMERGENCY BALLASTS



Emergency Ballasts

INTRODUCTION

118

INTRODUCTION
Ballast/Lamp Reference Chart

119

EMERGENCY BALLAST
LADL7 Series
750 Lumens
Damp location Listed

120

EMERGENCY BALLAST
LADL12 Series
1350 Lumens
Damp location listed

121

EMERGENCY BALLAST
LADL20-N Series
750 Lumens
Damp location listed

122

EMERGENCY BALLAST
LADL28 Series
500 Lumens

123

EMERGENCY BALLAST
LADL30-N Series
3000 Lumens
Damp location listed

124

EMERGENCY BALLAST
LADL32 Series
500 Lumens
Damp location listed

125

EMERGENCY BALLAST
LADL540 Series
1300 Lumens

126

TRANSFER SWITCH
EPC-1-L Series

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About Emergency Fluorescent Ballast packs and AC Inverters

About Emergency Fluorescent Ballast Packs and AC Inverters

Emergency Fluorescent Ballast Packs and AC Inverters are completely self-contained battery-powered systems designed to invert DC battery current to AC current in order to operate AC lighting loads in the event of an emergency.

Under normal conditions: AC current flows into the Ballast or Inverter, keeping the DC batteries charged, and AC current continues to power the AC lighting fixture.

In an Emergency situation: When AC current stops flowing into the Ballast or Inverter, the Inverter converts DC battery current into AC current to power the AC lighting fixture.

Lumens and Wattage Capacities

Emergency Fluorescent Ballasts come in various lumen output capacities and are designed to operate only 1 or 2 lamps in a fluorescent fixture type.

AC Inverters are based on total wattage capacities and are designed to operate multiple lighting fixtures with different lamp types in an emergency situation.

Emergency Fluorescent Ballast:

Designed to operate fluorescent lighting loads, these ballasts can be mounted directly on or in the existing fluorescent fixture and are meant to operate one or two lamps within that fixture.

Emergency Fluorescent Ballasts are selected based on the lumen output levels needed in an emergency situation and the lamp type being used in the fluorescent fixture during normal AC operation.

Mini Interruptible Inverter Systems:

These systems are designed to keep incandescent, fluorescent, and LED lighting operating properly when there is a break in power. Available in 32-720W models.

Single Phase Transfer IPS Systems:

These systems are designed to keep incandescent, fluorescent, and LED lighting operating properly when there is a break in power. The transfer time is 50 milliseconds. Available in single phase from 1500VA to 16700VA.

Single Phase Fast Transfer Systems (UPS):

These systems are designed to operate in much the same way as the IPS system, but with a transfer time that is sufficient to keep HID lighting on and operate incandescent, fluorescent, and LED lighting loads with no break in power to the critical load upon failure or restoration of the AC power source. Available in single phase from 500VA to 16700VA.

Three Phase Fast Transfer Systems (UPS):

These fast transfer systems operate on 3 phase 4 wire (120/208VAC or 277/480VAC) utility power.

Available for 3 phase applications from 4800VA to 50000VA. The transfer time is sufficient to keep HID lighting on and operate incandescent, fluorescent, and LED lighting loads.

Ballast/Lamp Reference Chart

MODEL #	LADL7	LADL12	LADL20-N	LADL28	LADL30-N	LADL32	LADL540
Lumens	750	1350	750	500	3000	500	1300
Lamp Type (# of Lamps)	LINEAR LAMPS						
2'-4' Rapid, Instant, Energy Saving, T8 thru T12 (1)							
2'-4' Rapid, Instant, Energy Saving, T8 thru T12, HO & VHO (2)							
2'-8' Rapid, Instant, Energy Saving, T8 thru T12, HO & VHO (1)							
F15 T8 (1)					X		
F17 T8 (1)				X	X	X	X
F17 T8 (2)					X		
F25 T8 (1)							
F25 T8 (2)							
F28 T8 (1)					X		
F32 T8 (1)	X	X		X	X	X	X
F32 T8 (2)	X	X			X		
F40 T8 (1)							
F096 T8 59W (1)					X		
14W T5 (1)	X	X		X	X		X
14W T5 (2)	X	X		X	X		X
21W T5 (1)	X	X		X	X		X
21W T5 (2)	X	X		X	X		X
24W T5 (1)	X	X					
28W T5 (1)	X	X		X	X	X	X
28W T5 (2)	X	X		X	X	X	X
39W T5 (1)	X	X			X		X
54W T5 HO (1)	X	X			X		X
54W T5 HO (2)	X	X			X		X
F20 T12 (1)					X	X	X
F20 T12 (2)					X		
F40 T12 (1)					X	X	X
F40 T12 (2)					X		
F48 T12 (1)							
F96 T12 60W (1)							
Lamp Type (# of Lamps)	COMPACT LAMPS – BIAX LAMPS						
18W Long Compact (1)			X		X		X
18W Long Compact (2)			X		X		X
24W Long Compact (1)			X		X		X
24W Long Compact (2)			X		X		X
36W Long Compact (1)	X	X	X		X		X
36W Long Compact (2)	X	X	X		X		X
40W Long Compact (1)	X	X			X	X	X
40W Long Compact (2)		X			X		
50W Long Compact (1)	X	X			X		X
50W Long Compact (2)	X	X			X		X
55W Long Compact (1)					X		
7W PL CF 2-Pin (1)							
9W PL CF 2-Pin (1)							
13W PL CF 2-Pin (1)							
18W PL CF 2-Pin (1)							
26W PL CF 2-Pin (1)							
13W PL CF 4-Pin (1)			X	X	X		X
13W PL CF 4-Pin (2)			X		X		
18W PL CF 4-Pin (1)			X	X	X		X
18W PL CF 4-Pin (2)			X		X		
26W PL CF 4-Pin (1)			X	X	X		X
26W PL CF 4-Pin (2)			X		X		
32W PL CF 4-Pin (1)	X	X	X		X		X
32W PL CF 4-Pin (2)	X	X	X		X		
42W PL CF 4-Pin (1)			X		X		X
42W PL CF 4-Pin (2)					X		
57W PL CF 4-Pin (1)							
57W PL CF 4-Pin (2)							
70W PL CF 4-Pin (1)							
20W Circline (1)							
22W Circline T9 (1)							
22W Circline T5 (1)							
40W Circline T8 (1)							
40W Circline T5 (1)							
55W Circline T5 (1)							
F28 2D (1)							
F28 2D (2)							
F38 2D (1)							
F38 2D (2)							

LADL7 SERIES

Convert new or existing fluorescent fixtures into emergency lighting units
750 lumen emergency ballast

TYPE _____

CATALOG # _____

NOTES _____

FEATURES

Housing
- Steel housing contains, battery, battery charger, transfer circuit and high frequency inverter
- Optional end caps available
- Operating temperature 68°F to 122°F (20°C to 50°C)

Mounting
- Internal or external mounting to a fluorescent fixture

Lamp Type Operation (refer to Ballast/Lamp Reference Chart for specific lamp type)
- One 14-54W or two 14-39W
- (2'-4') T5 and T8 lamps with instant start or rapid start or one 4-pin
- 18-50W long compact fluorescent or one 4-pi
- 32W compact fluorescent or one 24-32W U-Bend lamp
- T5 Lamps
- Long Compact Lamps
- 4-Pin Compact Fluorescent Lamps

Lumen Output
- (1) Lamp 440-750 Lumens
- (2) Lamps 400-690 Lumens

Electronics
- Can be wired to operate switched, un-switched or normally off fixtures without affecting normal operation
- Will cold start and illuminate lamps
- Fully Automatic solid state charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection
- Battery connector prevents battery discharge during installation

Controls
- Red charger monitor LED indicates charging of the battery and AC present
- Momentary test switch allows for quick operational check of entire system

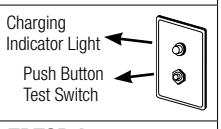
Sealed Maintenance-Free Battery
- Nickel-Cadmium battery
- Provides 90 minutes of emergency operation

Power Requirements
- Dual voltage 120/277VAC, 60Hz, 3.7W

Approvals
- UL 924 Standards
- Damp location listed

Warranty (subject to proper installation and maintenance)
- Ballast has a five year full warranty

ACCESSORIES (order as separate item)

 External mounting kit includes wire bundle cover	**EC6**
Remote Test Switch (Metal faceplate)	**PSW**
Remote Test Switch (Plastic faceplate)	**PSW1**
Recommended for inaccessible locations. Test switch and charging indicator on a single mounting plate. 	
Replacement Test Switch	**TBTSP-L**

ORDERING FORMAT

SERIES
LADL7

EXAMPLE: LADL7

SPECIFICATIONS

Supply and install **Lightalarms® LADL7** Series.

The **LADL7** fluorescent emergency ballast shall be a single steel housing self-contained unit including a sealed maintenance-free Nickel-Cadmium battery, battery charger, transfer circuit and high frequency inverter. The unit shall be rated 120/277VAC, 60 Hz and be UL924 listed.

The **LADL7** fluorescent emergency ballast, sealed dust-tight relay inverter charger transfer circuit shall be of a solid state design being automatic and instantaneous capable of supplying an initial 750 lumens output to cold start, operate switched, un-switched or normally off fixtures without affecting normal operation. The battery shall supply emergency operation for a minimum of 90 minutes and shall be capable of full recharge in compliance with UL924 specifications.

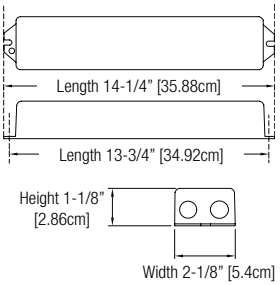
The unit shall be furnished with, red charger monitor LED indicates charging of the battery and AC present to unit as well as a momentary test switch allows for quick operational check of entire system.

Every **LADL7** Series unit shall be fully warranted for five years, subject to proper installation and maintenance. UL listed to standard 924, complies with NEC, Life Safety Code and OSHA requirements.

Unit shall be **Lightalarms®** catalog number_____ .

DIMENSIONS

Dimensions are approximate and subject to change.



COMPATIBLE LAMP CHART

LAMP	VOLTAGE	WATTAGE	INITIAL LUMENS	
			1-LAMP	2-LAMP
F14W T5	**120/277V**	**14**	480	440
F21W T5		**21**	680	640
F24W T5/HO		**24**	440	410
F28W T5		**28**	750	690
F39W T5/HO		**39**	670	640
F54W T5/HO		**54**	600	650
F14W T8		**14**	450	400
F20W T8		**20**	550	520
F28W T8		**28**	625	580
F32W T8		**32**	700	670
F36W T8		**36**	680	650
F39W T8		**39**	620	580
F54W T8		**54**	500	–
F32W PLCF Quad 4pin		**32**	550	510
Long compact F36W		**36**	610	570
Long compact F40W		**40**	625	–
Long compact F50W		**50**	510	–
PLC F30BX, 40BX, 50BX		**30, 40, 50**	650	–
F24W U-BEND FBT8		**24**	580	550
F32W U-BEND FBT8		**32**	630	600

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

LADL12 SERIES

Convert new or existing fluorescent fixtures into emergency lighting units 1350 lumen emergency ballast

FEATURES

Housing
- Steel housing contains, battery, battery charger, transfer circuit and high frequency inverter
- Optional end caps available
- Operating temperature 68°F to 122°F (20°C to 50°C)

Mounting
- Internal or external mounting to a fluorescent fixture

Lamp Type Operation (refer to Ballast/Lamp Reference Chart for specific lamp type)
- One 14-54W or two 14-39W
- (2'-4') T5 and T8 lamps with instant start or rapid start or one 4-pin
- 18-50W long compact fluorescent or one 4-pin
- 32W compact fluorescent or one 24-32W U-Bend lamp

Lumen Output
- (1) Lamp 800-1350 Lumens
- (2) Lamps 850-1300 Lumens

Electronics
- Can be wired to operate switched, un-switched or normally off fixtures without affecting normal operation
- Will cold start and illuminate lamps
- Fully Automatic solid state charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection
- Battery connector prevents battery discharge during installation

Controls
- Red charger monitor LED indicates charging of the battery and AC present
- Momentary test switch allows for quick operational check of entire system

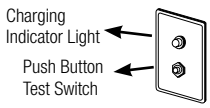
Sealed Maintenance-Free Battery
- Nickel-Cadmium battery
- Provides 90 minutes of emergency operation

Power Requirements
- Dual voltage 120/277VAC, 60Hz, 3.7W

Approvals
- UL 924 Standards
- Damp location listed

Warranty (subject to proper installation and maintenance)
- Ballast has a five year full warranty

ACCESSORIES (order as separate item)

	External mounting kit includes wire bundle cover	**EC6**
Remote Test Switch (Metal faceplate)		**PSW**
Remote Test Switch (Plastic faceplate)		**PSW1**
Recommended for inaccessible locations. Test switch and charging indicator on a single mounting plate.		
Replacement Test Switch		**TBTSP-L**

ORDERING FORMAT

SERIES
LADL12

EXAMPLE: LADL12

SPECIFICATIONS

Supply and install **Lightalarms® LADL12** Series.

The **LADL12** fluorescent emergency ballast shall be a single steel housing self-contained unit including a sealed maintenance-free Nickel-Cadmium battery, battery charger, transfer circuit and high frequency inverter. The unit shall be rated 120/277VAC, 60 Hz and be UL924 listed.

The **LADL12** fluorescent emergency ballast, sealed dust-tight relay inverter charger transfer circuit shall be of a solid state design being automatic and instantaneous capable of supplying an initial 1350 lumens output to cold start, operate switched, un-switched or normally off fixtures without affecting normal operation. The battery shall supply emergency operation for a minimum of 90 minutes and shall be capable of full recharge in compliance with UL924 specifications.

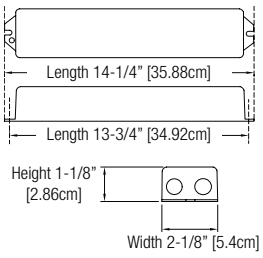
The unit shall be furnished with, red charger monitor LED indicates charging of the battery and AC present to unit as well as a momentary test switch allows for quick operational check of entire system.

Every **LADL12** Series unit shall be fully warranted for five years, subject to proper installation and maintenance. UL listed to standard 924, complies with NEC, Life Safety Code and OSHA requirements.

Unit shall be **Lightalarms®** catalog number_____ .

DIMENSIONS

Dimensions are approximate and subject to change.



COMPATIBLE LAMP CHART

LAMP	VOLTAGE	WATTAGE	INITIAL LUMENS	
			1-LAMP	2-LAMP
F14W T5	**120/277V**	**14**	880	850
F21W T5		**21**	1000	960
F24W T5/HO		**24**	1250	1210
F28W T5		**28**	1300	1250
F39W T5/HO		**39**	1200	1130
F54W T5/HO		**54**	1150	–
F14W T8		**14**	900	850
F20W T8		**20**	1150	1120
F28W T8		**28**	1200	1180
F32W T8		**32**	1350	1300
F36W T8		**36**	1200	1150
F39W T8		**39**	1150	1100
F54W T8		**54**	1100	–
F32W PLCF Quad 4pin		**32**	1100	1050
PLC F36W		**36**	1050	1000
PLC F40W		**40**	1100	–
PLC F50W		**50**	1000	–
PLC F30BX, 40BX, 50BX		**30, 40, 50**	1300	–
F24W U-BEND FBT8		**24**	1050	1000
F32W U-BEND FBT8		**32**	1150	1100

LADL20-N SERIES

Convert new or existing fluorescent fixtures into emergency lighting units
750 lumen emergency ballast

TYPE _____

CATALOG # _____

NOTES _____

FEATURES

Housing
- Steel housing contains, battery, battery charger, transfer circuit and high frequency inverter
- Operating temperature 32°F to 122°F (0°C to 50°C)

Mounting
- Internal or external mounting to a fluorescent fixture

Lamp Type Operation (refer to Ballast/Lamp Reference Chart for specific lamp type)
- Compatible with most one-, two-, three-, and four-lamp electronic standard and dimming AC
- Operates one 17W-40W T8 through T12, two 13W-39W, one 13W-42W 4-pin compact or one 18W-40W 4-pin long compact fluorescent lamps

Lumen Output
- (1) Lamp 350-750 Lumens
- (2) Lamps 425-750 Lumens

Electronics
- Can be wired to operate switched, un-switched or normally off fixtures without affecting normal operation
- Will cold start and illuminate lamps
- Fully Automatic solid state charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection
- Battery connector prevents battery discharge during installation

Controls
- Red charger monitor LED indicates charging of the battery and AC present
- Momentary test switch allows for quick operational check of entire system

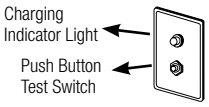
Sealed Maintenance-Free Battery
- Nickel-Cadmium battery
- Provides 90 minutes of emergency operation

Power Requirements
- Dual voltage 120/277VAC, 60Hz, 1.8W

Approvals
- UL 924 Standards
- Damp location listed

Warranty (subject to proper installation and maintenance)
- Ballast has a five year full warranty

ACCESSORIES (order as separate item)

Remote Test Switch (Metal faceplate)	**PSW**
Remote Test Switch (Plastic faceplate)	**PSW1**
Recommended for inaccessible locations. Test switch and charging indicator on a single mounting plate. 	
Replacement Test Switch	**TBTSBA-L**

ORDERING FORMAT

SERIES
LADL20-N

EXAMPLE: LADL20-N

SPECIFICATIONS

Supply and install **Lightalarms® LADL20-N** Series.

The **LADL20-N** fluorescent emergency ballast shall be a single steel housing self-contained unit including a sealed maintenance-free Nickel-Cadmium battery, battery charger, transfer circuit and high frequency inverter. The unit shall be rated 120/277VAC, 60 Hz and be UL924 listed.

The **LADL20-N** fluorescent emergency ballast, sealed dust-tight relay inverter charger transfer circuit shall be of a solid state design being automatic and instantaneous capable of supplying an initial 750 lumens output to cold start, operate switched, un-switched or normally off fixtures without affecting normal operation. The battery shall supply emergency operation for a minimum of 90 minutes and shall be capable of full recharge in compliance with UL924 specifications.

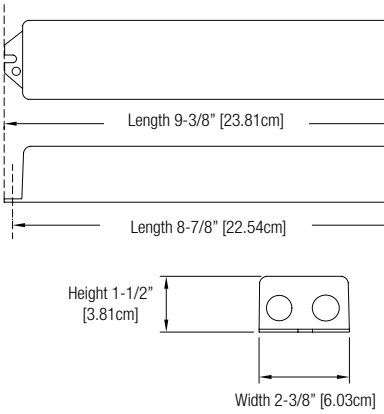
The unit shall be furnished with, red charger monitor LED indicates charging of the battery and AC present to unit as well as a momentary test switch allows for quick operational check of entire system.

Every **LADL20-N** Series unit shall be fully warranted for five years, subject to proper installation and maintenance. UL listed to standard 924, complies with NEC, Life Safety Code and OSHA requirements.

Unit shall be **Lightalarms®** catalog number_____ .

DIMENSIONS

Dimensions are approximate and subject to change.



COMPATIBLE LAMP CHART

LAMP	VOLTAGE	WATTAGE	INITIAL LUMENS	
			1-LAMP	2-LAMP
4-pin PL CF	**120/277V**	13W	350	425
4-pin PL CF		18W	400	550
4-pin PL CF		26W	475	650
4-pin PL CF		32W	600	750
4-pin PL CF		42W	750	–
4-pin Long CF		18W	550	–
4-pin Long CF		24W	600	–
4-pin Long CF		36W	650	–

TYPE _____

CATALOG # _____

NOTES _____

LADL28 SERIES

Convert new or existing fluorescent fixtures into emergency lighting fixtures 500 lumen emergency ballast

FEATURES

Housing
- Steel housing contains, battery, battery charger, transfer circuit and high frequency inverter
- Optional end caps available
- Operating temperature 32°F to 122°F (0°C to 50°C)

Mounting
- Slim Design, for internal or external mounting to a fluorescent fixture

Lamp Type Operation (refer to Ballast/Lamp Reference Chart for specific lamp type)
- Compatible with most one-, two-, three-, and four-lamp electronic standard and dimming AC ballast
- Operates one 21W-28W T5 fluorescent lamp. Refer to compatible lamp chart for a complete list of lamps

Lumen Output
- (1) Lamp 325-500 Lumens

Electronics
- Can be wired to operate switched, un-switched or normally off fixtures without affecting normal operation
- Will cold start and illuminate lamps
- Fully Automatic solid state charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection
- Battery connector prevents battery discharge during installation

Controls
- Red charger monitor LED indicates charging of the battery and AC present
- Momentary test switch allows for quick operational check of entire system

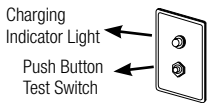
Sealed Maintenance-Free Battery
- Nickel-Cadmium battery
- Provides 90 minutes of emergency operation

Power Requirements
- Dual voltage 120/277VAC, 60Hz, 2.7W

Approvals
- UL 924 Standards
- Damp location listed

Warranty (subject to proper installation and maintenance)
- Ballast has a five year full warranty

ACCESSORIES (order as separate item)

	External mounting kit includes wire bundle cover	**EC6**
Remote Test Switch (Metal faceplate)		**PSW**
Remote Test Switch (Plastic faceplate)		**PSW1**
Recommended for inaccessible locations. Test switch and charging indicator on a single mounting plate.		
Replacement Test Switch		**TBTSBB-L**

ORDERING FORMAT

SERIES
LADL28

EXAMPLE: LADL28

SPECIFICATIONS

Supply and install **Lightalarms® LADL28** Series.

The **LADL28** fluorescent emergency ballast shall be a single steel housing self-contained unit including a sealed maintenance-free Nickel-Cadmium battery, battery charger, transfer circuit and high frequency inverter. The unit shall be rated 120/277VAC, 60 Hz and be UL924 listed.

The **LADL28** fluorescent emergency ballast, sealed dust-tight relay inverter charger transfer circuit shall be of a solid state design being automatic and instantaneous capable of supplying an initial 500 lumens output to cold start, operate switched, un-switched or normally off fixtures without affecting normal operation. The battery shall supply emergency operation for a minimum of 90 minutes and shall be capable of full recharge in compliance with UL924 specifications.

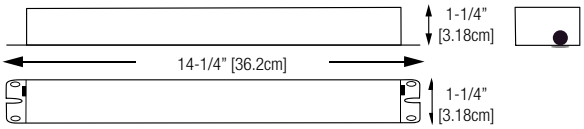
The unit shall be furnished with, red charger monitor LED indicates charging of the battery and AC present to unit as well as a momentary test switch allows for quick operational check of entire system.

Every **LADL28** Series unit shall be fully warranted for five years, subject to proper installation and maintenance. UL listed to standard 924, complies with NEC, Life Safety Code and OSHA requirements.

Unit shall be **Lightalarms®** catalog number_____ .

DIMENSIONS

Dimensions are approximate and subject to change.



COMPATIBLE LAMP CHART

LAMP	VOLTAGE	WATTAGE	INITIAL LUMEN
			1-LAMP
T5	**120/277V**	**14W**	375
T5		**21W**	425
T5		**28W**	500
T8		**17W**	350
T8		**32W**	475
4-pin PL CF		**13W**	325
4-pin PL CF		**18W**	425
4-pin PL CF		**26W**	475

LADL30-N SERIES

Convert new or existing fluorescent fixtures into emergency lighting units 3000 lumen emergency ballast

TYPE _____

CATALOG # _____

NOTES _____

FEATURES

Housing
- Steel housing contains, battery, battery charger, transfer circuit and high frequency inverter
- Operating temperature 32°F to 122°F (0°C to 50°C)

Mounting
- External mounting to a fluorescent fixture

Lamp Type Operation (refer to Ballast/Lamp Reference Chart for specific lamp type)
- Compatible with most one-, two-, three-, and four-lamp electronic standard and dimming AC ballast
- Operates two 8W-54W T5/T5HO, two 17W-40W, one 17W-215W T8 through T12, two 13W-42W 4-pin compact, two 18W-50W or one 18W-55W 4-pin long compact fluorescent lamps

Lumen Output
- (1) Lamp 825-3000 Lumens
- (2) Lamps 900-3000 Lumens per lamp

Electronics
- Can be wired to operate switched, un-switched or normally off fixtures without affecting normal operation
- Will cold start and illuminate lamps
- Fully Automatic solid state charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection
- Battery connector prevents battery discharge during installation

Controls
- Red charger monitor LED indicates charging of the battery and AC present
- Momentary test switch allows for quick operational check of entire system

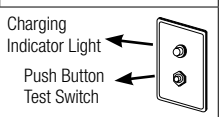
Sealed Maintenance-Free Battery
- Nickel-Cadmium battery
- Provides 90 minutes of emergency operation

Power Requirements
- Dual voltage 120/277VAC, 60Hz, 5.1W

Approvals
- UL 924 Standards
- Damp location listed

Warranty (subject to proper installation and maintenance)
- Ballast has a five year full warranty

ACCESSORIES (order as separate item)

Remote Test Switch (Metal faceplate)	**PSW**
Remote Test Switch (Plastic faceplate)	**PSW1**
Recommended for inaccessible locations. Test switch and charging indicator on a single mounting plate.	
Replacement Test Switch	**TBTSB-L**

ORDERING FORMAT

SERIES	OPTIONS
LADL30-N	**Blank**= Standard Unit **-DL**= Damp location Listed

EXAMPLE: LADL30-N

SPECIFICATIONS

Supply and install **Lightalarms® LADL30-N** Series.

The **LADL30-N** fluorescent emergency ballast shall be a single steel housing self-contained unit including a sealed maintenance-free Nickel-Cadmium battery, battery charger, transfer circuit and high frequency inverter. The unit shall be rated 120/277VAC, 60 Hz and be UL924 listed.

The **LADL30-N** fluorescent emergency ballast, sealed dust-tight relay inverter charger transfer circuit shall be of a solid state design being automatic and instantaneous capable of supplying an initial 3000 lumens output to cold start, operate switched, un-switched or normally off fixtures without affecting normal operation. The battery shall supply emergency operation for a minimum of 90 minutes and shall be capable of full recharge in compliance with UL924 specifications.

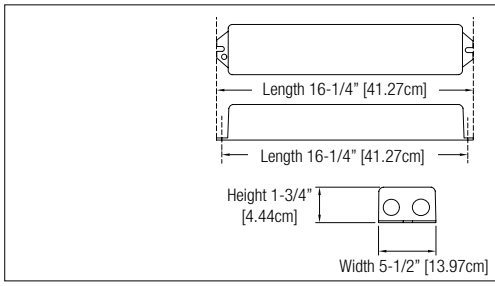
The unit shall be furnished with, red charger monitor LED indicates charging of the battery and AC present to unit as well as a momentary test switch allows for quick operational check of entire system.

Every **LADL30-N** Series unit shall be fully warranted for five years, subject to proper installation and maintenance. UL listed to standard 924, complies with NEC, Life Safety Code and OSHA requirements.

Unit shall be **Lightalarms®** catalog number_____ .

DIMENSIONS

Dimensions are approximate and subject to change.



COMPATIBLE LAMP CHART

LAMP	VOLTAGE	WATTAGE	INITIAL LUMENS	
			1-LAMP	2-LAMPS
T5	**120/277V**	**14W**	1150	1200
T5		**21W**	1750	1800
T5		**28W**	2350	2425
T5HO		**39W**	2700	2850
T5HO		**54W**	2900	3000
T8		**17W**	1100	1150
T8		**32W**	2950	3000
T12		**20W**	875	900
T12		**40W**	2250	2400
T8		**59W**	2800	–
T12		**110W**	2950	–
T12		**215W**	3000	–
4-pin PL CF		**13W**	825	900
4-pin PL CF		**18W**	1100	1200
4-pin PL CF		**26W**	1500	1600
4-pin PL CF		**32W**	2200	2300
4-pin PL CF		**42W**	2450	2500
4-pin Long CF		**18W**	1250	1400
4-pin Long CF		**24W**	1750	1900
4-pin Long CF		**36W**	2200	2300
4-pin Long CF		**40W**	2350	2400
4-pin Long CF		**50W**	2250	2400
4-pin Long CF		**55W**	2500	–

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

LADL32 SERIES

Convert new or existing fluorescent fixtures into emergency lighting units 500 lumen emergency ballast

FEATURES

Housing
- Low profile steel housing contains, battery, battery charger, transfer circuit and high frequency inverter
- Optional end caps available
- Operating temperature 68°F to 122°F (20°C to 50°C)

Mounting
- Internal or external mounting to a fluorescent fixture

Lamp Type Operation (refer to Ballast/Lamp Reference Chart for specific lamp type)
- One 17-40W (2'-4') T8, T10, T12 or one 28W (2'-4') T5, T8, 40W Biax (Long CFL), or 50W Biax (Long CFL) fluorescent lamp

Lumen Output
- (1) Lamp 375-500 Lumens

Electronics
- Can be wired to operate switched, un-switched or normally off fixtures without affecting normal operation
- Will cold start and illuminate lamps
- Fully Automatic solid state charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection
- Battery connector prevents battery discharge during installation

Controls
- Red charger monitor LED indicates charging of the battery and AC present
- Momentary test switch allows for quick operational check of entire system

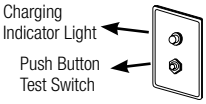
Sealed Maintenance-Free Battery
- Nickel-Cadmium battery
- Provides 90 minutes of emergency operation

Power Requirements
- Dual voltage 120/277VAC, 2.5W

Approvals
- UL 924 Standards
- Damp location listed

Warranty (subject to proper installation and maintenance)
- Ballast has a five year full warranty

ACCESSORIES (order as separate item)

End Caps 	External mounting kit includes wire bundle cover	**EC6**
Remote Test Switch (Metal faceplate)		**PSW**
Remote Test Switch (Plastic faceplate)		**PSW1**
Recommended for inaccessible locations. Test switch and charging indicator on a single mounting plate. 		
Replacement Test Switch		**TBTSBA-L**

ORDERING FORMAT

SERIES
LADL32

EXAMPLE: LADL32

SPECIFICATIONS

Supply and install **Lightalarms® LADL32** Series.

The **LADL32** fluorescent emergency ballast shall be a single steel housing self-contained unit including a sealed maintenance-free Nickel-Cadmium battery, battery charger, transfer circuit and high frequency inverter. The unit shall be rated 120/277VAC, 60 Hz and be UL924 listed.

The **LADL32** fluorescent emergency ballast, sealed dust-tight relay inverter charger transfer circuit shall be of a solid state design being automatic and instantaneous capable of supplying an initial 500 lumens output to cold start, operate switched, un-switched or normally off fixtures without affecting normal operation. The battery shall supply emergency operation for a minimum of 90 minutes and shall be capable of full recharge in compliance with UL924 specifications.

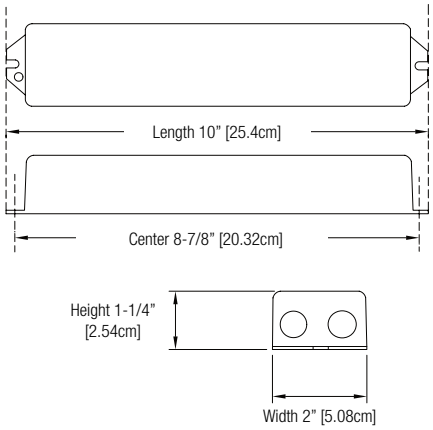
The unit shall be furnished with, red charger monitor LED indicates charging of the battery and AC present to unit as well as a momentary test switch allows for quick operational check of entire system.

Every **LADL32** Series unit shall be fully warranted for five years, subject to proper installation and maintenance. UL listed to standard 924, complies with NEC, Life Safety Code and OSHA requirements.

Unit shall be **Lightalarms®** catalog number_____ .

DIMENSIONS

Dimensions are approximate and subject to change.



COMPATIBLE LAMP CHART

LAMP	VOLTAGE	WATTAGE	INITIAL LUMEN
			1-LAMP
F17 T8	**120/277V**	**17**	450
F28 T8		**28**	460
F32 T8		**32**	475
28W T5		**28**	500
F15 T12		**15**	375
F20 T12		**20**	425
F40 T12		**40**	450
40W Long Compact		**40**	450
40W Circling		**40**	450

LADL540 SERIES

Convert new or existing fluorescent fixtures into emergency lighting fixtures 1300 lumen emergency ballast

TYPE _____

CATALOG # _____

NOTES _____

FEATURES

Housing
- Steel housing contains, battery, battery charger, transfer circuit and high frequency inverter
- Optional end caps available
- Operating temperature 32°F to 122°F (0°C to 50°C)

Mounting
- Internal or external mounting to a fluorescent fixture

Lamp Type Operation (refer to Ballast/Lamp Reference Chart for specific lamp type)
- Compatible with most one-, two-, three-, and four-lamp electronic standard and dimming AC ballasts
- Operates one 8W-54W T5/T5HO, one 17W-40W T8 through T12, one 13W-42W 4-pin compact or one 18W-50W 4-pin long compact fluorescent lamps

Lumen Output
- (1) Lamp 700-1300 Lumens

Electronics
- Can be wired to operate switched, un-switched or normally off fixtures without affecting normal operation
- Will cold start and illuminate lamps
- Fully Automatic solid state charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low voltage disconnect prevents over discharge of battery
- Automatic brownout protection
- Battery connector prevents battery discharge during installation

Controls
- Red charger monitor LED indicates charging of the battery and AC present
- Momentary test switch allows for quick operational check of entire system

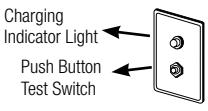
Sealed Maintenance-Free Battery
- Nickel-Cadmium battery
- Provides 90 minutes of emergency operation

Power Requirements
- Dual voltage 120/277VAC, 60Hz, 2.7W

Approvals
- UL 924 Standards
- Damp location listed

Warranty (subject to proper installation and maintenance)
- Ballast has a five year full warranty

ACCESSORIES (order as separate item)

 External mounting kit includes wire bundle cover	**EC6**
Remote Test Switch (Metal faceplate)	**PSW**
Remote Test Switch (Plastic faceplate)	**PSW1**
Recommended for inaccessible locations. Test switch and charging indicator on a single mounting plate. 	
Replacement Test Switch	**TBTSB-L**

ORDERING FORMAT

SERIES
LADL540

EXAMPLE: LADL540

SPECIFICATIONS

Supply and install **Lightalarms® LADL540** Series.

The **LADL540** fluorescent emergency ballast shall be a single steel housing self-contained unit including a sealed maintenance-free Nickel-Cadmium battery, battery charger, transfer circuit and high frequency inverter. The unit shall be rated 120/277VAC, 60 Hz and be UL924 listed.

The **LADL540** fluorescent emergency ballast, sealed dust-tight relay inverter charger transfer circuit shall be of a solid state design being automatic and instantaneous capable of supplying an initial 1300 lumens output to cold start, operate switched, un-switched or normally off fixtures without affecting normal operation. The battery shall supply emergency operation for a minimum of 90 minutes and shall be capable of full recharge in compliance with UL924 specifications.

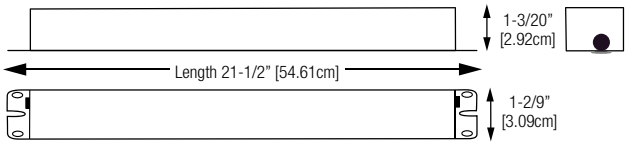
The unit shall be furnished with, red charger monitor LED indicates charging of the battery and AC present to unit as well as a momentary test switch allows for quick operational check of entire system.

Every **LADL540** Series unit shall be fully warranted for five years, subject to proper installation and maintenance. UL listed to standard 924, complies with NEC, Life Safety Code and OSHA requirements.

Unit shall be **Lightalarms®** catalog number_____ .

DIMENSIONS

Dimensions are approximate and subject to change.



COMPATIBLE LAMP CHART

LAMP	VOLTAGE	WATTAGE	INITIAL LUMEN 1-LAMP
T5	**120/277V**	**14W**	700
T5		**21W**	850
T5		**28W**	1100
T5HO		**39W**	1200
T5HO		**54W**	1300
T8		**17W**	950
T8		**32W**	1100
T12		**20W**	900
T12		**40W**	1200
4-pin PL CF		**13W**	800
4-pin PL CF		**18W**	950
4-pin PL CF		**26W**	975
4-pin PL CF		**32W**	1025
4-pin PL CF		**42W**	1075
4-pin Long CF		**18W**	925
4-pin Long CF		**24W**	950
4-pin Long CF		**36W**	1025
4-pin Long CF		**40W**	1050
4-pin Long CF		**50W**	1100

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

EPC-1-L SERIES

Emergency Transfer Switch for Generator Supplies Power to Switched Lighting Fixtures

FEATURES

Housing
- Thermoplastic UL94-5VA
- Compatible with standard, energy-saving, dimming and electronic AC ballasts[1]

Mounting
- Wall and ceiling mount

Lamp Types
- Will operate incandescent and fluorescent lamp types in the designated circuit for the duration of the generator supply[2] (does not operate LED lamp types)

Lumen output
- Full light output
- Allows auxiliary generator power on a switched fixture.

Power Requirements
- Dual Voltage 120/277V 60hz

Approvals
- UL924 Listed
- Meets or exceeds all National Electrical Code and Life Safety Code Emergency Lighting Requirements

Warranty (subject to proper installation and maintenance)
- Unit has a five year warranty

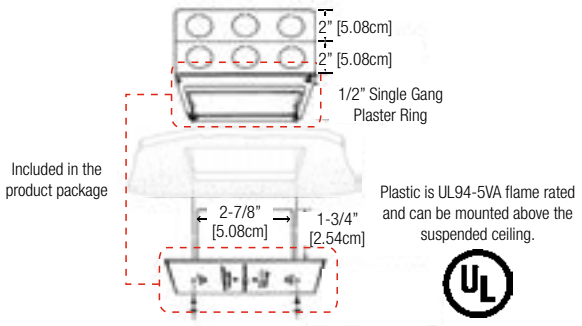
[1] Excluding LED's

[2] When using EPC-1 to control more than 10 emergency ballasts with a high corrective power factor capacitor, consult factory for more information regarding inrush currents.

DIMENSIONS

Dimensions are approximate and subject to change.

EPC-1 Flush Mount Ceiling Installation



SPECIFICATIONS

The **Lightalarms® EPC-1-L Emergency Transfer Switch** allows the use of auxiliary generator power on a switched fluorescent fixture in power failure situations. The EPC-1-L senses the loss of normal AC power and switches the AC ballast to the auxiliary generator supply. The EPC-1-L will operate the lamps at full light output for as long as the generator is able, and will work in conjunction with any fluorescent lamp type and fixture on the generator circuit. Dimming ballasts require one EPC-1-L for each hot lead. Load dimming required one dimmer for the regular load and another one for time emergency load.

Electrical Specifications:
- Model EPC-1-L-120/277V
- 120V or 277V Sensing Input
- 120V or 277V Load
- 1800W Incandescent Load Rating at 120V
- 1500W Incandescent Load Rating at 277V
- N.C. Contact
- UL924 Listed
- 20 Amp Ballast Load Rating

Mechanical Specifications:
- Mounts in 4-11/16" Junction Box with single gang plaster ring
- UL94-5VA Rating
- Shipping Weight: 8 oz
- Temperature: 32˚F - 140˚F (0˚F - 60˚F) | Color : White
- Flush Mounted Size: 4-3/4" x 2-3/4" x 1/4"
- Body Size: 2-7/8" x 1-3/4" x 1-3/4"

Emergency Operation

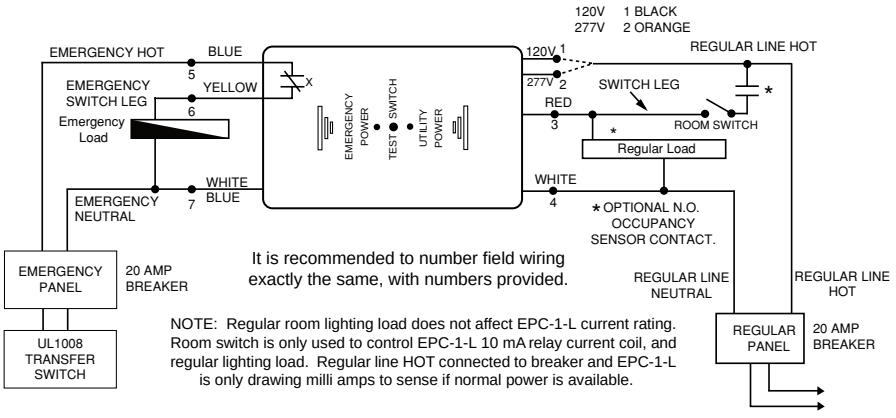
The EPC-1-L will operate any lamp type in the designated fixture for the duration of the generator supply

Initial Illumination

The EPC-1-L will operate the designated lamp at full light output

Weight	8 oz
Approval	UL924 Listed

WIRING DIAGRAMS



INVERTER SERIES

Inverter Systems

LOW CAPACITY MINI INVERTER SERIES

Interruptible Unit Equipment
32W or 55W

FEATURES

Housing
- Heavy-duty steel cabinet
- White baked on powder paint coating provides scratch and corrosion resistance

Mounting
- Surface mount
- Recessed T-Bar (plenum rated)

Lamp Types Operated
- LED
- Incandescent
- Fluorescent
- Operates switched, normally-on or normally-off fixture types, incandescent, LED, fluorescent and ballast combinations, including triac dimmable ballasts

Load Capacity
- 32W, 55W
- Allows for remote mounting of the emergency fixtures at distances of up to 1000 feet
- May accept load when load feature power factor range from 0.44 lead to 0.44 lag

Electronics
- True sine wave inverter
- Temperature compensated charger
- Low battery voltage disconnect
- Unit comes standard with electronic lockout and brownout circuits

Controls
- Control panel with momentary test switch, AC-On, Charger-On and Inverter-On LED indicators

Sealed Maintenance-Free Battery
- 12V oversized Valve Regulated Lead-Calcium (VRLA) battery
- Provides 90 minutes of emergency operation

Power Requirements
- Choice of voltage: 120V in/120V out or 277V in/277V out operation, 60Hz

Approvals
- UL924 Standard
- Meets or exceeds all National Electric Codes and Life Safety Code Emergency Lighting Requirements

Warranty (subject to proper installation and maintenance)
- Unit has a 3 year full warranty (excluding lamps and fuses)
- Battery has a 3 year full, plus an additional 3 year pro-rata warranty

All **Lightalarms®** inverter products receive 100% quality inspection before shipment to insure proper and satisfactory operation.

SPECIFICATIONS

Supply and install **Lightalarms® Low Capacity Mini Inverter** Series.

Emergency lighting shall be provided by inverter unit equipment designed to operate designated incandescent, fluorescent and LED fixtures on emergency power at their full nominal lumen rating during the full 90 minutes of emergency discharge cycle. System output will be rated at _____ watts for 90 minutes. The system's voltage rating shall be 120 / 277 VAC input/output. The inverter unit shall allow for connected emergency fixture(s) to be normally-on, normally-off, switched or triac dimmable ballasts without affecting lamp operation during a power failure. Upon utility power loss, the inverter unit shall deliver 100% of its rated output to the emergency fixtures regardless of the local switch or dimmer position, and will provide power to emergency fixtures at distances of up to 1000 feet. The housing shall be manufactured with a white baked-on powder coat paint finish. The unit's electronics shall include a self-contained inverter section with a fully automatic, thermal compensating dual mode battery charger, AC lockout feature, low voltage battery disconnect, DC overload, short circuit and brownout protection as standard. The unit shall utilize a sealed Lead-Calcium battery with a 10-year design life. The inverter system shall be UL 924 Listed and labeled. The unit shall be covered under a 3-year warranty on the electronics and battery plus an additional 3-year pro-rata warranty on the battery.

Unit shall be **Lightalarms®** catalog number _____ .

SPECIFICATIONS
TRANSFER TIME Less than 1 second
VOLTAGE REGULATION ON EMERGENCY: +/- 5%
FREQUENCY REGULATION ON EMERGENCY: 60 Hz +/- 0.5%
LOAD POWER FACTOR RANGE: • 0.44 lead to 0.44 lag
OPERATING TEMPERATURE: 68° to 86°F (20° to 30°C)

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

LOW CAPACITY MINI INVERTER SERIES

ELECTRICAL CHARACTERISTICS & DIMENSIONS

SYSTEM TYPE	POWER RATING	SINE WAVE	INSTALLATION	CABINET DIMENSIONS			NO. OF BATTERY	WEIGHT
				W"	H"	D"		120V & 277V
LMILC32-S	32W/VA	Yes	Surface mount	14-3/4"	6-7/8"	3-1/8"	1	14 lbs
LMILC32-T	32W/VA	Yes	Recessed T-bar	23-7/8"	6-1/4"	4"	1	15 lbs
LMILC55-S	55W/VA	Yes	Surface mount	14-3/4"	6-7/8"	4-3/8"	1	18 lbs
LMILC55-T	55W/VA	Yes	Recessed T-bar	23-7/8"	6-1/4"	4"	1	19 lbs

NOTE: For wiring diagram, please refer to instruction sheets.

POWER CONSUMPTION AND UNIT RATING

MODEL NUMBER	INPUT RATING	EMERGENCY POWER AVAILABLE FOR LOAD (90MIN)
LMILC32	41W/VA	32W
LMILC55	64W/VA	55W

ORDERING INFORMATION

SERIES	CAPACITY	VOLTAGE IN/OUT	BATTERY TYPE	MOUNTING
LMILC	**32**= 32W/VA **55**= 55W/VA	**BLANK**= 120/277VAC	**BLANK**= Lead-Calcium	**-S**= Surface mount housing **-T**= Plenum rated ceiling T-grid mount housing

EXAMPLE: LMILC32-S

MINI INVERTER SERIES

Interruptible Unit Equipment Standard with Non-Audible Improved Self-Diagnostics Circuitry

FEATURES

Housing
- 14-Gauge Steel
- White semi-gloss powered-coat paint finish

Mounting
- Surface mount
- Optional recessed T-Bar (125W unit only)

Lamp Types Operated
- LED
- Incandescent
- Fluorescent
- Operating switched, normally-on or normally-off fixture types
- Incandescent, LED, fluorescent lamps and ballast combinations, including triac dimmable ballasts (consult factory if 0-10V or DALI dimming)

Load Capacity
- 125W, 250W, 400W or 720W
- Line voltage allows for remote mounting of the emergency fixtures at distances up to 1000 feet
- May accept load to it's full capacity when load feature power factor of 0.9 for 250W model and 0.8 for 125, 400 and 720W model

Electronics
- High-efficiency pure sine wave inverter at 250W capacity or higher
- Temperature compensated charger
- Replaceable output fuse protection
- Low battery voltage disconnect
- Unit comes standard with electronic lockout and brownout circuits

Controls
- Standard with a non-audible self diagnostic/charger is fully self-contained, fully automatic microcontroller- based system
- Optional audible auto diagnostic available

Nexus® Option
- Units equipped with NEXUS® self-testing monitoring system circuitry shall selftest, in accordance with NFPA101, Life Safety Code minimum 30 seconds every 30 days, 30 minutes every six months and 90 minutes annually as well as keep a history of all testing logs, plus feature a real-time diagnoses, as well as, be able to locate exact fixture location while notifying service personnel to the status of the fixture via email notification.

  Nexus® system interface with an improved minimum load lost detection of 10%

Sealed Maintenance-Free Battery
- 12V oversized Valve Regulated Lead-Calcium (VRLA) battery
- Provides 90 minutes of emergency operation

Power Requirements
- Choice of Voltage 120V in/120V out or 277V in/277V out operation, 60Hz

SPECIFICATIONS

Supply and install **Lightalarms® Mini Inverter** Series.

Emergency lighting shall be provided by inverter unit equipment designed to operate designated incandescent, fluorescent and LED fixtures on emergency power at their full nominal lumen rating during the full 90 minutes emergency discharge cycle. System output will be rated at _____ watts for 90 minutes and provide used output connections to the load. The system's voltage rating shall be _____ VAC input/output. The inverter unit shall allow for connected emergency fixture(s) to be normally on, normally off, switched or triac dimmable ballasts without affecting lamp operation during a power failure. Upon utility power loss, the inverter unit shall deliver 100% of its rated output to the emergency fixtures regardless of the local switch or dimmer position, and will provide power to emergency fixtures at distances of up to 1000 feet. The housing shall be manufactured using 14-gauge steel with a white baked-on powder coat paint finish.

The unit's electronics shall include as standard, non-audible self-diagnostics, a self-contained inverter section with a fully automatic, thermal-compensating variable-rate battery charger, AC lockout feature, low voltage battery disconnect, DC overload, short circuit and brownout protection as standard. The unit shall utilize a sealed Lead-Calcium battery with a 10-year design life.

The inverter system shall be UL 924 Listed and labeled. The unit shall be covered under a 3-year full warranty on the electronics, against defects in material or workmanship. The battery includes a 3 year full, plus a 3 year pro-rata warranty.

Unit shall be **Lightalarms®** catalog number _____ .

SPECIFICATIONS
TRANSFER TIME Less than 1 second
VOLTAGE REGULATION ON EMERGENCY: +/- 3%
FREQUENCY REGULATION ON EMERGENCY: 60 Hz +/- 1%
LOAD POWER FACTOR RANGE: • 250W model: .9 leading to .9 lagging • 125, 400 & 720W models: 8 leading to .8 lagging
OPERATING TEMPERATURE: 68° to 86°F (20° to 30°C)

Approvals
- UL924 Standard
- Meets or exceeds all National Electric Code and Life Safety Code Emergency Lighting Requirements

Warranty (subject to proper installation and maintenance)
- Unit has a 3 year full warranty (excluding lamps and fuses)
- Battery has a 3 year full, plus 3 year pro-rata warranty

All **Lightalarms®** inverter products receive 100% quality inspection before shipment to insure proper and satisfactory operation.

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

nexus

Interruptible Unit Equipment 125W, 250W, 400W or 720W Standard with Non-Audible Improved Self-Diagnostics Circuitry

ELECTRICAL CHARACTERISTICS & DIMENSIONS

POWER RATING	SINE WAVE	INSTALLATION	CABINET DIMENSIONS			NO. OF BATTERY	WEIGHT	WEIGHT W/O BATTERY
			W"	H"	D"		120V & 277V	120V & 277V
125W	Modified	T-Bar	24"	6.5"	8"	1	43 lbs	20 lbs
125W	Modified	Wall	16.5"	12.2"	7.3"	1	41 lbs	18.5 lbs
250W	Pure	Wall	27"	12.2"	7.3"	2	76 lbs	30 lbs
400W	Pure	Wall	24"	10.5"	20"	2	128 lbs	50 lbs
720W	Pure	Wall	24"	14.5"	20"	2	185 lbs	72 lbs

NOTE: For wiring diagram, please refer to instruction sheets.

POWER CONSUMPTION AND UNIT RATING

MODEL NUMBER	AC SPECS		EMERGENCY POWER AVAILABLE FOR LOAD			
			90MIN	2H	3H	4H
LMIU-125	120 / 277VAC	1.15 / 0.50 Amps	125W	83W	62W	47W
LMIU-250	120 / 277VAC	2.28 / 0.99 Amps	250W	167W	125W	94W
LMIU-400	120 / 277VAC	3.73 / 1.62 Amps	400W	300W	200W	150W
LMIU-720	120 / 277VAC	6.90 / 2.99 Amps	720W	480W	360W	270W

ORDERING INFORMATION

SERIES	CAPACITY	VOLTAGE IN/OUT	DIAGNOSTIC FEATURE	OPTIONS
LMIU	**-125**= 125W **-250**= 250W **-400**= 400W **-720**= 720W	**BLANK**= 120/120VAC or 277/277VAC	**Blank**= Includes Improved Self-Diagnostics (non-audible)[1] **-ID**= Improved Self-Diagnostics (audible)[1] **-NEX**= Nexus® wired **-NEXRF**= Nexus® wireless	**-D1**= Time Delay (5 minutes) **-D2**= Time Delay (10 minutes) **-D3**= Time Delay (15 minutes) **-SAC**= Service alarm contact[1] **-10V**= Lighting control override for 0-10V dimming system[2]

[1] Minimum load required: 10% of unit capacity

[1] Service alarm contact (SAC) shall provide a 24V signal, the charger board will indicate a fault by choosing a contact. Not available with 720 capacity

[2] For any other lighting control system, please consult factory

EXAMPLE: LMIU-720

Light Support Power Inverter Systems Feature

HIGHLIGHTS

Performance

- The Light Support Power Systems works with any type of lighting load to provide full light output for minimum 90 min. It is designed to support incandescent, fluorescent, HID*, quartz re-strike or halogen lamps. It will work into these loads at cold starts for all normally off circuits or normally on circuits.

*except IPS systems

True Sine Waveform

- Using a solid-state, pulse width modulation (PWM) inverter the systems produce pure sinusoidal output waveform with less than 3% maximum Total Harmonic Distortion (THD) for linear loads. Microprocessor and crystal controlled.

Reliability

- The product is third generation inverter technology. Proven solid design with double ratings of all critical components. LVD (Low Voltage Disconnect) for long power outages eliminates battery drain.

Batteries

- Front access connections for easy installation significantly reduce the footprint, installation and maintenance time while increasing safety. Automatic restart and recharge upon restoration of utility.

Approvals

- UL listed to UL924. Meets UL924, NFPA101, NFPA70, NFPA 110, OSHA, UBC, SBCCI.
- N.Y. City approved.

Applications

- Light Support Power Systems can be used in almost every type of building, especially in architecturally sensitive applications or when maintenance costs and individual testing of unit equipment becomes very significant. Our systems are designed to work with power factor corrected as well as the most recent T5 and T5-HO electronic ballasts.

Options

- A full range of options such as integrated output circuit breakers, bypass relays, dry contacts, etc., makes Light Support Power Systems an industry leader in emergency lighting central systems page 147.

FEATURES

Self-Diagnostic/Self-Testing

- Programmable monthly and annual self-testing. Proven self-diagnostic with over 120 parameters stored in separate memory logs for Test, Event and Alarm. Microprocessor monitoring and control.

Low heat dissipation

- Very low heat loss technology in normal operating mode (see specifications for exact values). Convection cooling in normal mode with forced air during emergency mode. Battery cabinets: convection cooling only.

Maximum Efficiency

- Highest efficiency in the industry, 98% at 100% load with no requirement for cooling in normal operating mode.
- Low input harmonic distortion <10%.

Versatile Installation

- Modular design, easy front access freestanding cabinets, fasten together when more than one cabinet is required. Optional seismic kit available. All wiring provided is pre-cut and terminated, along with the necessary hardware and electrical fittings, for proper installation.

Complete Protection

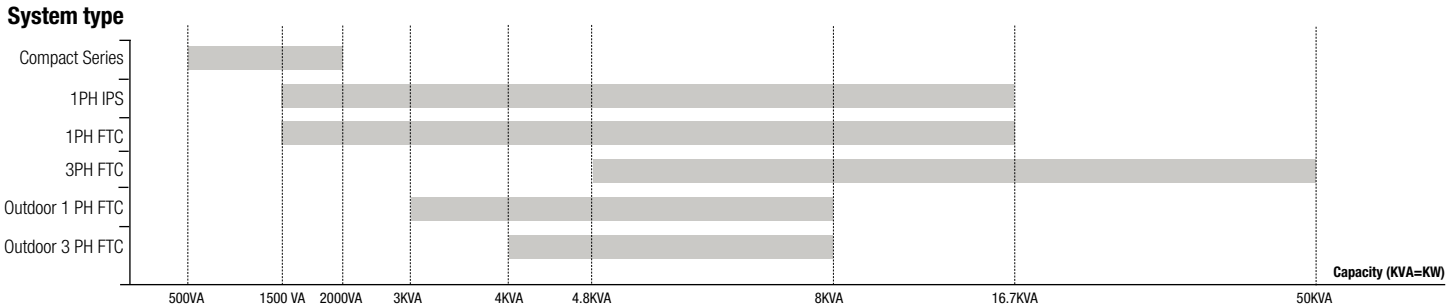
- Input circuit breaker and fused battery circuit is standard. Systems offer overload capacity, short-circuit protection, current-limiting, low-battery disconnect, reverse polarity and brownout protection as standard.

Thermal Performance

- Bonded fin heat sink technology for maximum thermal performance. Cooling fans are energized only in inverter mode.

Monitoring and Control

- User friendly programmable interface with LED indicators and LCD display provides full metering values, easy program and control functions and a wide range of visual and audible alarms.



Light Support Power Inverter Benefits

BENEFITS

Compliance with NFPA101
- The self-testing meets the requirements of NFPA and UL. User programmable time of testing.
- Test results, events or alarms can be downloaded from history logs. Load monitoring. Reduced testing/service time.

Less air-conditioning
- Reduced costs for air-conditioning required to ensure the optimum operating temperature when compared with equivalent systems that dissipate much more heat. Higher reliability of fans and the electronic components.

Lower energy bills
- Low consumption of the system itself will result in lower energy bills paid over the system life time. Comparative analysis available on request.

Easy to install
- Quick installation and connection through flexible cable entries and fast access terminal blocks. Reduced footprint for systems with stackable cabinets. Low MTTR (<15 min.) due to modular design, quick disconnect means and frontal access.

Reduced damage risks
- The full protection of the system will eliminate damage created by external events and will increase lifetime of the electronics and the batteries. Also will provide safety during maintenance.

Increased MTBF
- Increased reliability and reduced preventative maintenance.
- No air filters needed.

Easy maintenance
- Easier diagnostic, troubleshooting, preventative maintenance and service through the indicators and display or by using the history logs. Remote versions available.

LIGHT SUPPORT POWER SYSTEMS COMPACT SERIES

FEATURES

- 98% efficient at full load
- PWM/MOSFET technology
- Self-testing/Self-diagnostic
- User programmable with password protection
- Standard input circuit breaker
- Standard output circuit breaker
- Micro-processor controlled
- Floor or wall mountable
- Field upgradeable (500VA steps)
- 90 min. standard run time
- Electronic and magnetic ballast compatible
- Automatic event, test and alarm log
- LCD display
- Very small footprint (stackable cabinets)
- Maintenance free standard batteries
- Forced air cooling during emergency mode only

UL listed to UL924. Meets NFPA101, NFPA70, NFPA 110, OSHA, UBC, SBCCI. N.Y City approved.

ELECTRICAL/MECHANICAL CHARACTERISTICS[4]

POWER RATING[1] VA=W	EFFIC. AT FULL LOAD %	MAX. INPUT CURRENT (A) 120V	MAX. INPUT CURRENT (A) 277V	HEAT LOSS IN NORMAL MODE (BTU/HR)	BATT. VDC	BATT. A	NO. OF BATT.	UPS CABINET DIMENSIONS W"	UPS CABINET DIMENSIONS H"	UPS CABINET DIMENSIONS D"	BATTERY CABINET DIMENSIONS[2,3] W"	BATTERY CABINET DIMENSIONS[2,3] H"	BATTERY CABINET DIMENSIONS[2,3] D"	NO. OF BATT CAB.	BATT. CAB. WEIGHT LBS (EMPTY)	UPS CAB. WEIGHT LBS	BATT. WEIGHT LBS	TOTAL SYSTEM WEIGHT LBS
500	98	5.2	2.3	34	48	13.5	4	26	10	10	26	10	10	1	22	77	107	206
1000	98	10.5	4.5	68	48	26.5	8	26	10	10	26	10	10	2	22	77	214	335
1500	98	15.6	6.8	102	48	40	12	26	10	10	26	10	10	3	22	77	321	464
2000	98	20.8	9	136	48	52	16	26	10	10	26	10	10	4	22	77	428	592

1- System capacity can be upgraded in the field up to 2000VA by adding more battery cabinets. Re-programming required by factory service technician.
2- Batteries are installed in separate modular cabinets
3- Battery cabinets are stackable. Must be installed under the electronics cabinet
4- Special voltages can change the size, weight or number of cabinets

ORDERING INFORMATION

SYSTEM TYPE	BATTERY TYPE	INPUT VOLTAGE[3]	VA/W RATING	OUTPUT VOLTAGE[3]	RUN TIME[2]	INPUT BREAKER	OUTPUT BREAKERS[4]	OPTIONS[1]
FTCM	**-SC**= Sealed Lead-Calcium	**120**= 120VAC **277**= 277VAC	**C**- 500 **E**- 1000 **G**- 1500 **J**- 2000	**120** **277**	**90**	**ICB**	**OCBxxxx**- No trip alarm **OCAxxxx**- With trip alarm	**FB**- Floor mount bracket **NOFF**- Normally OFF output **WB**- Wall mount bracket **DCS**- Dry summary alarm contacts **INVON**- Inverter on dry contact **VTD**- None variable **BPR**- Bypass relay **RMP**- Remote metering panel **RSAP**- Remote summary alarm panel **RS232-** Communication interface **MOD**- Modem
		[3] Special voltages may change the size, weight or number of cabinets		[3] Special voltages may change the size, weight or number of cabinets	[2] Other run times available		[4] Max. 3 more additional output breakers for a total of 4. See page 145 for output breakers details.	[1] See page 145 for options description

EXAMPLE: FTCM-SC120G120-90-ICB-OCB0320-WB

TYPE _____

CATALOG # _____

_____

NOTES _____

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Fast transfer emergency lighting, 1PH, inverter system 500VA – 2000VA

SPECIFICATIONS

GENERAL

Design

- Stand-by no break. PWM inverter type utilizing MOSFET technology with 2ms transfer time.

Control

- Microprocessor controlled, 2 x 20-character display with touch pad controls & functions
- 5 LED indicators & alarm with ring-back feature

Metering

- Input & Output Voltage, Battery Voltage, Battery & Output Current, Output VA, Temperature, Inverter Wattage

Communications Optional RS-232 port (DB9)

ELECTRICAL INPUT

Voltage

- 120 or 277VAC 1-phase 2-wire +10% - 15%. Contact factory for all other voltages.

Input Power Walk-In

- Limiting inrush current to less than 125%, 10 times for 1 line cycle

Input Frequency 60Hz, +/-3Hz
Protection Standard Input Circuit Breaker
Harmonic Distortion <10%
Power Factor 0.5 lag/lead

ELECTRICAL OUTPUT

Voltage

- 120 or 277VAC 1-phase 2-wire. Contact factory for all other voltages.

Static Voltage

- Load current change +/-2%, battery discharge +/-12.5%

Dynamic Voltage

- +/-2% for +/-25% load step change, +/-3% for a 50% load step change, recovery within 3 cycles

Harmonic Distortion <3% THD for linear load
Output Frequency 60Hz +/- 0.05Hz during emergency mode
Load Power Factor 0.5 lag to 0.5 lead
Inverter Overload 115% for 5 minutes
Protection Standard Output Circuit Breaker (normally on)
Crest Factor 2.8

ENVIRONMENTAL CONDITIONS

Storage/Transport

- -4ºF to 158ºF (-20ºC to 70ºC) without batteries
- -0ºF to 104ºF (-18ºC to 40ºC) with batteries (max. 3 months at 104° F (40° C)

Operating temperature

- System operates safely from 32°F to 104°F (0°C to 40°C) but optimum operation is between 68° F and 86°F (20°C to 30°C). Battery performance can be affected by temperature.

Altitude

- <10,000 feet (above sea level) without de-rating

Relative Humidity

- 0 to 95% non-condensing

Audible noise 45 dBA @ 1m from surface in emergency mode

CABINETS

Modular design, freestanding or wall mount NEMA type 1 steel cabinets powder coated for corrosion and scratch resistance. Front access design. Cabinets are stackable. Top and left side conduit entry with knockouts.

INVERTER

Using MOSFET/PWM technology the inverter converts the DC voltage supplied by the batteries to AC voltage of a precise stabilized amplitude and frequency, suitable for most sophisticated electrical equipment. True sinusoidal output waveform with very low distortion (less than 3% for linear loads). Overload capability of up to 150% for 12 line cycles.

CHARGER

Fully automatic, temperature compensated, microprocessor controlled charger recharges fully discharged batteries in maximum 24 hours at nominal AC input voltage. AC input current limiting and over-voltage protection included.

BATTERY

System is provided with 10 year, maintenance free, sealed valve regulated Lead-Calcium batteries. 90 min. standard discharge time at full load under normal operating temperature. Low Voltage Disconnect protection included. No special ventilation required.

SUPERVISION

Automatic self-test consists of a 5-minute monthly and 90-minute annual function.

The front-mounted control panel includes 5 LED indicators, a 2-line 20-character LCD display, a keypad to control and monitor the internal operation of the system. This allows the operator to easily "watch" system functions as they occur and check on virtually any aspect of the system's operation. Self-diagnostic function monitors, controls, generates alarms and memorizes events.

ALARMS

High/Low Battery Charger Voltage, High/Low AC Input Voltage, Near Low Battery, Low Battery, Load Reduction Fault, Output Overload, High Ambient Temperature, Inverter Fault, Output Fault, Optional Output Circuit Breaker Trip

OPTIONAL FEATURES

Normally OFF output, Output Circuit Breakers, Output Trip Alarm, RS232 communication port, 12 Hours Fast Recharge, Remote Meter Panel, Remote Summary Alarm Panel, Summary Alarm Dry Form C Contact, Inverter on Dry Contacts, Variable Time Delay, Modem, Bypass Relays, Wall mount bracket

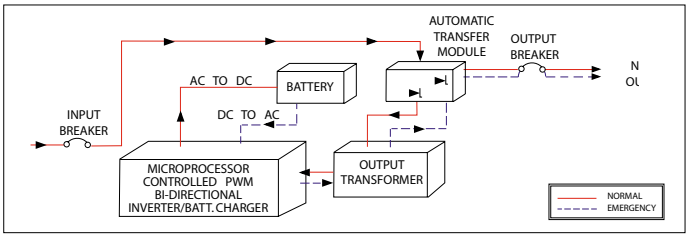
FACTORY START-UP

Includes one additional year of warranty. See warranty conditions.

WARRANTY (full limited warranty conditions available upon request)

Limited manufacturer warranty is one-year, parts and labor, for system electronics or two-year with factory start-up program. Battery warranty is one year full plus 9 years pro-rata for a total of 10 years, under normal operating conditions.
System must be put in service within 180 days from ship date in order to validate warranty.

SINGLE LINE DIAGRAM



Characteristics, specifications or dimensions subject to change without notice.

LIGHT SUPPORT POWER SYSTEMS
IPS SINGLE PHASE SERIES

FEATURES

- 98% efficient @ full load
- PWM/IGBT technology
- Self-testing/Self-diagnostic
- User programmable with password protection
- Standard input circuit breaker
- Standard Normally On & Normally Off output
- RS232 communication port
- Micro-processor controlled
- Automatic event and alarm log
- 90 min. standard run time
- Generator compatibility
- Electronic and magnetic ballast compatible
- Custom voltages available
- Automatic event, test and alarm log
- LCD display
- Reduced footprint (stackable cabinets)
- Maintenance free standard batteries
- Forced air cooling during emergency mode only

ELECTRICAL/MECHANICAL CHARACTERISTICS [4] (data provided for standard lead calcium batteries) [1, 4]

POWER RATING [1] kVA=kW	EFFIC. AT FULL LOAD %	MAX. INPUT CURRENT (A)		HEAT LOSS IN NORMAL MODE (BTU/HR)	BATT. VDC	BATT. A	NO. OF BATT.	UPS CABINET DIMENSIONS			BATTERY CABINET DIMENSIONS [2,3]			NO. OF BATT CAB.	BATT. CAB. WEIGHT LBS (EMPTY)	UPS CAB. WEIGHT LBS	BATT. WEIGHT LBS	TOTAL SYSTEM WEIGHT LBS
		120V	277V					W"	H"	D"	W"	H"	D"					
1.5	98	16	7	102	48	39	4	30	47	25	NA	NA	NA	NA	NA	250	296	546
2.25	98	24	11	153	72	38	6	30	47	25	NA	NA	NA	NA	NA	265	444	709
3	98	32	14	204	96	38	8	30	47	25	NA	NA	NA	NA	NA	295	592	887
3.75	98	39	17	255	120	37	10	30	47	25	NA	NA	NA	NA	NA	305	740	1045
5	98	50	22	340	144	40	12	30	47	25	NA	NA	NA	NA	NA	315	888	1203
6	98	63	27	408	180	40	15	30	47	25	30	47	25	1	210	350	1110	1670
8	98	84	36	544	240	39	20	30	47	25	30	47	25	1	232	375	1480	2087
10	98	105	45	680	144	82	24	30	47	25	30	47	25	2	420	435	1776	2631
12.5	98	131	57	850	180	82	30	30	47	25	30	47	25	2	420	465	2220	3105
16.7	98	174	76	1136	240	80	40	30	47	25	30	47	25	2	464	530	2960	3954

1- Consult factory for 20 year type batteries or for wet nickel cadmium batteries
2- Batteries are installed in the electronics cabinet for 1.5 to 5kVA systems
3- Battery cabinets are stackable. To be installed on the right side of the electronics cabinet
4- Special voltages or batteries may change the size, weight or number of cabinets

ORDERING INFORMATION

SYSTEM TYPE	BATTERY TYPE	INPUT VOLTAGE [3]	VA/W RATING	OUTPUT VOLTAGE [3]	RUN TIME [2]	INPUT BREAKER	RS232 PORT	OUTPUT BREAKERS [4]	OPTIONS [1]
IPS	**SC**- Sealed Lead-Calcium **NC**- Wet Nickel-Cadmium	**120** **208** **240** **277**	**G**- 1500 **K**- 2250 **L**- 3000 **M**- 3750 **P**- 5000 **R**- 6000 **S**- 8000 **T**- 10000 **U**- 12500 **V**- 16700	**120** **277** **208** **120/240** **120/277**	**90**	**ICB**	**RS232**	**OCBxxxx**- No trip alarm **OCAxxxx**- With trip alarm	**20Y**- 20 yr sealed batteries **12HR**- 12 hr fast recharge **MBYP**- Internal bypass switch **EMBP**- External bypass switch [5] **RMP**- Remote metering panel **RSAP**- Remote summary alarm panel **DCS**- Dry summary alarm contacts **INVON**- Inverter on dry contacts **VTD**- Not variable **MOD**- External modem **FAX**- Fax modem **BPR**- Bypass relays **DIAL**- Autodialer **SEIS**- Seismic mounting **ZONEM**- Zone monitoring **BATM**- Battery cycle warranty monitor
		[3] Special voltages may change the size, weight or number of cabinets		[3] Special voltages may change the size, weight or number of cabinets	[2] Other run times available			[4] Max. 12 unsupervised single pole positions or 8 with trip alarm. For more output breakers please consult factory. See page 145 for output breakers option details.	[1] See page 145 for options description [5] External bypass switch is not compatible with integrated output circuit breakers. Input/output voltage has to be the same.

EXAMPLE: IPS-SC120S120-90-ICB-RS232-OCB0420-DCS-20Y

TYPE _____

CATALOG # _____

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NOTES _____

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Interruptible emergency lighting Inverter System 1.5KVA –16.7KVA

SPECIFICATIONS

GENERAL

Design

- Stand-by. PWM inverter type utilizing IGBT technology with 50ms transfer time.

Control

- Microprocessor controlled, 2 x 20-character display with touch pad controls & functions
- 5 LED indicators & alarm with ring-back feature

Metering

- Input & Output Voltage, Battery Voltage, Battery & Output Current, Output VA, Temperature, Inverter Wattage

Communications RS-232 port (DB9)

ELECTRICAL INPUT

Voltage

- 120 or 277VAC 1-phase 2-wire +10% - 15%. Contact factory for all other voltages.

Input Power Walk-In

- Limiting inrush current to less than 125%, 10 times for 1 line cycle

Input Frequency

- 60Hz, +/-3%, 50Hz available upon request

Protection 60Hz, +/-3%, 50Hz available upon request

Harmonic Distortion <10%

Power Factor 0.5 lag/lead

ELECTRICAL OUTPUT

Voltage

- 120 or 277VAC 1-phase 2-wire. Contact factory for all other voltages.

Static Voltage

- Load current change +/-2%, battery discharge +/-12.5%

Dynamic Voltage

- +/-2% for +/-25% load step change, +/-3% for a 50% load step change, recovery within 3 cycles

Harmonic Distortion <3% THD for linear load

Output Frequency 60Hz +/- 0.05Hz during emergency mode

Load Power Factor 0.5 lag to 0.5 lead

Inverter Overload 125% for 5 minutes

Protection Optional Distribution Circuit Breaker

Crest Factor 2.8

ENVIRONMENTAL CONDITIONS

Storage/Transport

- -4ºF to 158ºF (-20ºC to 70ºC) without batteries
- -0ºF to 104ºF (-18ºC to 40ºC) with batteries (max. 3 months at 104° F (40° C)

Operating temperature

- System operates safely from 32°F to 104°F (0°C to 40°C) but optimum operation is between 68° F and 86°F (20°C to 30°C). Battery performance can be affected by temperature.

Altitude

- <10,000 feet (above sea level) without de-rating

Relative Humidity

- 0 to 95% non-condensing

Audible noise 45 dBA @ 1m from surface in emergency mode

CABINETS

Modular design, freestanding NEMA type 1 steel cabinets powder coated for corrosion and scratch resistance. Front access design through hinged lockable doors requires only 39" front clearance and 12" top clearance. Cabinets are stackable if required to further reduce the footprint. Top and left side conduit entry with knockouts.

INVERTER

Using IGBT/PWM technology the inverter converts DC voltage supplied by the batteries to AC voltage of a precise stabilized amplitude and frequency, suitable for most sophisticated electrical equipment. True sinusoidal output waveform with very low distortion (less than 3% for linear loads). Overload capability of up to 150% for 12 line cycles.

CHARGER

Fully automatic, temperature compensated, microprocessor controlled charger recharges fully discharged batteries in maximum 24 hours at nominal AC input voltage. AC input current limiting and over-voltage protection included.

BATTERY

System is provided standard with 10 year, maintenance free, sealed valve regulated, front terminals Lead-Calcium batteries. 20 years life sealed Lead-Calcium or wet nickel cadmium batteries also available. 90 min. standard discharge time at full load under normal operating temperature. Low Voltage Disconnect protection included. No special ventilation required.

SUPERVISION

Automatic self tests consist of a 5-minute monthly and 90-minute annual function.

The front-mounted control panel includes 5 LED indicators, a 2-line 20-character LCD display, a keypad to control and monitor the internal operation of the system. This allows the operator to easily "watch" system functions as they occur and check on virtually any aspect of the system's operation.
Standard RS232 diagnostic interface.

ALARMS

High/Low Battery Charger Voltage, High/Low AC Input Voltage, Near Low Battery, Low Battery, Load Reduction Fault, Output Overload, High Ambient Temperature, Inverter Fault, Output Fault, Optional Output Circuit Breaker Trip

OPTIONAL FEATURES

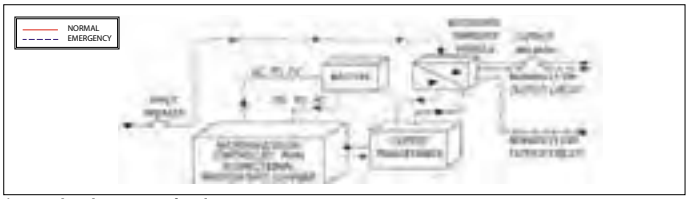
Output Circuit Breakers, Output Trip Alarms, 20 Years Sealed Batteries, 12 Hours Fast Recharge, Internal/External Maintenance Bypass Switch, Remote Meter Panel, Remote Summary Alarm Panel, Summary Alarm Dry Form C Contact, Inverter on Dry Contacts, Fax/Modem, Bypass Relays, Auto Dialer, Seismic Mounting.

FACTORY START-UP

Includes one additional year of warranty. See warranty conditions.

WARRANTY (full limited warranty conditions available upon request)
Limited manufacturer warranty is one-year, parts and labor, for system electronics or two-year with factory start-up program. Battery warranty is one year full plus 9 years pro-rata for a total of 10 years, under normal operating conditions. System must be put in service within 6 months from ship date in order to validate warranty.
2- Consult factory for other type batteries than the standard one.

SINGLE LINE DIAGRAM



***output breakers are optional**

Characteristics, specifications or dimensions subject to change without notice.

LIGHT SUPPORT POWER SYSTEMS
FTC SINGLE PHASE SERIES

FEATURES

- 98% efficient @ full load
- PWM/IGBT technology
- Self-testing/Self-diagnostic
- User programmable with password protection
- Standard input circuit breaker
- RS232 communication port
- Micro-processor controlled
- Automatic event and alarm log
- 90 min. standard run time
- Generator compatibility
- Electronic and magnetic ballast compatible
- Custom voltages available
- Automatic event, test and alarm log
- LCD display
- Reduced footprint (stackable cabinets)
- Maintenance free standard batteries
- Forced air cooling during emergency mode only

ELECTRICAL/MECHANICAL CHARACTERISTICS[4] (data provided for standard lead calcium batteries)[1, 4]

POWER RATING[1] kVA=kW	EFFIC. AT FULL LOAD %	MAX. INPUT CURRENT (A)		HEAT LOSS IN NORMAL MODE (BTU/HR)	BATT. VDC	BATT. A	NO. OF BATT.	UPS CABINET DIMENSIONS			BATTERY CABINET DIMENSIONS[2,3]			NO. OF BATT CAB.	BATT. CAB. WEIGHT LBS (EMPTY)	UPS CAB. WEIGHT LBS	BATT. WEIGHT LBS	TOTAL SYSTEM WEIGHT LBS
		120V	277V					W"	H"	D"	W"	H"	D"					
1.5	98	16	7	102	48	39	4	30	47	25	NA	NA	NA	NA	NA	250	296	546
2.25	98	24	11	153	72	38	6	30	47	25	NA	NA	NA	NA	NA	265	444	709
3	98	32	14	204	96	38	8	30	47	25	NA	NA	NA	NA	NA	295	592	887
3.75	98	39	17	255	120	37	10	30	47	25	NA	NA	NA	NA	NA	305	740	1045
5	98	50	22	340	144	40	12	30	47	25	NA	NA	NA	NA	NA	315	888	1203
6	98	63	27	408	180	40	15	30	47	25	30	47	25	1	210	350	1110	1670
8	98	84	36	544	240	39	20	30	47	25	30	47	25	1	232	375	1480	2087
10	98	105	45	680	144	82	24	30	47	25	30	47	25	2	420	435	1776	2631
12.5	98	131	57	850	180	82	30	30	47	25	30	47	25	2	420	465	2220	3105
16.7	98	174	76	1136	240	80	40	30	47	25	30	47	25	2	464	530	2960	3954

1- Consult factory for 20 year type batteries or for wet nickel cadmium batteries
2- Batteries are installed in the electronics cabinet for 1.5 to 5kVA systems
3- Battery cabinets are stackable. To be installed on the right side of the electronics cabinet
4- Special voltages or batteries may change the size, weight or number of cabinets

ORDERING INFORMATION

SYSTEM TYPE	BATTERY TYPE	INPUT VOLTAGE[3]	VA/W RATING	OUTPUT VOLTAGE[3]	RUN TIME[2]	INPUT BREAKER	RS232 PORT	OUTPUT BREAKERS[4]	OPTIONS[1]
FTC	**SC**- Sealed Lead-Calcium **NC**- Wet Nickel-Cadmium	**120** **208** **240** **277**	**G**- 1500 **K**- 2250 **L**- 3000 **M**- 3750 **P**- 5000 **R**- 6000 **S**- 8000 **T**- 10000 **U**- 12500 **V**- 16700	**120** **277** **208** **120/240** **120/277**	**90**	**ICB**	**RS232**	**OCBxxxx**- No trip alarm **OCAxxxx**- With trip alarm	**20Y**- 20 yr sealed batteries **12HR**- 12 hr fast recharge **MBYP**- Internal bypass switch **EMBP**- External bypass switch[5] **RMP**- Remote metering panel **RSAP**- Remote summary alarm panel **DCS**- Dry summary alarm contacts **INVON**- Inverter on dry contacts **VTD**- Variable time delay **MOD**- External modem **FAX**- Fax modem **BPR**- Bypass relays **DIAL**- Autodialer **SEIS**- Seismic mounting **ZONEM**- Zone monitoring **BATM**- Battery cycle warranty monitor **NOFF**- Normally Off output[6]
		[3] Special voltages may change the size, weight or number of cabinets		[3] Special voltages may change the size, weight or number of cabinets	[2] Other run times available			[4] Max. 12 unsupervised single pole positions or 8 with trip alarm. For more output breakers please consult factory. See page 145 for output breakers option details.	[1] See page 145 for options description [5] External bypass switch is not compatible with integrated output circuit breakers. Input/output voltage has to be the same. [6] Normally Off loads cannot exceed 20% of total KVA rating with any combination of H.I.D loads

EXAMPLE: FTC-SC277L277-90-ICB-RS232-OCB0620-DCS-20Y

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

Fast transfer emergency lighting Inverter System 1.5KVA –16.7KVA

SPECIFICATIONS

GENERAL

Design

- Stand-by. PWM inverter type utilizing IGBT technology with 2ms transfer time.

Control

- Microprocessor controlled , 2 x 20-character display with touch pad controls & functions
- 5 LED indicators & alarm with ring-back feature

Metering

- Input & Output Voltage, Battery Voltage, Battery & Output Current, Output VA, Temperature, Inverter Wattage

Communications RS-232 port (DB9)

ELECTRICAL INPUT

Voltage

- 120 or 277VAC 1-phase 2-wire +10% - 15%. Contact factory for all other voltages.

Input Power Walk-In

- Limiting inrush current to less than 125%, 10 times for 1 line cycle

Input Frequency

- 60Hz, +/-3%, 50Hz available upon request

Protection Input Circuit Breaker

Harmonic Distortion <10%

Power Factor 0.5 lag/lead

ELECTRICAL OUTPUT

Voltage

- 120 or 277VAC 1-phase 2-wire. Contact factory for all other voltages.

Static Voltage

- Load current change +/-2%, battery discharge +/-12.5%

Dynamic Voltage

- +/-2% for +/-25% load step change,
- +/-3% for a 50% load step change, recovery within 3 cycles

Harmonic Distortion <3% THD for linear load

Output Frequency 60Hz +/- 0.05Hz during emergency mode

Load Power Factor 0.5 lag to 0.5 lead

Inverter Overload 125% for 5 minutes

Protection Optional Distribution Circuit Breaker

Crest Factor 2.8

ENVIRONMENTAL CONDITIONS

Storage/Transport

- -4ºF to 158ºF (-20ºC to 70ºC) without batteries
- -0ºF to 104ºF (-18ºC to 40ºC) with batteries (max. 3 months at 104° F (40° C)

Operating temperature

- System operates safely from 32°F to 104°F (0°C to 40°C) but optimum operation is between 68° F and 86°F (20°C to 30°C. Battery performance can be affected by temperature.

Altitude

- <10,000 feet (above sea level) without de-rating

Relative Humidity

- 0 to 95% non-condensing

Audible noise 45 dBA @ 1m from surface in emergency mode

CABINETS

Modular design, freestanding NEMA type 1 steel cabinets powder coated for corrosion and scratch resistance. Front access design through hinged lockable doors requires only 39" front clearance and 12" top clearance. Cabinets are stackable if required to further reduce the footprint. Top and left side conduit entry with knockouts.

INVERTER

Using IGBT/PWM technology the inverter converts the DC voltage supplied by the batteries to AC voltage of a precise stabilized amplitude and frequency, suitable for most sophisticated electrical equipment. True sinusoidal output waveform with very low distortion (less than 3% for linear loads). Overload capability of up to 150% for 12 line cycles.

CHARGER

Fully automatic, temperature compensated, microprocessor controlled charger recharges fully discharged batteries in maximum 24 hours at nominal AC input voltage. AC input current limiting and over-voltage protection included.

BATTERY

System is provided standard with 10 year, maintenance free, sealed valve regulated, front terminals lead calcium batteries. 20 years life sealed lead calcium or wet nickel cadmium batteries also available. 90 min. standard discharge time at full load under normal operating temperature. Low Voltage Disconnect protection included. No special ventilation required.

SUPERVISION

Automatic self tests consist of a 5-minute monthly and 90-minute annual function. The front-mounted control panel includes 5 LED indicators, a 2-line 20-character LCD display, a keypad to control and monitor the internal operation of the system. This allows the operator to easily "watch" system functions as they occur and check on virtually any aspect of the system's operation. Standard RS232 diagnostic interface.

ALARMS

High/Low Battery Charger Voltage, High/Low AC Input Voltage, Near Low Battery, Low Battery, Load Reduction Fault, Output Overload, High Ambient Temperature, Inverter Fault, Output Fault, Optional Output Circuit Breaker Trip

OPTIONAL FEATURES

Output Circuit Breakers, Output Trip Alarms, 20 Years Sealed Batteries, 12 Hours Fast Recharge, Internal/External Maintenance Bypass Switch, Remote Meter Panel, Remote Summary Alarm Panel, Summary Alarm Dry Form C Contact, Inverter on Dry Contacts, Normally OFF output, Fax/Modem, Bypass Relays, Auto Dialer, Seismic Mounting.

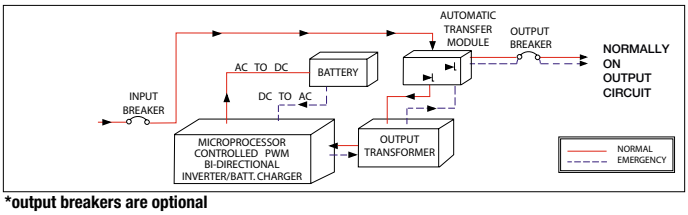
FACTORY START-UP

Includes one additional year of warranty. See warranty conditions.

WARRANTY (full limited warranty conditions available upon request)

Limited manufacturer warranty is one-year, parts and labor, for system electronics or two-year with factory start-up program. Battery warranty is one year full plus 9 years pro-rata for a total of 10 years, under normal operating conditions. System must be put in service within 6 months from ship date in order to validate warranty.
2- Consult factory for other type batteries than the standard one.

SINGLE LINE DIAGRAM



***output breakers are optional**

Characteristics, specifications or dimensions subject to change without notice.

LIGHT SUPPORT POWER SYSTEMS
3FTC THREE PHASE SERIES

FEATURES

- 98% efficient @ full load
- PWM/IGBT technology
- Self-testing/Self-diagnostic
- User programmable with password protection
- Standard input circuit breaker
- Standard internal bypass switch
- RS232 communication port
- Micro-processor controlled
- Automatic event and alarm log
- 90 min. standard run time
- Generator compatibility
- Available in Y or Δ input configuration
- Custom voltages available
- Automatic event, test and alarm log
- LCD display
- Reduced footprint
- Maintenance free standard batteries
- Forced air cooling during emergency only

ELECTRICAL/MECHANICAL CHARACTERISTICS [4] (data provided for standard lead calcium batteries) [1, 4]

POWER RATING [2] KVA=KW	EFFIC. AT FULL LOAD %	MAX. INPUT CURRENT (A)		HEAT LOSS IN NORMAL MODE (BTU/HR)	BATT. VDC	BATT. A	NO. OF BATT.	UPS CABINET DIMENSIONS			BATTERY CABINET DIMENSIONS [3]			NO. OF BATT CAB.	BATT. CAB. WEIGHT LBS (EMPTY)	UPS CAB. WEIGHT LBS	BATT. WEIGHT LBS	TOTAL SYSTEM WEIGHT LBS
		120V / 208V	277V / 480V					W"	H"	D"	W"	H"	D"					
4.8	98	17	7	326	144	39	12	30	47	25	30	47	25	1	NA	535	888	1633
6	98	21	9	408	180	39	15	30	47	25	30	47	25	1	NA	535	1110	1855
8	98	28	12	544	240	39	20	30	47	25	30	47	25	1	NA	535	1480	2247
10	98	35	15	680	144	81	24	30	47	25	30	47	25	2	NA	639	1776	2835
12.5	98	43	19	850	180	81	30	30	47	25	30	47	25	2	NA	639	2220	3279
16.7	98	58	25	1136	240	81	40	30	47	25	30	47	25	2	210	639	2960	4063
24	98	84	36	1632	240	117	60	48	72	31	48	72	31	1	232	1250	4440	6390
33	98	115	50	2244	240	160	40	48	72	31	48	72	31	2	420	1250	6080	8630
40	98	139	60	2720	240	194	100	48	72	31	48	72	31	2	420	1450	7400	10150
50	98	174	75	3400	240	243	60	48	72	31	48	72	31	2	464	1450	9120	11980

1- Consult factory for 20 year type batteries or for wet nickel cadmium batteries
2- KVA=KW
3- Battery cabinets up to 16.7KVA are stackable. To be installed on the right side of the electronics cabinet
4- Special voltages or batteries may change the size, weight or number of cabinets

ORDERING INFORMATION

SYSTEM TYPE	BATTERY TYPE	INPUT VOLTAGE [3]	VA/W RATING	OUTPUT VOLTAGE [3]	RUN TIME [2]	INPUT BREAKER	RS232 PORT	INTERNAL BYPASS SWITCH	OUTPUT BREAKERS [4]	OPTIONS [1]
3FTC	**SC**- Sealed Lead-Calcium **NC**- Wet Nickel-Cadmium	**120/ 208** **277/480**	**N**- 4800 **R**- 6000 **S**- 8000 **T**- 10000 **U**- 12500 **V**- 16700 **X**- 24000 **Y**- 33000 **Z**- 40000 **W**- 50000	**120/208** **277/480**	**90**	**ICB**	**RS232**	**MBYP**	**OCBxxxx**- No trip alarm **OCAxxxx**- With trip alarm	**20Y**- 20 yr sealed batteries **12HR**- 12 hr fast recharge **NOFF**- Normally off output 1PH [6] **EMBP**- External bypass switch [5] **RMP**- Remote metering panel **RSAP**- Remote summary alarm panel **DCS**- Dry summary alarm contacts **INVON**- Inverter on dry contacts **NOFF3**- Normally OFF output 3PH [6] **MOD**- External modem **FAX**- Fax modem **BPR**- Bypass relays **DIAL**- Autodialer **SEIS**- Seismic mounting **ZONEM**- Zone monitoring **BATM**- Battery cycle warranty monitor

[3] Special voltages may change the size, weight or number of cabinets. 3 wire, Δ input configuration available.

[3] Special voltages may change the size, weight or number of cabinets. 3 wire, Δ input configuration available.

[2] Other run times available

[4] Max. 12 unsu-pervised single pole positions or 8 with trip alarm, up to 16.7kVA systems. 24 unsupervised or 16 with trip alarm for systems 24kVA to 50kVA. For more output breakers please consult factory. See page 145 for output breakers option details.

[1] See page 145 for options description
[5] External bypass switch is not compatible with integrated output circuit breakers. Input/output voltage has to be the same.
[6] Normally off loads cannot exceed 20% of total KVA rating with any combination of H.I.D. loads.

EXAMPLE: 3FTC-SC277/480V277/480-90-ICB-RS232-MBYP-OCB1220-DCS-20Y

TYPE _____

CATALOG # _____

_____

NOTES _____

_____

Fast transfer emergency lighting Inverter system 4.8KVA – 50KVA

SPECIFICATIONS

GENERAL

Design

- Stand-by. PWM inverter type utilizing IGBT technology with 2ms transfer time.

Control

- Microprocessor controlled , 2 x 20-character display with touch pad controls & functions
- 5 LED indicators & alarm with ring-back feature

Metering

- Input & Output Voltage, Battery Voltage, Battery & Output Current, Output VA, Temperature, Communications

Communications RS-232 port (DB9)

ELECTRICAL INPUT

Voltage

- 120/208 or 277/480 3 phase 4-wire +10% - 15%. Contact factory for all other voltages.

Input Power Walk-In

- Limiting inrush current to less than 125%, 10 times for 1 line cycle

Input Frequency

- 60Hz, +/-3%, 50Hz available upon request

Protection Input Circuit Breaker
Harmonic Distortion <10%
Power Factor 0.5 lag/lead

ELECTRICAL OUTPUT

Voltage

- 120/208 or 277/480VAC 3-phase 4-wire

Static Voltage

- Load current change +/-4%, battery discharge +/-4%

Dynamic Voltage

- +/-3% for +/-25% load step change,
- +/-6% load step change, recovery within 3 cycles

Harmonic Distortion <3% THD for linear load
Output Frequency 60Hz +/- 0.05Hz during emergency mode
Load Power Factor 0.5 lag to 0.5 lead
Inverter Overload 115% for 5 minutes
Protection Optional Distribution Circuit Breaker
Crest Factor 2.8

ENVIRONMENTAL CONDITIONS

Storage/Transport (C)

- -4ºF to 158ºF (-20ºC to 70ºC) without batteries (max. 3 months at 104° F (40° C)
- -0ºF to 104ºF (-18ºC to 40ºC) with batteries

Operating temperature

- System operates safely from 32°F to 104°F (0°C to 40°C) but optimum operation is between 68° F and 86°F (20°C to 30°C). Battery performance can be affected by temperature.

Altitude

- <10,000 feet (above sea level) without de-rating

Relative Humidity

- 0 to 95% non-condensing

Audible noise 45 dBA @ 1m from surface in emergency mode

CABINETS

Modular design, freestanding NEMA type 1 steel cabinets powder coated for corrosion and scratch resistance. Front access design through hinged lockable doors requires only 39" front clearance and 12" top clearance. Cabinets are stackable up to 16.7kVA, if required to further reduce the footprint. Top and left side conduit entry with knockouts up to 16.7kVA. Left side only for 24kVA and up.

INVERTER

Using IGBT/PWM technology the inverter converts the DC voltage supplied by the batteries to AC voltage of a precise stabilized amplitude and frequency, suitable for most sophisticated electrical equipment. True sinusoidal output waveform with very low distortion (less than 3% for linear loads). Overload capability of up to 150% for 12 line cycles.

CHARGER

Fully automatic, temperature compensated, microprocessor controlled charger recharges fully discharged batteries in maximum 24 hours at nominal AC input voltage. AC input current limiting and over-voltage protection included.

BATTERY

System is provided standard with 10 year, maintenance free, sealed valve regulated, front terminals lead calcium batteries. 20 years life sealed lead calcium or wet nickel cadmium batteries also available. 90 min. standard discharge time at full load under normal operating temperature. Low Voltage Disconnect protection included. No special ventilation or filters required.

SUPERVISION

Automatic self tests consist of a 5-minute monthly and 90-minute annual function. The front-mounted control panel includes 5 LED indicators, a 2-line 20-character LCD display, a keypad to control and monitor the internal operation of the system. This allows the operator to easily "watch" system functions as they occur and check on virtually any aspect of the system's operation.

Standard RS232 diagnostic interface.

ALARMS

High/Low Battery Charger Voltage, High/Low AC Input Voltage, Near Low Battery, Low Battery, Load Reduction Fault, Output Overload, High Ambient Temperature, Inverter Fault, Output Fault, Optional Output Circuit Breaker Trip.

OPTIONAL FEATURES

Output Circuit Breakers, Output Trip Alarms, 20 Years Sealed Batteries, 12 Hours Fast Recharge, External Maintenance Bypass Switch, Remote Meter Panel, Remote Summary Alarm Panel, Summary Alarm Dry Form C Contact, Inverter on Dry Contacts, Normally OFF output, Fax/Modem, Bypass Relays, Auto Dialer, Seismic Mounting.

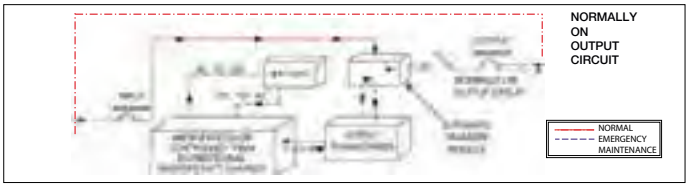
FACTORY START-UP

Includes one additional year of warranty. See warranty conditions.

WARRANTY (full limited warranty conditions available upon request)

Limited manufacturer warranty is one-year, parts and labor, for system electronics or two-year with factory start-up program. Battery warranty is one year full plus 9 years pro-rata for a total of 10 years, under normal operating conditions. System must be put in service within 6 months from ship date in order to validate warranty. 2- Consult factory for other type batteries than the standard one.

SINGLE LINE DIAGRAM



***Output breakers are optional**

Characteristics, specifications or dimensions subject to change without notice.

LIGHT SUPPORT POWER SYSTEMS FTC3R & 3FTC3R OUTDOOR SERIES

Outdoor fast transfer emergency lighting Inverter system 3KVA – 8KVA

TYPE _____

CATALOG # _____

NOTES _____

FEATURES

- 98% efficient @ full load
- PWM/IGBT technology
- Self-testing/Self-diagnostic
- Standard input circuit breaker
- Standard internal bypass switch
- RS232 communication port
- Standard seismic zone 4 brackets
- Standard summary dry contacts
- Automatic event and alarm log
- NEMA 3R cabinet for outdoors
- 90 min. standard run time
- Generator compatibility
- Custom voltages available
- Automatic event, test and alarm log
- LCD display
- One size cabinet
- Maintenance free standard 5 year batteries
- Temperature controlled cooling fans

ELECTRICAL/MECHANICAL CHARACTERISTICS [3, 4]

POWER RATING kVA=kW	EFFIC. AT FULL LOAD %	HEAT LOSS (BTU)	BATT. VDC	BATT. A	NO. OF BATT. [2]	UPS CABINET DIMENSIONS			UPS CAB. WEIGHT LBS	BATT. WEIGHT LBS	TOTAL SYSTEM WEIGHT LBS
						W" [1]	H"	D"			
3 (1PH)	98	255	120	37	10	48	76	30	535	888	1633
4 (1PH)	98	340	144	40	12	48	76	30	535	1110	1855
5 (1PH)	98	408	180	40	15	48	76	30	535	1480	2247
6.5 (1PH)	98	544	240	39	20	48	76	30	639	1776	2835
8 (1PH)	98	680	144	82	24	48	76	30	639	2220	3279
4 (3PH)	98	326	144	39	12	48	76	30	639	2960	4063
5 (3PH)	98	408	180	39	15	48	76	30	1250	4440	6390
6.5 (3PH)	98	544	240	39	20	48	76	30	1250	6080	8630
8 (3PH)	98	680	144	81	24	48	76	30	1450	7400	10150

1- Factory installed floor mount brackets; add 2.5" to each side (total 53")
2- Standard batteries are 5 year life expectancy. Batteries are installed in the same cabinet with electronics.
3- UL rated for 90 min. run time for temperatures: 50ºF to 104ºF (10ºC to 40ºC) or -4ºF to 104ºF (-20ºC to 40ºC) with optional heater.
4- NEMA type 3R, freestanding, two-door powder coat cold rolled steel cabinet standard. Stainless steel enclosure is optional.

ORDERING INFORMATION

SYSTEM TYPE	BATTERY TYPE	INPUT VOLTAGE [3]	VA/W RATING [5]	OUTPUT VOLTAGE [3]	RUN TIME [2]	INPUT BREAKER	RS232 PORT	INTERNAL BYPASS SWITCH	OUTPUT BREAKERS [4]	OPTIONS [1]
FTC3R- single phase **3FTC3R**- 3 phase	**SC**- Sealed Lead-Calcium	**120**, 1PH **208**, 1PH **240**, 1PH **277**, 1PH **120/208**, 3PH **277/480**, 3PH	**L**- 3000 **M**- 4000 **P**- 5000 **R**- 6500 **S**- 8000	**120** **208** **277** **120/208** **277/480**	**90**	**ICB**	**RS232**	**MBYP**	**OCBxxxx**- No trip alarm **OCAxxxx**- With trip alarm	**10Y**- 10 yr sealed batteries **12HR**- 12 hr fast recharge **NOFF**- Normally off output [6] **EMBP**- External bypass switch [5] **RMP**- Remote metering panel **RSAP**- Remote summary alarm panel **HTR**- Heater **INVON**- Inverter on dry contacts **MOD**- External modem **FAX**- Fax modem **BPR**- Bypass relays **SS**- Stainless steel enclosure
		[3] 1PH are input voltages available for 1 phase systems. 3PH are input voltages available for 3phase systems.	[5] Not available in 3 phase version.	[3] 1PH are input voltages available for 1 phase systems. 3PH are input voltages available for 3phase systems.	[2] Other run times available.				[4] Max. 14 unsupervised single pole positions or 8 with trip alarm. See page 145 for output breakers option details.	[1] See page 145 for options description. Summary alarm dry contacts and seismic brackets are standard. [5] Not available in 3 phase version. [6] Normally off loads cannot exceed 20% of total KVA rating with any combination of H.I.D. loads.

EXAMPLE: FTC3R-SC277P277-90-ICB-RS232-MBYP-OCB1020-10Y

Light Support Power Systems Options

INTEGRATED OUTPUT CIRCUIT BREAKERS:

-OCB	12	20			
Trip Alarm **OCB** - No Breaker Trip Alarm **OCA** - With Breaker Trip Alarm	**Number of Circuit Breakers** Combination of 1 pole, 2 pole and 3 pole breakers available. *For max. number of circuit breakers available please consult factory	**Breaker Rating (Amps)** *Various ratings available	**Number of poles** Blank - 1 pole **-2P** - 2 poles **-3P** - 3poles	Breaker Voltage **Blank**- matches system output voltage **-120VAC** **-208VAC** **-240VAC** **-277VAC** **-480VAC**	**Operation Mode** **Blank:** Normally-On **-NOFF:** Normally-Off

Distribution circuit breakers are for output load protection. Protection for the normally on and/or for the normally off loads. All circuit breakers are rated for 10,000 AIC. If ordered, an audible and visual alarm activates when an output distribution circuit breaker is open or has tripped.

(-20YR) 20 Year Sealed Lead Calcium Batteries
Maintenance free battery requires no addition of water over the life of the battery. The battery cells are housed in protective, modular steel trays. Life expectancy is designed for 20-years at 77ºF (25ºC).

(-12HR) 12 Hour Fast Recharge
Battery charger upgrade option which decreases the time required to return a fully discharged battery to the fully charged state. The normal 24 hour recharge cycle is reduced to a 12 hour period.

(-MBYP) Internal Maintenance Bypass Switch
Internally mounted device permits maintenance personnel to easily bypass the protected equipment directly to the AC utility power. The manual make before break switch isolates the system to perform routine maintenance or servicing without interruption of utility power to the connected load.

(-EMBP) External Maintenance Bypass Switch
The external maintenance bypass switch is mounted in a 20"H x 16"W x 9"D NEMA 1 separate enclosure, used to completely isolate the inverter system from the connected load and AC utility input. This option allows the system to be safely powered down for maintenance or service. The option may not be used on systems with more than one single pole output circuit breaker which must be sized for the total system output current.

(-RMP) Remote Meter Panel
The panel allows monitoring of parameters and control from remote locations up to 150 feet away from the inverter system. Also, the remote panel provides a complete touch pad interface allowing the user to monitor, control and program the inverter system.

(-RSAP) Remote Summary Alarm Panel
Wall mountable box provides visual and audible alarms with silent switch. The panel consists of LED indicators and built in audible alarm and may be located up to 1,000 feet away from the inverter system.

(-DCS) Summary Alarm Dry Contacts
Form C dry contacts for remote monitoring purposes. Rated at 5 amps max. (250VAC/30VDC), the contacts will change state when any of the following alarms: High/Low Battery Charger Voltage, High/Low AC Input Voltage, Near Low Battery Voltage, Low Battery Voltage, Load Reduction Fault, High Ambient Temperature, Inverter Fault, Output Fault, Output Overload or Optional circuit breaker trip alarms, occurs.

(-INVON) Inverter On Dry Contacts
Form C dry contacts that will change state when the system transfers to battery operation

(-VTD) Variable Time Delay (for normally off circuits)
After a return of AC utility power, delays retransfer of the inverter for up to 15 min. and continues to supply emergency power to the normally off circuits.

(-NOFF) Normally Off Output
This output circuit is dedicated for the emergency only equipment. Emergency only equipment operates during power outages and when the system is on battery back up. This option leaves the normally off load circuits off during normal utility power conditions. A 1-pole circuit breaker is provided. For 3 phase systems, 3 pole normally off circuits are available as well.

(-MOD) External Modem
External modem device is designed to boost the signal level of the RS-232 diagnostic interface to remote monitoring locations located more than 100 feet away from the system.

(-FAX) Internal Fax Modem
The internal fax modem enables the system to send a fax automatically to several pre-programmed numbers when one of the following conditions occurs: utility failure, output failure or any alarm. The Fax Modem option requires a user supplied dedicated phone line.

(-BPR) Bypass Relays
Internal bypass relays will allow overriding circuits that can be switched on/off, so in case of a power failure the emergency circuits will be supplied from the inverter system whatever the position of the switching device. Please consult factory for more details.

(-DIAL) Auto Dialer
The Auto Dialer modem option automatically dials up to four user-programmable phone numbers in the event of any system alarm condition. The option is designed to deliver a predetermined digital or audible message when activated. The Auto Dialer option requires a user supplied dedicated digital or analog phone line.

(-SEIS) Seismic Mounting Kit
The seismic mounting kit option is designed to prevent system movement during seismic events. Heavy duty brackets are provided to secure system cabinetry to floor surfaces. Meets Zone 4 requirements.

(-ZONEM) Zone Monitoring
Allows voltage monitoring of different circuits than the standard AC utility input. When the voltage of one of these circuits drops, the inverter system will go into battery back-up operation mode. Number and voltage of the monitored circuits to be specified.

(-RS232) Diagnostic Interface
A microprocessor-based data acquisition system designed to monitor all the system parameters remotely. Monitors alarm log, event log and automatic test log. User can command the system to perform a battery test and review all system parameters. Access is through a DB9 connector and transmits at 9600 baud.

(-BATM) Battery Cycle Warranty Monitor
Device providing battery monitoring at string level or cell level. Please consult factory for more details.

Light Support Power Systems
Control Panel & Display Functions

METER FUNCTIONS
- AC Voltage Input
- AC Voltage Output
- AC Current output
- Battery Voltage
- Battery Current
- VA Output
- Inverter Watts
- Ambient Temperature
- System Days (cumulative)
- Inverter Minutes (cumulative)

PROGRAM FUNCTIONS
- Set Date
- Set Time
- Set Monthly Test Date and Time
- Set Annual Test Date and Time
- Set Load Fault Reduction Setting
- Set Low Battery Alarm
- Set Near Low Battery Alarm
- Set Low AC Voltage Alarm
- Set High AC Alarm
- Set Ambient Temperature Alarm

ALARMS
- High Battery Charger Voltage
- Low Battery Charger Voltage
- High AC Input Voltage
- Low AC Input Voltage
- Near Low Battery Voltage
- Low Battery Voltage
- Load Reduction Fault
- High Ambient Temperature
- Inverter Fault
- Output Fault
- Output Overload

CONTROL FUNCTIONS
- Test and Event Logs
  (75 logs stored) Logs record the following data:
  Date, Time, Duration,
  Output Voltage, Output Current, Ambient
  Temperature and Alarms Present.
- Alarm Logs
  (50 logs stored) Logs record the following data:
  Date,Time and Alarm type
- Buzzer On/Off (toggle)
- 5 LED Indicators and Alarms With Ringback Feature

SYSTEM TESTING
Systems provide one manual and two automatic test functions. Manual tests of system may be performed at any time using the control panel test key. Automatic self-diagnostic tests consist of a 5-minute monthly and 90-minute annual function (the user can program the date and time of day the test is to take place). The microprocessor automatically records the last 75 test events in its own separate test result log.

Light Support Power Systems
AC Central Systems Request Data

1) INPUT VOLTAGE

Single phase (2 wire + ground)	120VAC ❑	208VAC ❑	240VAC ❑	277VAC ❑
Three phase (4 wire + ground, Y)	120/208VAC ❑	277/480V ❑		
Three phase (3 wire + ground, Δ)	208VAC ❑	480VAC ❑		

2) OUTPUT VOLTAGE

Single phase (2 wire + ground)	120VAC ❑	208VAC ❑	277VAC ❑
Single phase (3 wire + ground)	120/240V ❑	120/277 ❑	
Three phase (4 wire + ground, Y)	120/208VAC ❑	277/480V ❑	

3) SYSTEM CAPACITY

KVA rating:_____ System series type_____

a) Please consider power consumption and maximum current of the complete lamp fixture not just the lamp wattage (ie: ballasts consumption)

b) Please consider loads power factor

c) Even if the systems can run with 100% load, it is recommended as standard practice to use a system with a capacity at least 10% over maximum connected load

4) TYPE OF LOADS

Incandescent ❑ Fluorescent ❑ H.I.D (metal halide, high pressure sodium, etc.) ❑

Others _____

5) MODE OF OPERATION

Normally ON (24/7 ❑ Normally OFF (emergency only ❑ Switched loads ON/OFF ❑

a) Please consider internal bypass relays or external override relays for switched On/Off loads. Each switched output circuit will require a bypass relay. Maximum 20 A per circuit.

6) INTEGRATED OUTPUT CIRCUIT BREAKERS

of CB_____ Amps_____ Voltage_____ # of poles ___ NON ❑ NOFF ❑ Trip alarm ❑

#of CB_____ Amps_____ Voltage_____ # of poles ___ NON ❑ NOFF ❑ Trip alarm ❑

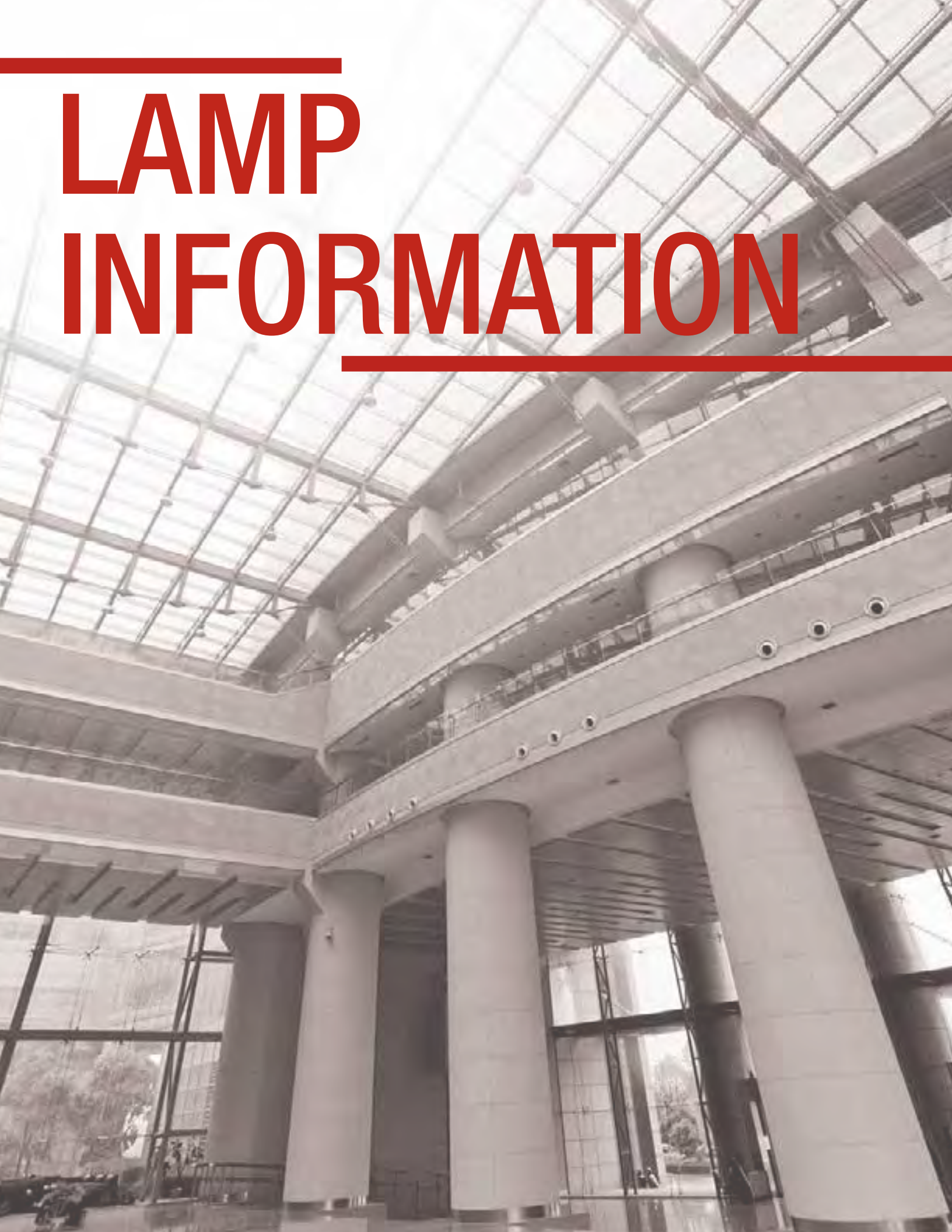
7) TYPE OF BATTERIES (check availability for each type system)

10 yr sealed lead calcium ❑ 20 yr sealed lead calcium ❑ wet nickel cadmium ❑

8) OPTIONS (refer to available options for each type system)

- ❑ 12HR- 12 hr fast recharge
- ❑ MBYP- internal bypass switch
- ❑ EMBP- external bypass switch
- ❑ RMP- remote metering panel
- ❑ RSAP- remote summary alarm panel
- ❑ DCS- dry summary alarm contacts
- ❑ INVON- inverter on dry contacts
- ❑ RS232- diagnostic interface
- ❑ WB- wall mount bracket
- ❑ NOFF – normally OFF output
- ❑ MOD- external modem
- ❑ FAX- fax modem
- ❑ BPR- bypass relays How many _____
- ❑ DIAL- autodialer
- ❑ SEIS- seismic mounting
- ❑ ZONEM- zone monitoring
- ❑ VTD- variable time delay
- ❑ BATM – battery cycle warranty monitor

LAMP INFORMATION



Lamp Information

LAMP REFERENCE CHART

150-151

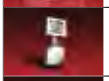
LAMP DATA

152-153

Series Lamp Type Reference Chart

When choosing a lamp:

1) The voltage of the lamp MUST match the voltage of the battery powering that lamp.
2) The wattage draw of all lamps can not exceed the battery wattage capacity for 90 minutes.
NOTE: For complete lamp suffix information refer to the lamp reference chart on page. 166-167

		LAMP TYPE & HEAD STYLE TYPES						
		MR16-LED (LAMP ONLY)	MR16-HALOGEN (LAMP ONLY)	LED SOURCE (HOUSING WITH AN INTEGRAL HEAD DESIGN)	WEDGE BASE INCADESCENT (LAMP ONLY)	BI-PIN HALOGEN (LAMP ONLY)	MR16-LED (IN DR1130 HEAD STYLE)	MR16-LED (IN ELF3 HEAD STYLE
LAMP SUFFIX		LD*	M*		L*	LH*	LD*	LD*
UNITS	Product name & page							
	Phantom™ Series P. 60-61	X	X					
	Mini-Phantom™ Series P. 62-63	X	X					
	TBR Series P. 64-65						X	X
	RD Series P. 66-67						X	X
	605 Series P. 68							
	LCA-2LEDR Series P. 70-71			X				
	LCA-2MRS Series P. 72		X					
	LCA-2LD Series P. 72	X						
	LCA1250 Series P. 73	X	X					
	Grande™ Series P. 74-75	X	X					
	Camray™ LED Series P. 76-77			X				
	MC Series P. 78-79						X	X
	PG & P12G Series P. 80-81						X	X
	PN & P12N Series P. 82-83						X	X
	PQ & P12Q Series P. 84-85						X	X
	S12E & S24E Series P. 86-87						X	X
	FG & FN Series P. 88-89							
	Severe™ V Series P. 90-91	X	X					
	Severe™ VH Series P. 92-93	X	X					
	EXP6N & EXP12N Series P. 94-95				X	X		

NOTE: This is a quick reference guide only. Refer to individual product pages for complete details regarding applicable models.

DR1130 P. 104 | **ELF2** P. 105 | **ELF3** P. 106 | **ELF645** P. 108 | **ELF647** P. 109

LAMP TYPE & HEAD STYLE TYPES							
MR16-HALOGEN (IN DR1130 HEAD STYLE)	MR16-HALOGEN (IN ELF3 HEAD STYLE)	WEDGE BASE INCANDESCENT (IN ELF2 HEAD STYLE)	WEDGE BASE INCANDESCENT (IN ELF645 OR ELF647 HEAD STYLE	BI-PIN HALOGEN (IN ELF2 HEAD STYLE)	BI-PIN HALOGEN (IN ELF645 OR ELF647 HEAD STYLE)	PAR36 SEALED BEAM INCANDESCENT (IN ELF645 OR ELF647 HEAD STYLE)	PAR36 SEALED BEAM HALOGENE (IN ELF645 OR ELF647 HEAD STYLE)
M*	M*	L*	L*	LH*	LH*	#*	H#*
X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X
			X		X	X	X

NOTE: This is a quick reference guide only. Refer to individual product pages for complete details regarding applicable models.

Lamp Data

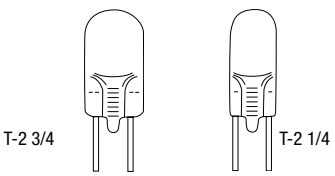
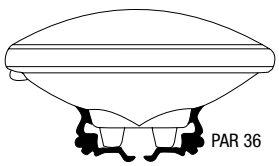
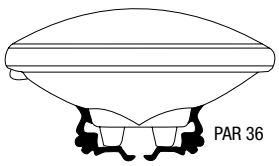
Important considerations when choosing the proper lamp

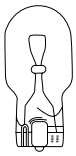
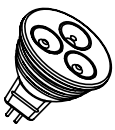
Emergency Lighting is required to provide illumination for a minimum of 90 minutes or an hour and a half during an emergency situation. Emergency Lighting lamps powered from a DC battery source must be powered by a battery that has the capacity to power all the lamps using that battery source for a minimum of 90 minutes. It is important to choose the correct lumen output lamp to meet the required illumination at the floor level on a path of egress. It is equally important to match the lamp and the battery voltages. If you do not have a battery that is the same voltage as the lamp and with enough wattage capacity to illuminate all the lamps, then the lamps will not provide adequate lumen output for 90 minutes to meet the required illumination at floor level along the path of egress.

First, match voltage. The voltage of the lamp MUST exactly match the voltage of the battery powering that lamp. If the voltage of the battery is lower than the voltage of the lamp, the lamp may not illuminate. If the voltage of the battery is higher than the voltage of the lamp, the lamp may "pop".

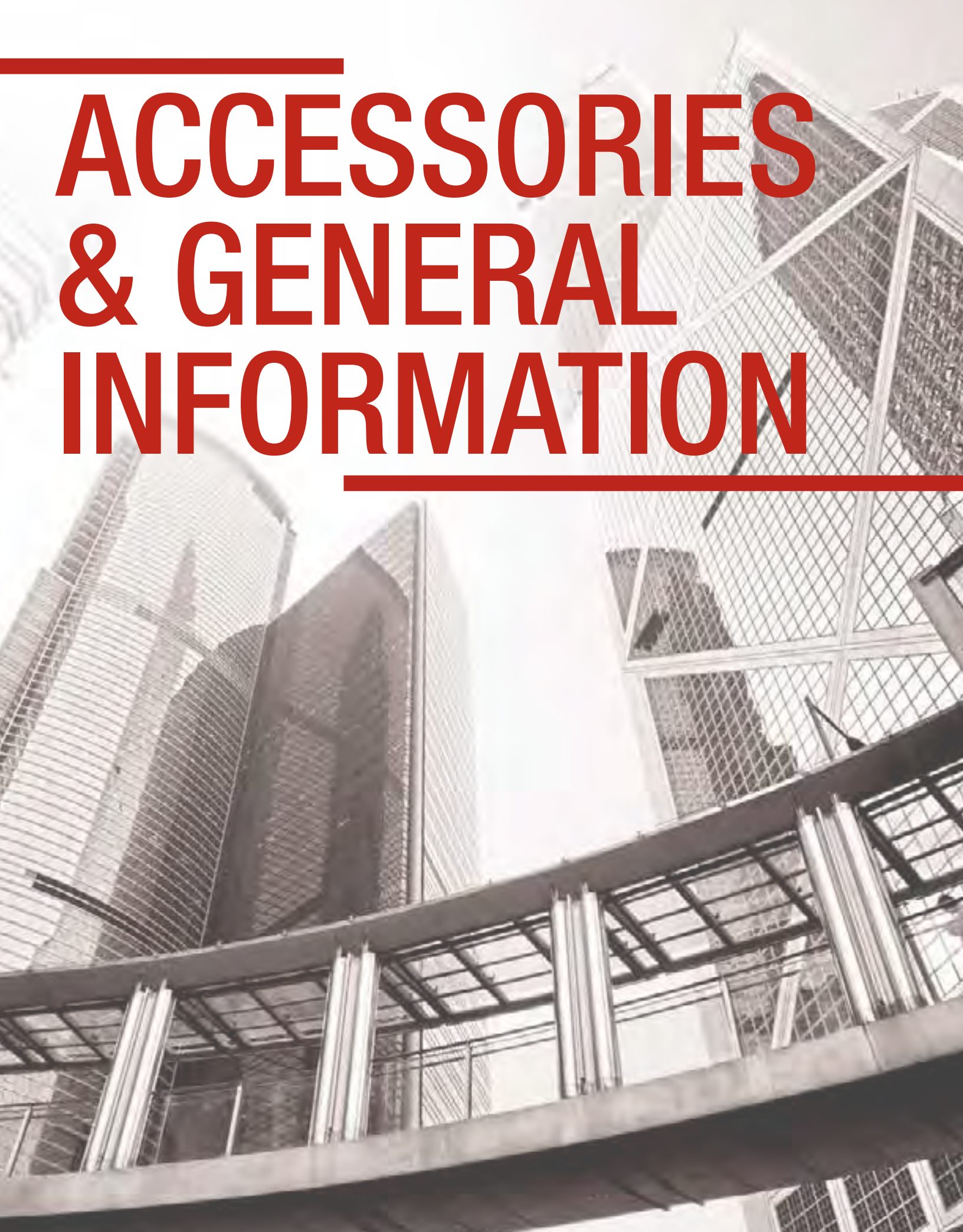
Second, consider total wattage. The wattage of each individual lamp drawing from a battery during emergency operation, including the lamps mounted on the unit as well as all remote lamps wired to that unit, added together, CAN NOT EXCEED the total wattage capacity of that battery within 90 minutes of operation. A unit's battery wattage capacities are shown in the Unit Rating Chart of each particular unit.

Available lamp types are shown on the Lamp Selection Chart on the catalog page for each head style or fixture type. Lamp Selection Chart information refers to a single lamp. If you are using a double or triple lamp type head or fixture, the wattage draw of that head or fixture will be the total number of lamps used. For example, if you are using a double lamp fixture with a 12W lamp, that fixture will have a 24W draw (two lamps of 12W each, 12W + 12W = 24W total).

LAMP TYPE	PART NUMBER	LAMP SUFFIX	VOLTAGE	WATTS	AVERAGE LUMEN	TOTAL CANDLE POWER (CP)	LAMP #	BULB TYPE
Bi-Pin Halogen Lamps 	580.0012-L	LH4	6	6	113	9	784	T-2 1/4
	580.0013-L	LH5	6	8	163	13	785	T-2 1/4
	580.0017-L	LH7	6	10	200	16	787	T-2 1/4
	580.0011-L	LH6	6	12	240	19	786	T-2 1/4
	580.0022-L	LH8	6	20	400	32	788	T-2 1/4
	580.0014-L	LH8	12	8	163	13	774	T-2 1/4
	580.0015-L	LH3	12	12	276	22	783	T-2 1/4
	580.0016-L	LH9	12	14	300	24	789	T-2 3/4
	580.0027-L	LH2	12	20	314	25	782	T-2 3/4
LAMP TYPE	**PART NUMBER**	**LAMP SUFFIX**	**VOLTAGE**	**WATTS**	**AVERAGE LUMEN**	**CENTER-BEAM CANDLE POWER (CBCP)**	**LAMP #**	**BULB TYPE**
Sealed Beam Halogen Lamps 	550.0022-L	H7556	6	6	107	400	H7556	PAR 36
	550.0036-L	H7551	6	8	155	550	H7551	PAR 36
	550.0037-L	H7552	6	10	190	650	H7552	PAR 36
	550.0019-L	H7553	6	12	225	850	H7553	PAR 36
	550.0021-L	H7554	6	20	380	1,400	H7554	PAR 36
	550.0024-L	H7555	12	8	130	550	H7555	PAR 36
	550.0025-L	H7557	12	12	240	850	H7557	PAR 36
	550.0047-L	H7616	12	37	700	13,000	H7616	PAR 36
	550.0012-L	H7614	12	50	950	2,000	H7614	PAR 36
Sealed Beam Incandescent Lamps 	550.0018-L	7613	6	8	130	400	7613	PAR 36
	550.0030-L	4042	6	12	180	1,100	4042	PAR 36
	550.0016-L	4014	6	18	270	1,500	4014	PAR 36
	550.0017-L	4510	6	25	400	800	4510	PAR 36
	550.0035-L	4515	6	30	460	5,500	4515	PAR 36
	550.0026-L	4044	12	12	190	1,110	4044	PAR 36
	550.0027-L	4414	12	18	210	1,500	4414	PAR 36
	550.0023-L	4446	12	25	395	400	4446	PAR 36
	550.0034-L	4416	12	30	430	13,000	4416	PAR 36

LAMP TYPE	PART NUMBER	LAMP SUFFIX	VOLTAGE	WATTS	AVERAGE LUMEN	TOTAL CANDLE POWER (CP)	LAMP #	BULB TYPE
High Intensity Incandescent, Wedge Base  T-5	570.0012-L	L5	6	5.4	68	5.4	939	T-5
	570.0026-L	L7	6	7.2	100	8	927	T-5
	570.0016-L	L9	6	9	150	12	908	T-5
	570.0025-L	L9	12	9	138	11	915	T-5
	570.0028-L	L12	12	12	150	12	912	T-5
	570.0029-L	L18	12	18	264	21	921	T-5
	570.0045-L	L9	24	9	113	9	EMS2209W	T-5
	570.0046-L	L18	24	18	240	19	EMS2218W	T-5
LAMP TYPE	**PART NUMBER**	**LAMP SUFFIX**	**VOLTAGE**	**WATTS**	**AVERAGE LUMEN**	**CENTER-BEAM CANDLE POWER (CBCP)**	**BEAM ANGLE (DEGREES)**	**BULB TYPE**
MR16 Halogen Lamps 	580.0072-L	M5	6	5.4	34	73	36	MR16
	580.0074-L	M6	6	6	40	130	24	MR16
	580.0079-L	M10	6	10	77	790	16	MR16
	580.0099-L	M10	12	10	86	200	36	MR16
	580.0080-L	M12	12	12	135	320	36	MR16
	580.0064-L	M20	12	20	270	525	36	MR16
	580.0075-L	MA20	12	20-A	245	600	36	MR16
	580.0068-L	MH20	12	20-H	417	950	36	MR16
	580.0083-L	M35	12	35	490	3300	24	MR16
	580.0076-L	M50	12	50	785	2800	24	MR16
	580.0089-L	MH50	12	50-H	1550	5700	24	MR16
	580.0070-L	M12	24	12	95	280	36	MR16
	580.0077-L	M20	24	20	240	740	24	MR16
	580.0094-L	MA20	24	20-A	195	890	24	MR16
	580.0084-L	M35	24	35	460	990	36	MR16
	580.0078-L	M50	24	50	875	3200	24	MR16
	580.0065-L	M20	120	20	100	240	36	MR16
	580.0066-L	M35	120	35	230	520	36	MR16
	580.0067-L	M50	120	50	460	1100	36	MR16
MR16 LED Lamps 	580.0097-L	LD1	6	4	130	600	24	MR16
	580.0093-L	LD7	12	4	170	440	30	MR16
	580.0104-L	LD9	12	5	340	900	24	MR16
	580.0106-L	LD10	12	6	540	1800	25	MR16
	580.0098-L	LD13	24	4	200	900	24	MR16
	580.0100-L	LD14	24	6	590	1939	24	MR16
	580.0095-L	LD15	120	4	200	900	24	MR16
LAMP TYPE	**PART NUMBER**	**LAMP SUFFIX**	**VOLTAGE**	**WATTS**	**AVERAGE LUMEN**	**TOTAL CANDLE POWER (CP)**	**LAMP #**	**BULB TYPE**
EXIT Signs, Hazardous Locations Incandescent Lamps	580.0086-L	6	6	15	210	17	JC6V-15W2KG4	Bi-Pin G4
	570.0071-L	12	12	25	220	18	13769	A19
	570.0118-L	24	24	25	220	18	24227-1	A19
	570.0136-L	120	120	25	215	17	97478	A19

ACCESSORIES & GENERAL INFORMATION



Accessories & General Information

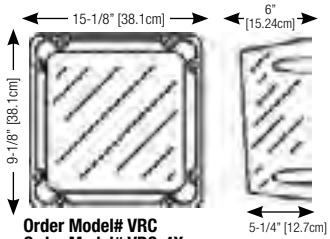
Unit Accessories

POLYCARBONATE SHIELDS

VRC SERIES

Application

- VRC = Vandal Resistant
- VRC-4X = NEMA-4X Vandal Resistant (including a gasket and breather vent)

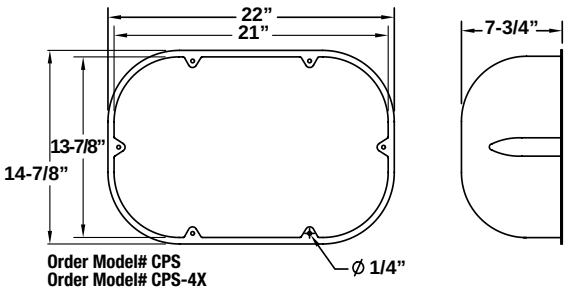


Order Model# VRC
Order Model# VRC-4X

CPS SERIES

Application

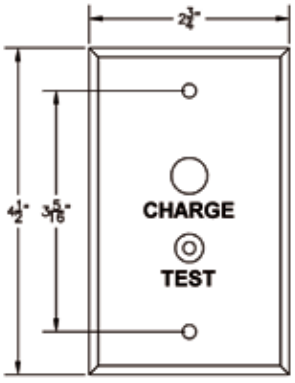
- CPS = Vandal Resistant
- CPS-4X = NEMA-4X Vandal Resistant (including a gasket and breather vent)



Order Model# CPS
Order Model# CPS-4X

REMOTE TEST SWITCH

Make testing your ceiling mounted equipment easier with the remote test switch. Compatible with 120 or 277VAC circuits, the remote test switch will interrupt the line voltage to your equipment by means of a momentary push button switch. AC on/Charge status indicator lamp assures that power is going to your emergency lighting.

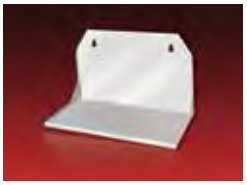


How To Order

Remote Test Switch (Chrome)	PSW
Remote Test Switch (Plastic)	PSW1

MOUNTING PLATFORMS

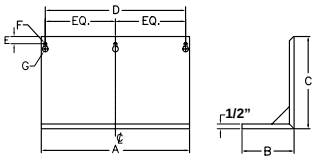
- 14 gauge steel
- Corrosion resistant undercoat
- Oven baked finish
- 1/2" retaining lip on three sides
- Keyhole slots for easy mounting



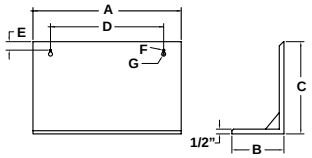
Model	Dimensions (inches)						
	a	b	c	d	e	f	g
MP-PQB (Mist)	17	7-3/4	12-1/4	16	3/4	5/16	5/8
MP-A (Gray)	17	7-3/4	12-1/4	16	3/4	5/16	5/8
MP-PQA (Mist)	16-3/8	5-3/4	10-1/4	12-1/2	7/8	3/16	7/16
MP12 (Mist White)	27-1/2	7-3/4	12-1/4	16	1-5/8	5/32	5/16

Dimensions are approximate and subject to change

MP-PQB
MP-A

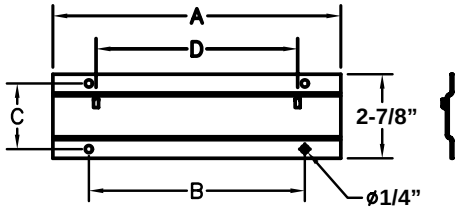


MP-PQA
MP12



MOUNTING BRACKETS

- 16 gauge steel
- Corrosion resistant undercoat
- Oven baked finish
- Supplied with rubber stand-offs for unit and machine screws to secure unit to bracket



Model	Dimensions (inches)			
	a	b	c	d
MB-A	10	7-3/4	2-3/16	7
MB-B	14-1/4	11-3/4	2-3/16	12-5/8

Remote Head Mounting Plates

Order Canopies and gang plates as separate items.

THERMOPLASTIC ROUND CANOPY

- Single, double or triple round
- Thermoplastic construction
- Mounting plates shipped with two hole plugs
- Mist white or black finish only
- Mount direct to 4" octagonal box

Dimensions:
5" diameter - slotted mounting holes
3 to 3-9/16" mounting center

Used with:
ELF2, ELF3, ELF623, ELF645 Series as standard canopy

Off-White - 230.1238-L
Off-White Hole Plug - 230.1204-L

Black - 230.1239-L
Black Hole Plug - 230.1205-L

ALUMINUM ROUND CANOPY

- Single or double round
- Aluminum construction
- Mist white or black finish
- Mount direct to 4" octagonal box

Dimensions:
5-1/4" diameter 3-7/16" mounting center

Used with:
Available optionally with ELF2, ELF3, ELF622 and ELF645 Series

Off-White Single - 430.0765-L

Off-White Double - 430.0766-L

RECTANGULAR GANG PLATE

- Single, double or triple rectangular
- Single, triple or 4-gang steel construction
- Chrome plated finish only
- Mount direct to standard outlet box

Dimensions:
Single - 2-3/4" X 4-1/2" (for 1 fixture)
3-gang - 6-7/16" X 4-1/2" (for 2 fixture)
4-gang - 8-3/8" X 4-1/2" (for 2 or 3 fixture)
3 5/16" mounting centers all types

Used with: ELF622 Series as standard canopy Available Optionally with ELF2, ELF3 and ELF645 Series

450.0129-L - No Square Hole
***450.1151-L - 7/16" Square Hole**
450.0194-L - 1/2" Square Hole

450.0397-L No Square Hole
***450.1152-L 7/16" Square Hole**
450.1153-L 1/2" Square Hole

450.0398-L - No Square Hole
***450.1154-L - 7/16" Square Hole**
450.1155-L - 1/2" Square Hole

WEATHERPROOF ROUND CANOPY

- Single or double round
- Die cast aluminum construction
- Gasketed weatherproof
- Mist white or black satin enamel finish
- Mount direct to 4" octagonal box

Dimensions:
4-1/8" diameter
3-9/16" mounting center

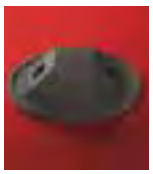
Used with:
ELF647 Series as standard canopy

Off-White Single
330.7583-L

Black Single
330.7577-L

Off-White Double
330.7584-L

Black Double
330.7578-L



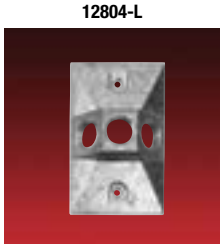
WEATHERPROOF GANG PLATE

- Single or double rectangular
- Die cast aluminum construction
- Gasketed weatherproof
- Silver gray enamel finish only
- Mount direct to standard outlet box

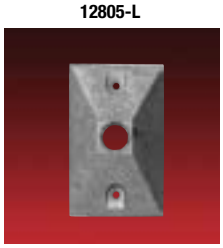
Dimensions:
4-5/8" X 2-7/8"
3-1/4" mounting center

Used with:
ELF647 Series as optional canopy

12804-L



12805-L



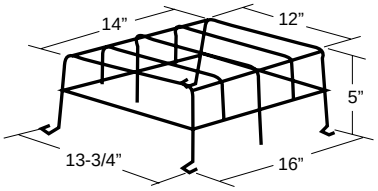
Wire Guards

CATALOG NUMBER WG1-L

APPLICATION

Exit Signs (Wall Mount)
GX, GXE Series (6" only)
XD, XDN Series
TX, TXE Series
UX4 Series, GRANDE™ Exit Series
QLX500, QLXN500 Series
XT Series

Battery Units
Grande™ Battery Unit (Wall Mount);
MC Series (ELF3, DR1130 Heads);



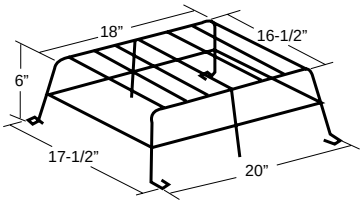
CATALOG NUMBER WG2-L

APPLICATION

Exit Signs
Grande™ (Combination Unit, Wall Mount)

Battery Units
MC Series (ELF 645 & ELF623 Heads);
PG & P12G Series;
PN & P12N Series (A Cabinet)

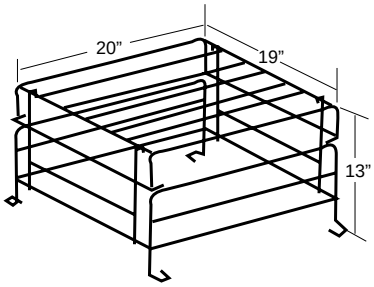
Remote Fixtures
DR 3130



CATALOG NUMBER WG3-L

APPLICATION

Battery Units
PN & P12N Series (B Cabinet);
PQ & P12Q Series;
S12E4 Series
FG Series

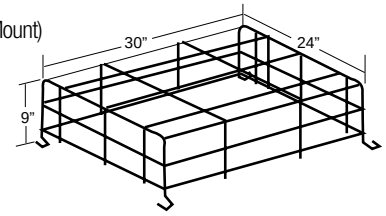


CATALOG NUMBER WG4-L

APPLICATION

Exit Signs
QLXN2SQ (Combination Unit, Wall Mount)

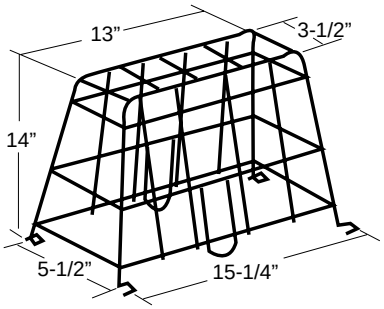
Battery Units
S12E5, S12E6 & S24E4 Series



CATALOG NUMBER WG5-L

APPLICATION

Exit Signs (Ceiling & End Mount)
GX, GXE Series (6" only)
XD, XDN Series
TX, TXE Series
UX4 Series,
GRANDE™ Exit Series
QLX500, QLXN500 Series
XT Series



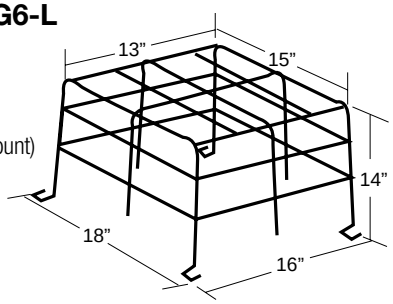
CATALOG NUMBER WG6-L

APPLICATION

Exit Signs
UX4 (Combination Unit Wall Mount);
QLXN2MRS (Combination Unit Wall Mount)

Battery Units
RD Series

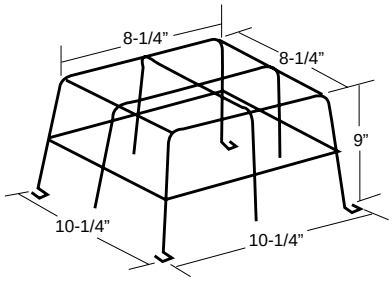
Remote Fixtures
ELF647C, ELF647DC



CATALOG NUMBER WG8-L

APPLICATION

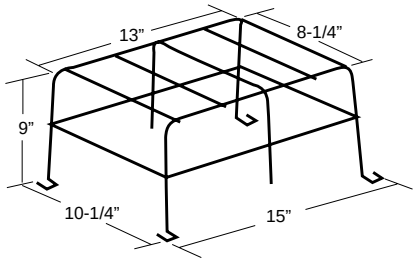
Remote Fixtures
DR1130, DR 2130;
ELF623, ELF623D
ELF2, ELF2D, ELF2T
ELF3, ELF3D, ELF3T
ELF648, ELF648D



CATALOG NUMBER WG9-L

APPLICATION

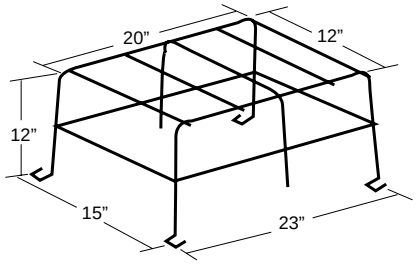
Remote Fixtures
ELF645, ELF645D, ELF645T;
ELF647, ELF647D, ELF647T



CATALOG NUMBER WG10-L

APPLICATION

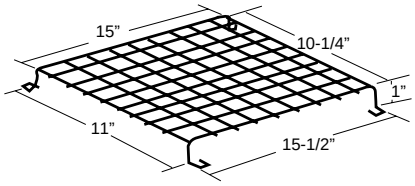
Battery Units
LCA-2 SQ Series;
LCA-2 MRS Series;



CATALOG NUMBER WG11-L

APPLICATION

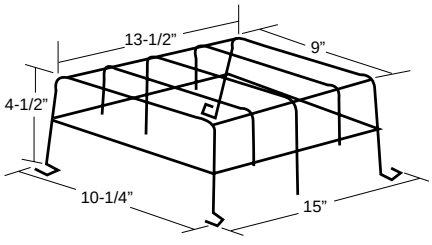
Exit Signs (Wall Mount)
Floor proximity Recessed Exit
TX, TXE Series



CATALOG NUMBER WG12-L

APPLICATION

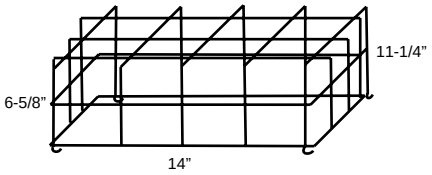
Exit Signs (Wall Mount)
XD, XDN Series
TX, TXE Series
UX4 Series,
GRANDE™ Exit Series
QLX500, QLXN500 Series
XT Series



CATALOG NUMBER WG13-L

APPLICATION

Exit Signs (Wall Mount)
GX, GXE Series (6" & 8");
XD, XDN Series;
XL Series;
TX, TXE Series;
UX4 Series,
GRANDE™ Exit Series;
QLX500, QLXN500 Series;
XT Series

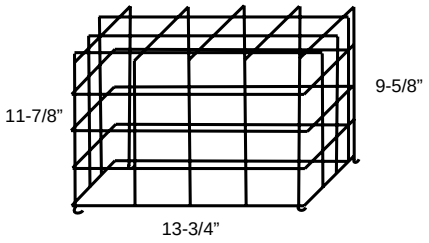


Battery Units
LCA-2MRS Series, LCA-2LD Series, LCA1250 Series

CATALOG NUMBER WG14-L

APPLICATION

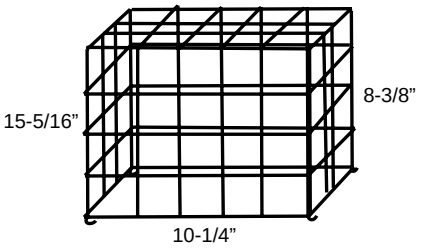
Exit Signs (Ceiling Mount)
GX, GXE Series (6" & 8");
XD, XDN Series;
TX, TXE Series;
UX4 Series,
GRANDE™ Exit Series;
QLX500, QLXN500 Series



CATALOG NUMBER WG15-L

APPLICATION

Exit Signs (Wall Mount)
GX, GXE Series (6" & 8")
XD, XDN Series
TX, TXE Series
UX4 Series,
GRANDE™ Exit Series
QLX500, QLXN500 Series



Wire Size Guide

DETERMINING WIRE SIZE

The following information is provided to assist in designing proper emergency lighting systems effectively and economically by using the smallest permissible wire size for load circuits. When remote lighting fixtures and/or Exit Signs are connected to emergency lighting units, circuit runs must be of sufficient size to maintain a proper operating voltage to all lamps. The National Electrical Code limits voltage to drop to a maximum of 5% of nominal. The table below gives the maximum length or wire run based on systems voltage, wire gauge and total wattage on the run. To determine the maximum length of a wire run not listed, divide the value of the load in watts into the constant listed at the bottom of each row. Example, the maximum wire run for #10 wire on a 12 volt system, with a 54 watt load, is 3397 ÷ 54 or 62 feet.

Conversely, to determine the maximum load on a run of known length, divide the length into the constant. Example, a 36 foot run of #12 wire on a 6 volt systems can be loaded to, 534 ÷ 36, or 14 watts; on #10 wire, 23 watts. .

Total watts on wire run	6 volt wire size				12 volt wire size					24 volt wire size			
	#12	#10	#8	#6	#12	#10	#8	#6	#4	#12	#10	#8	#6
6	89	141	225	357	356	566	900	1431	+	1425	+	+	+
8	66	106	168	268	267	424	675	1073	1707	1068	1698	+	+
9	59	94	150	238	237	377	600	954	1517	949	1509	+	+
10	53	84	135	214	213	339	540	859	1366	854	1358	+	+
12	44	70	112	178	178	283	450	715	1138	712	1132	1801	+
16	33	53	84	134	133	212	337	536	853	534	849	1350	+
18	29	47	75	119	118	188	300	477	758	474	754	1200	1909
24	22	35	56	89	89	141	225	357	569	356	566	900	1431
25	21	33	54	85	85	135	216	343	546	341	543	864	1374
27	19	31	50	79	79	125	200	318	505	316	503	800	1272
30	17	28	45	71	71	113	180	286	455	284	452	720	1145
36	14	23	37	59	59	94	150	238	379	237	377	600	954
42	12	20	32	51	50	80	128	204	325	203	323	514	818
45	11	18	30	47	47	75	120	190	303	189	301	480	763
48	11	17	28	44	44	70	112	178	284	178	283	450	715
50	10	16	27	42	42	67	108	171	273	170	271	432	687
75	7	11	18	28	28	45	72	114	182	113	181	288	458
100	5	8	13	21	21	33	54	85	136	85	135	216	343
150	-	5	9	14	14	22	36	57	91	56	90	144	229
200	-	-	6	10	10	16	27	42	68	42	67	108	171
250	-	-	5	8	8	13	21	34	54	34	54	86	137
300	-	-	-	7	7	11	18	28	45	28	45	72	114
400	-	-	-	5	5	8	13	21	34	21	33	54	85
500	-	-	-	-	-	6	10	17	27	17	27	43	68
Constant	**534**	**849**	**1350**	**2148**	**2137**	**3397**	**5403**	**8590**	**13660**	**8548**	**13588**	**21613**	**34363**
WIRING DISTANCE IN FEET (Maximum Voltage Drop 5%)													

Longer Wire Runs

The wiring distances give the maximum length of a battery circuit, assuming that the entire load is concentrated at the end of the circuit. If loads are uniformly spaced along the circuit path (equal watts, equal distances), the lengths in the table may be increased, based on number of fixtures on a given circuit, by means of the chart and formula below.

Number of Fixtures	2	3	4	5	6	N
Multiply By Feet	1.33	1.5	1.6	1.67	1.71	2n/(n+1)

For example, a 36 foot long, 6 volt circuit has (3) 9 watt heads spaced 12 feet apart. According to the wire run table, # 8 wire must be used (at 50 feet for a 5% voltage drop.) but, by multiplying the 31 feet for #10 wire by 1.5, a 46 1/2 foot wire run is acceptable, so #10 wire may be used and still meet the 5% voltage drop limitation.

Note: According to the National Electrical Code, Article 720-Y, the smallest permissible wire size for systems under 50 volts is the #12 wire gauge.

ARTICLE 700 – EMERGENCY SYSTEMS
I. GENERAL

700.1. Scope. The provisions of this article apply to the electrical safety of the installation, operation, and maintenance of emergency systems consisting of circuits and equipment intended to supply, distribute, and control electricity for illumination or power, or both, to required facilities when the normal electrical supply or system is interrupted.

(FPN No. 1): For further information regarding wiring and installation of emergency systems in health care facilities, see Article 517.
(FPN No. 2): For further information regarding performance and maintenance of emergency systems in health care facilities, see Standard for Health Care Facilities, NFPA 99-2012.
(FPN No. 3): Emergency systems are generally installed in places of assembly where artificial illumination is required for safe exiting and for panic control in buildings subject to occupancy by large numbers of persons, such as hotels, theaters, sports arenas, health care facilities, and similar institutions. Emergency systems may also provide power for such functions as ventilation where essential to maintain life, fire detection and alarm systems, elevators, fire pumps, public safety communications systems, industrial processes where current interruption would produce serious life safety or health hazards, and similar functions.
(FPN No. 4): For specification of locations where emergency lighting is considered essential to life safety, see *Life Safety Code*, NFPA 101-2012.
(FPN No. 5): For further information regarding performance of emergency and standby power systems, see *Standard for Emergency and Standby Power Systems*, NFPA 110-1999.

700.2. Definitions
Emergency Systems. Those systems legally required and classed as emergency by municipal, state, federal or other codes, or by any governmental agency having jurisdiction. These systems are intended to automatically supply illumination, power or both, to designated areas and equipment in the event of failure of the normal supply or in the event of accident to elements of a system intended to supply, distribute, and control power and illumination essential for safety to human life.
Informational Note: Emergency systems are generally installed in places of assembly where artificial illumination is required for safe exiting and for panic control in buildings subject to occupancy by large numbers of persons, such as hotels, theatres, sports, arenas, health care facilities, and similar institutions. Emergency systems may also provide power for such functions as ventilation where essential to maintain life, fire detection and alarm systems, elevators, fire pumps, public safety communications systems, industrial processes where current interruption would produce serious life safety or health hazards, and similar functions.
Relay automatic Load Control. A device used to set normally dimmed or normally-off switched emergency lighting equipment to full power illumination levels in the event of a loss of the normal supply by bypassing the dimming/switching controls, and to return the emergency lighting equipment to normal status when the device senses the normal supply has been restored.

Informational Note: See ANSI/UL 924, Emergency Lighting and Power Equipment, for the requirements covering automatic load control relays.

700.3.Tests and Maintenance.
(A) Conduct or Witness Test. The authority having jurisdiction shall conduct or witness a test of the complete system upon installation and periodically afterward.
(B) Tested Periodically. Systems shall be tested periodically on a schedule acceptable to the authority having jurisdiction to ensure the systems are maintained in proper operating condition.
(C) Battery Systems Maintenance. Where battery systems or unit equipment are involved, including batteries used for starting, control, or ignition in auxiliary engines, the authority having jurisdiction shall require periodic maintenance.
(D) Written Record. A written record shall be kept of such tests and maintenance.
(E) Testing Under Load. Means for testing all emergency lighting and power systems during maximum anticipated load conditions shall be provided.

For information on testing and maintenance of emergency power supply systems (EPSSs), see NFPA 110-2013, Standard for Emergency and Standby Power Systems.

700.4. Capacity.
(A) Capacity and Rating. An emergency system shall have adequate capacity and rating for all loads to be operated simultaneously. The emergency system equipment shall be suitable for the maximum available fault current at its terminals.
(B) Selective Load Pickup, Load Shedding, and Peak Load Shaving. The alternate power source shall be permitted to supply emergency, legally required standby, and optional standby system loads where the source has adequate capacity or where automatic selective load pickup and load shedding is provided as needed to ensure adequate power to (1) the emergency circuits; (2) the legally required standby circuits; and (3) the optional standby circuits, in that order of priority. The alternate power source shall be permitted to be used for peak load shaving, provided the above conditions are met.
Peak load shaving operation shall be permitted for satisfying the test requirement of Section 700.3(B), provided all other conditions of Section 700.3 are met. A portable or temporary alternate source shall be available whenever the emergency generator is out of service for major maintenance or repair.

700.5. Transfer Equipment.
(A) General. Transfer equipment, including automatic transfer switches, shall be automatic and identified for emergency use and approved by the authority having jurisdiction. Transfer equipment shall be designed and installed to prevent the inadvertent interconnection of normal and emergency sources of supply in any operation of the transfer equipment. Transfer equipment and electric power production systems installed to permit operation in parallel with the normal source shall meet the requirements of article 705.
(B) Bypass Isolation Switches. Means shall be permitted to bypass and isolate the transfer equipment. Where bypass isolation switches are used, inadvertent parallel operation shall be avoided.
(C) Automatic transfer switches shall be electrically operated and mechanically held. Automatic transfer switches, rated 1000 VAC and below, shall be listed for emergency system use.
(D) Use. Transfer equipment shall supply only emergency loads.

700-6. Signals. Audible and visual signal devices shall be provided, where practicable, for the following purposes described in 700.6(A) through (D).
(A) Derangement. To indicate derangement of the emergency source.
(B) Carrying Load. To indicate that the battery is carrying load.
(C) Not Functioning. To indicate that the battery charger is not functioning.
(D) Ground Fault. To indicate a ground fault in solidly grounded wye emergency systems of more than 150 volts to ground and circuit protective devices rated 1000 amperes or more. The sensor for the ground-fault signal devices shall be located at, or ahead of, the main system disconnecting means for the emergency source, and the maximum setting of the signal devices shall be for a ground-fault current of 1200 amperes. Instructions on the course of action to be taken in event of indicated ground fault shall be located at or near the sensor location.
Informational Note: For signals for generator sets, see NFPA 110-2013, Standard for Emergency and Standby Power Systems

700.7. Signs.
(A) Emergency Sources. A sign shall be placed at the service entrance equipment indicating type and location of on-site emergency power sources.
Exception: A sign shall not be required for individual unit equipment as specified in Section 700-12(F).
(B) Grounding. Where removal of a grounding or bonding connection in the normal power source equipment interrupts the grounding electrode conductor connection to the alternate power source(s) grounded conductor, a warning sign shall be installed at the normal power source equipment stating:

WARNING

SHOCK HAZARD EXISTS IF GROUNDING ELECTRODE CONDUCTOR OR BONDING JUMPER CONNECTION IN THIS EQUIPMENT IS REMOVED WHILE ALTERNATE SOURCE(S) IS ENERGIZED. The warning sign(s) or label(s) shall comply with 110.21(B).

700.8
Emergency Sources. A listed SPD shall be installed in or on all emergency systems switchboards and panelboards.

II. CIRCUIT WIRING

700-10. Wiring, Emergency System.
(A) identification. All boxes and enclosures (including transfer switches, generators, and power panels) for emergency circuits shall be permanently marked so they will be readily identified as a component of an emergency circuit or system.
(B) Wiring. Wiring of two or more emergency circuits supplied from the same source shall be permitted in the same raceway, cable, box, or cabinet. Wiring from an emergency source distribution overcurrent protection to emergency loads shall be kept entirely independent of all other wiring and equipment, unless otherwise permitted in 700.10(B) (1) through (5):
(1) Wiring from the normal power source located in transfer equipment enclosures.
(2) Wiring supplied from two sources in exit or emergency luminaires
(3) Wiring from two sources in a listed load control relay supplying exit or emergency luminaires, or in a common junction box, attached to exit or emergency luminaires
(4) Wiring within a common junction box attached to unit equipment, containing only the branch circuit supplying the unit equipment and the emergency circuit supplied by the unit equipment.
(5) Wiring from an emergency source to supply emergency and other loads in accordance with 700.10(B)(5)a, b, c,and d as follows:

a. Separate vertical switchgear sections or separate vertical switchboard sections, with or without a common bus, or individual disconnects mounted in separate enclosures shall be used to separate emergency loads from all other loads.

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b. The common bus of separate sections of the switchgear, separate sections of the switchboard, or the individual enclosures shall be permitted to be supplied by single or multiple feeders without overcurrent protection at the source.
Exception to (5)b: Overcurrent protection shall be permitted at the source or for the equipment, provided the overcurrent protection complies with the requirements of 700.28.
c. Emergency required and optional standby circuits shall not originate from the same vertical switchgear section, panel board enclosure, or individual disconnect enclosure as emergency circuits.
d. It shall be permissible to utilize single or multiple feeders to supply distribution equipment between an emergency source and the point where the emergency loads are separated from all other loads.

(C) Wiring Design and Location. Emergency wiring circuits shall be designed and located to minimize the hazards that might cause failure due to flooding, fire, icing, vandalism, and other adverse conditions.

(D) Fire Protection. Emergency systems shall meet the following additional requirements (D)(1) through (D)(3) in assembly occupancies for not less than 1000 persons or in buildings above 23 m (75 ft) in height.

(1) Feeder-circuit wiring shall meet one of the following conditions:
(1) Be installed in spaces or areas that are fully protected by an approved automatic fire suppression system.
(2) Be listed electrical circuit protective system with a minimum 2-hour fire rating Informational note: UL guide information for electrical circuit protective systems (FHIT) contains information on proper installation requirements to maintain the fire rating
(3) Be protected by a listed thermal barrier system for electrical system components with a minimum 2-hour fire rating.
(4) Be protected by a listed fire-rated assembly that has a minimum fire rating of 2 hours and contains only emergency wiring circuits
(5) Be encased in a minimum of 50 mm (2 in) of concrete

(2) Feeder-Circuit Equipment. Equipment for feeder circuits (transfer switches, transformers, panel boards) shall be either located in spaces fully protected by approved automatic fire suppression systems (including sprinklers and carbon dioxide systems) or in spaces with a 2-hour fire resistance rating.

(3) Generator Control Wiring. Control conductors installed between the transfer equipment and the emergency generator shall be kept entirely independent of all other wiring and shall meet the conditions of 700.10(D)(1)

III. SOURCES OF POWER

700.12. General Requirements. Current supply shall be such that, in the event of failure of the normal supply to, or within, the building or group of buildings concerned, emergency lighting, emergency power, or both will be available within the time required for the application but not to exceed 10 seconds. The supply system for emergency purposes, in addition to the normal services to the building and meeting the general requirements of this section, shall be one or more of the types of systems described in 700.12(A) through (D) below. Unit equipment in accordance with Section 700.12(E) shall satisfy the applicable requirements of this article.
In selecting an emergency source of power, consideration shall be given to the occupancy and the type of service to be rendered, whether of minimum duration, as for evacuation of a theater, or longer duration, as for supplying emergency power and lighting due to an indefinite period of current failure from trouble either inside or outside the building.
Equipment shall be designed and located to minimize the hazards that might cause complete failure due to flooding, fires, icing, and vandalism.
Equipment for sources of power as described in Sections 700.12(A) through (E) where located within assembly occupancies for greater than 1000 persons or in buildings above 23 m (75 ft) in height with any of the following occupancy classes: assembly, educational, residential, detention and correctional, business, and mercantile, shall be installed either in spaces fully protected by approved automatic fire suppression systems (sprinklers, carbon dioxide systems, and so forth), or in spaces with a 1-hour fire rating.

Informational note No. 1: For definition of *Occupancy Classification*, see Section 6.1of NFPA 101-2012, *Life Safety Code*.
Informational note No. 2: For further information, see ANSI/IEEE 493-2007, Recommended Practice for the Design of Reliable Industrial and Commercial Power Systems.

(A) Storage Battery. Storage batteries used as source of power for emergency systems shall be of suitable rating and capacity to supply and maintain the total load for a period of 1 1/2 hours minimum, without the voltage applied to the load falling below 87 1/2 percent of normal.
Batteries, whether of the acid or alkali type, shall be designed and constructed to meet the requirements of emergency service and shall be compatible with the charger for that particular installation.
For a sealed battery, the container shall not be required to be transparent. However, for the lead acid battery that requires water additions, transparent or translucent containers shall be furnished.
Automotive-type batteries shall not be used.
An automatic battery charging means shall be provided.

(B) Generator Set.
(1) Prime Mover-Driven. For a generator set driven by a prime mover acceptable to the authority having jurisdiction and sized in accordance with Section 700-4. Means shall be provided for automatically starting the prime mover on failure of the normal service and for automatic transfer and operation of all required electrical circuits. A time-delay feature permitting a 15-minute setting shall be provided to avoid retransfer in case of short-time reestablishment of the normal source.
(2) Internal Combustion Engines as Prime Movers. Where internal combustion engines are used as the prime mover an on-site fuel supply shall be provided with an on-premise fuel supply sufficient for not less than 2 hours full-demand operation of the system. Where power is needed for the operation of the fuel transfer pumps to deliver fuel to a generator set dry tank, this pump shall be connected to the emergency power system.
(3) Dual Supplies. Prime movers shall not be solely dependent upon a public utility gas system for their fuel supply or municipal water supply for their cooling systems. Means shall be provided for automatically transferring from one fuel supply to another where dual fuel supplies are used.
Exception: Where acceptable to the authority having jurisdiction, the use of other than on-site fuels shall be permitted where there is a low probability of a simultaneous failure of both the off-site fuel delivery system and power from the outside electrical utility company.
(4) Where a storage battery is used for control or signal power, or as the means of starting the prime mover, it shall be suitable for the purpose and shall be equipped with an automatic charging means independent of the generator set. Where the battery charger is required for the operation of the generator set, it shall be connected to the emergency system. Where power is required for the operation of dampers used to ventilate the generator set, the dampers shall be connected to the emergency system.
(5) Auxiliary Power Supply. Generator sets that require more than 10 seconds to develop power shall be permitted is an auxiliary power supply energizes the emergency system until the generator can pick up the load.
(6) Outdoor Generator Sets. Where an outdoor housed generator set is equipped with a readily accessible disconnecting means in accordance with 445.18, and the disconnecting means is located within sight of the building or structure supplied, an additional disconnecting means shall not be required where ungrounded conductors serve or pass through the building or structure. Where the generator supply conductors terminate at a disconnecting means in or on a building or structure, the disconnecting means shall meet the requirements of 225.36.

Exception: For installations under single management where conditions of maintenance and supervision ensure that only qualified persons will monitor and service the installation and where documented safe switching procedures are established and maintained for disconnection, the generator set disconnecting means shall not be required to be located within sight of the building of structure served.

(C) Uninterruptible Power Supplies. Uninterruptible power supplies used to provide power for emergency systems shall comply with the applicable provisions of Sections 700-12(A) and (B).
(D) Separate Service. Where acceptable to the authority having jurisdiction as suitable for use as an emergency source of power, an additional service shall be permitted. This service shall be in accordance with the applicable provisions of Article 230 and following additional requirements.
(1) Separate overhead service conductors, service drops, underground service conductors, or service laterals shall be installed.
(2) The service conductors for the separate service shall be installed sufficiently remote electrically and physically from any other service conductors to minimize the possibility of simultaneous interruption of supply.

(E) Fuel Cell System. Fuel Cell Systems used as a source of power for emergency systems shall be of suitable rating and capacity to supply and maintain the total load for not less than 2 hours of full demand operation.

(F) Unit Equipment

(1) Components of Unit Equipment. Individual unit equipment for emergency illumination shall consist of the following:

(1) A rechargeable battery
(2) A battery charging means
(3) Provisions for one or more lamps mounted on the equipment, or shall be permitted to have terminals for remote lamps, or both and
(4) A relaying device arranged to energize the lamps automatically upon failure of the supply to the unit equipment.

(2) Installation of Unit Equipment. Unit equipment shall be installed in accordance with 700.12(F)(2)(1) through (6).

(1) The batteries shall be of suitable rating and capacity to supply and maintain at not less than 87-1/2 percent of the nominal battery voltage for the total lamp load associated with the unit for a period of at least 1-1/2 hours, or the unit equipment shall supply and maintain not less than 60 percent of the initial emergency illumination for a period of at least 1-1/2 hours. Storage batteries, whether of the acid or alkali type, shall be designed and constructed to meet the requirements of emergency service.
(2) Unit equipment shall be permanently fixed in place (i.e., not portable) and shall have all wiring to each unit installed in accordance with the requirements of any of the wiring methods in Chapter 3. Flexible cord and plug connection shall be permitted, provided that the cord does not exceed 3 ft (900 mm) in length.
(3) The branch circuit feeding the unit equipment shall be the same branch circuit as that serving the normal lighting in the area and connected ahead of any local switches.

Exception : In a separate and uninterrupted area supplied by a minimum of three normal lighting circuits, a separate branch circuit for unit equipment shall be permitted if it originates from the same panelboard as that of the normal lighting circuits and is provided with a lock-on feature.

(4) The branch circuit that feeds unit equipment shall be clearly identified at the distribution panel.
(5) Emergency luminaire's (illumination fixtures) that obtain power from a unit equipment and are not part of the unit equipment shall be wired to the unit equipment as required by Section 700-10 and by one of the wiring methods of Chapter 3.
(6) Remote heads providing lighting for the exterior of an exit door shall be permitted to be supplied by the unit equipment serving the area immediately inside the exit door

IV. Emergency System Circuits for Lighting and Power

700.15. Loads on Emergency Branch Circuits. No appliances and no lamps, other than those specified as required for emergency use, shall be supplied by emergency lighting circuits.

700.16. Emergency illumination. Emergency illumination shall include all required means of egress lighting, illuminated exit signs, and all other lights specified as necessary to provide required illumination.

Emergency lighting systems shall be designed and installed so that the failure of any individual lighting element, such as the burning out of a light bulb, cannot leave in total darkness any space that requires emergency illumination.

Where high-intensity discharge lighting such as high- and low-pressure sodium mercury vapor, and metal halide is used as the sole source of normal illumination, the emergency lighting system shall be required to operate until normal illumination has been restored.

Where an emergency system is installed, emergency illumination shall be provided in the area of the disconnecting means required by 225.31 and 230.70, as applicable, where the disconnecting means are installed indoors.

Exception: Where alterative means that ensure the emergency lighting illumination level is maintained shall be permitted.

700.17. Branch Circuits for Emergency Lighting. Branch circuits that supply emergency lighting shall be installed to provide service from a source complying with Section 700-12 when the normal supply for lighting is interrupted. Such installations shall provide either one of the following:

(1) An emergency lighting supply, independent of the normal lighting supply, with provisions for automatically transferring the emergency lights upon the event of failure of the normal lighting branch circuit
(2) Two or more branch circuits supplied from separate and complete systems with independent power sources. One of the two power sources and systems shall be part of the emergency system and the other shall be permitted to be part of the normal power source and system. Each system shall provide sufficient power for emergency lighting purposes.

Unless both systems are used for regular lighting purposes and are both kept lighted, means shall be provided for automatically energizing either system upon failure of the other. Either or both systems shall be permitted to be a part of the general lighting of the protected occupancy if circuits supplying lights for emergency illumination arc installed in accordance with other sections of this article.

700.18. Circuits for Emergency Power. For branch circuits that supply equipment classed as emergency, there shall be an emergency supply source to which the load will be transferred automatically upon the failure of the normal supply.

700.19. Multiwire Branch Circuits. The branch circuit serving emergency lighting and power circuits shall not be part of a multiwire branch circuit.

V. CONTROL—EMERGENCY LIGHTING CIRCUITS

700.20. Switch Requirements. The switch or switches installed in emergency lighting circuits shall be arranged so that only authorized persons will have control of emergency lighting.

Exception No. 1: Where two or more single-throw switches are connected in parallel to control a single circuit, at least one of these switches shall be accessible only to authorized persons.

Exception No. 2: Additional switches that act only to put emergency lights into operation but not disconnect them shall be permissible.

Switches connected in series or 3- and 4-way switches shall not be used.

700.21. Switch Location. All manual switches for controlling emergency circuits shall be in locations convenient to authorized persons responsible for their actuation. In facilities covered by Articles 518 and 520, a switch for controlling emergency lighting systems shall be located in the lobby or at a place conveniently accessible thereto.

In no case shall a control switch for emergency lighting be placed in a motion-picture projection booth or on a stage or platform.

Exception: Where multiple switches are provided, one such switch shall be permitted in such locations where arranged so that it can energize the circuit only, but cannot deenergize the circuit.

700.22. Exterior Lights. Those lights on the exterior of a building that are not required for illumination when there is sufficient daylight shall be permitted to be controlled by an automatic light-actuated device.

700.23 Dimmer and Relay Systems. A dimmer or relay system containing more than one dimmer or relay and listed for use in emergency systems shall be permitted to be used as a control device for energizing emergency lighting circuits. Upon failure of normal power, the dimmer or relay system shall be permitted to selectively energize only those branch circuits required to provide minimum emergency illumination. All branch circuits supplied by the dimmer or relay system cabinet shall comply with the wiring methods of Article 700.

700.24 Directly Controlled Luminaires. Where emergency illumination is provided by one or more directly controlled luminaires that respond to an external control input to bypass normal control upon loss of normal power, such luminaires and external bypass controls shall be individually listed for use in emergency systems.

700.25 Automatic Load Control Relay. If an emergency lighting load is automatically energized upon loss of the normal supply, a listed automatic load control relay shall be permitted to energize the load. The load control relay shall not be used as transfer equipment.

VI. OVERCURRENT PROTECTION

700-26. Accessibility. The branch-circuit overcurrent devices in emergency circuits shall be accessible to authorized persons only..

700-27. Ground-Fault Protection of Equipment. The alternate source for emergency systems shall not be required to have ground-fault protection of equipment with automatic disconnecting means. Ground-fault indication of the emergency source shall be provided in accordance with 700.6(D) if ground-fault protection of equipment with automatic disconnecting means is not provided. *Exception: Selective coordination shall not be required between two overcurrent devices located in series if no loads are connected in parallel with the downstream device.*

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7.8 ILLUMINATION OF MEANS OF EGRESS.

7.8.1 General.

7.8.1.1* Illumination of means of egress shall be provided in accordance with Section 7.8 for every building and structure where required in Chapters 11 through 43. For the purposes of this requirement, exit access shall include only designated stairs, aisles, corridors, ramps, escalators, and passageways leading to an exit. For the purposes of this requirement, exit discharge shall include only designated stairs, aisles, corridors, ramps, escalators, walkways, and exit passageways leading to a public way.

7.8.1.2 Illumination of means of egress shall be continuous during the time that the conditions of occupancy require that the means of egress be available for use, unless otherwise provided in 7.8.1.2.2.

7.8.1.2.1 Artificial lighting shall be employed at such locations and for such periods of time as are necessary to maintain the illumination to the minimum criteria values herein specified.

7.8.1.2.2 Unless prohibited by Chapters 11 through 43, automatic lighting control devices shall be permitted to temporarily turn off the illumination within the means of egress, provided that each lighting control device complies with all of the following:

(1) In new installations, the lighting control device is listed.
(2) The lighting control device is equipped to automatically energize the controlled lights upon loss of normal power and is evaluated for this purpose.
(3) Illumination timers are provided and are set for a minimum 15-minute duration.
(4) The lighting control device is activated by any occupant movement in the area served by the lighting units.
(5) In new installations, the lighting control device is activated by activation of the building fire alarm system, if provided.
(6) The lighting control device does not turn off any lights relied upon for activation of photoluminescent exit signs or path markers.
(7) The lighting control device does not turn off any battery equipped emergency luminaires, unit equipment, or exit signs.

7.8.1.2.3* Energy-saving sensors, switches, timers, or controllers shall be approved and shall not compromise the continuity of illumination of the means of egress required by 7.8.1.2.

7.8.1.3* The floors and other walking surfaces within an exit and within the portions of the exit access and exit discharge designated in 7.8.1.1 shall be illuminated as follows:
(1) During conditions of stair use, the minimum illumination for new stairs shall be at least 10 ft-candle (108 lux), measured at the walking surfaces.
(2) The minimum illumination for floors and other walking surfaces, other than new stairs during conditions of stair use, shall be to values of at least 1 ft-candle (10.8 lux), measured at the floor.
(3) In assembly occupancies, the illumination of the walking surfaces of exit access shall be at least 0.2 ft-candle (2.2 lux) during periods of performances or projections involving directed light.
(4) *The minimum illumination requirements shall not apply where operations or processes require low lighting levels.

7.8.1.4* Required illumination shall be arranged so that the failure of any single lighting unit does not result in an illumination level of less than 0.2 ft-candle (2.2 lux) in any designated area.

7.8.1.5 The equipment or units installed to meet the requirements of Section 7.10 also shall be permitted to serve the function of illumination of means of egress, provided that all requirements of Section 7.8 for such illumination are met.

7.8.2 Sources of Illumination.

7.8.2.1* Illumination of means of egress shall be from a source considered reliable by the authority having jurisdiction.

7.8.2.2 Battery-operated electric lights and other types of portable lamps or lanterns shall not be used for primary illumination of means of egress. Battery-operated electric lights shall be permitted to be used as an emergency source to the extent permitted under Section 7.9.

7.9 EMERGENCY LIGHTING.

7.9.1 General.

7.9.1.1* Emergency lighting facilities for means of egress shall be provided in accordance with Section 7.9 for the following:
(1) Buildings or structures where required in Chapters 11 through 43
(2) Underground and limited access structures as addressed in Section 11.7
(3) High-rise buildings as required by other sections of this Code
(4) Doors equipped with delayed-egress locks
(5) Stair shafts and vestibules of smokeproof enclosures, for which the following also apply:
  (a) The stair shaft and vestibule shall be permitted to include a standby generator that is installed for the smokeproof enclosure mechanical ventilation equipment.
  (b) The standby generator shall be permitted to be used for the stair shaft and vestibule emergency lighting power supply.
(6) New access-controlled egress doors in accordance with 7.2.1.6.2.

7.9.1.2 For the purposes of 7.9.1.1, exit access shall include only designated stairs, aisles, corridors, ramps, escalators, and passageways leading to an exit. For the purposes of 7.9.1.1, exit discharge shall include only designated stairs, ramps, aisles, walkways, and escalators leading to a public way.

7.9.1.3 Where maintenance of illumination depends on changing from one energy source to another, a delay of not more than 10 seconds shall be permitted.

7.9.2 Performance of System.

7.9.2.1 Emergency illumination shall be provided for a minimum of 1-1/2 hours in the event of failure of normal lighting.

7.9.2.1.1 Emergencylighting facilities shall be arranged to provide initial illumination that is not less than an average of 1 ft-candle (10.8 lux) and, at any point, not less than 0.1 ft-candle (1.1 lux), measured along the path of egress at floor level.

7.9.2.1.2 Illumination levels shall be permitted to decline to not less than an average of 0.6 ft-candle (6.5 lux) and, at any point, not less than 0.06 ft-candle (0.65 lux) at the end of 1-1/2 hours.

7.9.2.1.3 The maximum-to-minimum illumination shall not exceed a ratio of 40 to 1.

7.9.2.3 Emergency lighting facilities shall be arranged to provide initial illumination that is not less than an average of 1 ft-candle (10.8 lux) and, at any point, not less than 0.1 ft-candle (1.1 lux), measured along the path of egress at floor level. Illumination levels shall be permitted to decline to not less than an average of 0.6 ft-candle (6.5 lux) and, at any point, not less than 0.06 ft-candle (0.65 lux) at the end of 11⁄2 hours. A maximum-to-minimum illumination uniformity ratio of 40 to 1 shall not be exceeded.

7.9.2.2 New emergency power systems for emergency lighting shall be at least Type 10, Class 1.5, Level 1, in accordance with NFPA110, Standard for Emergency and Standby Power Systems..

7.9.2.3* TThe emergency lighting system shall be arranged to provide the required illumination automatically in the event of any interruption of normal lighting due to any of the following:
(1) Failure of a public utility or other outside electrical power supply
(2) Opening of a circuit breaker or fuse
(3) Manual act(s), including accidental opening of a switch controlling normal lighting facilities

7.9.2.4 Emergency generators providing power to emergency lighting systems shall be installed, tested, and maintained in accordance with NFPA 110, *Standard for Emergency and Standby Power Systems*. Stored electrical energy systems, where required in this Code, other than battery systems for emergency luminaires in accordance with 7.9.2.5, shall be installed and tested in accordance with NFPA 111, *Standard on Stored Electrical Energy Emergency and Standby Power Systems.*

7.9.2.5 Unit equipment and battery systems for emergency luminaires shall be listed to ANSI/UL 924, *Standard for Emergency Lighting and Power Equipment.*

7.9.2.6* Existing battery-operated emergency lights shall use only reliable types of rechargeable batteries provided with suitable facilities for maintaining them in properly charged condition. Batteries used in such lights or units shall be approved for their intended use and shall comply with NFPA 70, *National Electrical Code.*

7.9.2.7 The emergency lighting system shall be either continuously in operation or shall be capable of repeated automatic operation without manual intervention.

7.9.3 Periodic Testing of Emergency Lighting Equipment.

7.9.3.1 Required emergency lighting systems shall be tested in accordance with one of the three options offered by 7.9.3.1.1, 7.9.3.1.2, or 7.9.3.1.3.

7.9.3.1.1 Testing of required emergency lighting systems shall be permitted to be conducted as follows:

(1) Functional testing shall be conducted monthly, with a minimum of 3 weeks and a maximum of 5 weeks between tests, for not less than 30 seconds, except as otherwise permitted by 7.9.3.1.1(2).
(2)* The test interval shall be permitted to be extended beyond 30 days with the approval of the authority having jurisdiction.
(3) Functional testing shall be conducted annually for a minimum of 1-1⁄2 hours if the emergency lighting system is battery powered.
(4) The emergency lighting equipment shall be fully operational for the duration of the tests required by 7.9.3.1.1(1) and (3).
(5) Written records of visual inspections and tests shall be kept by the owner for inspection by the authority having jurisdiction.

7.9.3.1.2 Testing of required emergency lighting systems shall be permitted to be conducted as follows:

(1) Self-testing/self-diagnostic battery-operated emergency lighting equipment shall be provided.
(2) Not less than once every 30 days, self-testing/self-diagnostic battery-operated emergency lighting equipment shall automatically perform a test with a duration of a minimum of 30 seconds and a diagnostic routine.
(3) Self-testing/self-diagnostic battery-operated emergency lighting equipment shall indicate failures by a status indicator.
(4) A visual inspection shall be performed at intervals not exceeding 30 days.
(5) Functional testing shall be conducted annually for a minimum of 1⁄2 hours.
(6) Self-testing/self-diagnostic battery-operated emergency lighting equipment shall be fully operational for the duration of the 1⁄2-hour test.
(7) Written records of visual inspections and tests shall be kept by the owner for inspection by the authority having jurisdiction.

7.9.3.1.3 Testing of required emergency lighting systems shall be permitted to be conducted as follows:

(1) Computer-based, self-testing/self-diagnostic battery-operated emergency lighting equipment shall be provided.
(2) Not less than once every 30 days, emergency lighting equipment shall automatically perform a test with a duration of a minimum of 30 seconds and a diagnostic routine.
(3) The emergency lighting equipment shall automatically perform annually a test for a minimum of 1⁄2 hours.
(4) The emergency lighting equipment shall be fully operational for the duration of the tests required by 7.9.3.1.3(2) and (3).
(5) The computer-based system shall be capable of providing a report of the history of tests and failures at all times.

7.10 MARKING OF MEANS OF EGRESS.

7.10.1 General.

7.10.1.1 Where Required. Means of egress shall be marked in accordance with Section 7.10 where required in Chapters 11 through 43.

7.10.1.2 Exits.

7.10.1.2.1* Exits, other than main exterior exit doors that obviously and clearly are identifiable as exits, shall be marked by an approved sign that is readily visible from any direction of exit access.

7.10.1.2.2* Horizontal components of the egress path within an exit enclosure shall be marked by approved exit or directional Exit Signs where the continuation of the egress path is not obvious.

7.10.1.3 Exit Door Tactile Signage. Tactile signage shall be provided to meet all of the following criteria, unless otherwise provided in 7.10.1.4:

(1) Tactile signage shall be located at each exit door requiring an Exit Sign.
(2) Tactile signage shall read as follows: EXIT.
(3) Tactile signage shall comply with ICC/ANSI A117.1, American National Standard for Accessible and Usable Buildings and Facilities.

7.10.1.4 Existing Exemption. The requirements of 7.10.1.3 shall not apply to existing buildings, provided that the occupancy classification does not change.

7.10.1.5 Exit Access.

7.10.1.5.1 Access to exits shall be marked by approved, readily visible signs in all cases where the exit or way to reach the exit is not readily apparent to the occupants.

7.10.1.5.2* New sign placement shall be such that no point in an exit access corridor is in excess of the rated viewing distance or 100 ft (30 m), whichever is less, from the nearest sign.

7.10.1.6* Floor Proximity Exit Signs. Where floor proximity Exit Signs are required in Chapters 11 through 43, such signs shall comply with 7.10.3, 7.10.4, 7.10.5, and 7.10.6 for externally illuminated signs and 7.10.7 for internally illuminated signs. Such signs shall be located near the floor level in addition to those signs required for doors or corridors. The bottom of the sign shall be not less than 6 in. (150 mm), but not more than 18 in.(455 mm), above the floor. For exit doors, the sign shall be mounted on the door or adjacent to the door, with the nearest edge of the sign within 4 in. (100 mm) of the door frame.

7.10.1.7* Floor Proximity Egress Path Marking. Where floor proximity egress path marking is required in Chapters 11 through 43, an approved floor proximity egress path marking system that is internally illuminated shall be installed within 18 in. (455 mm) of the floor. Floor proximity egress path marking systems shall be listed in accordance with ANSI/UL 1994, Standard for Luminous Egress Path Marking Systems. The system shall provide a visible delineation of the path of travel along the designated exit access and shall be essentially continuous, except as interrupted by doorways, hallways, corridors, or other such architectural features. The system shall operate continuously or at any time the building fire alarm system is activated. The activation, duration, and continuity of operation of the system shall be in accordance with 7.9.2. The system shall be maintained in accordance with the product manufacturing listing.

Life Safety Code

7.10.1.8* Visibility. Every sign required in Section 7.10 shall be located and of such size, distinctive color, and design that it is readily visible and shall provide contrast with decorations, interior finish, or other signs. No decorations, furnishings, or equipment that impairs visibility of a sign shall be permitted. No brightly illuminated sign (for other than exit purposes), display, or object in or near the line of vision of the required Exit Sign that could detract attention from the Exit Sign shall be permitted.

7.10.1.9 Mounting Location. The bottom of new egress markings shall be located at a vertical distance of not more than 6 ft 8 in. (2030 mm) above the top edge of the egress opening intended for designation by that marking. Egress markings shall be located at a horizontal distance of not more than the required width of the egress opening, as measured from the edge of the egress opening intended for designation by that marking to the nearest edge of the marking.

7.10.2 Directional Signs.

7.10.2.1* A sign complying with 7.10.3, with a directional indicator showing the direction of travel, shall be placed in every location where the direction of travel to reach the nearest exit is not apparent.

7.10.2.2 Directional Exit Signs shall be provided within horizontal components of the egress path within exit enclosures as required by 7.10.1.2.2.

7.10.3* Sign Legend.

7.10.3.1 Signs required by 7.10.1 and 7.10.2 shall read as follows in plainly legible letters, or other appropriate wording shall be used:

EXIT

7.10.3.2* Where approved by the authority having jurisdiction, pictograms in compliance with NFPA 170, Standard for *Fire Safety and Emergency Symbols,* shall be permitted.

7.10.4* Power Source. Where emergency lighting facilities are required by the applicable provisions of Chapters 11 through 43 for individual occupancies, the signs, other than approved self-luminous signs and listed photoluminescent signs in accordance with 7.10.7.2, shall be illuminated by the emergency lighting facilities. The level of illumination of the signs shall be in accordance with 7.10.6.3 or 7.10.7 for the required emergency lighting duration as specified in 7.9.2.1. However, the level of illumination shall be permitted to decline to 60 percent at the end of the emergency lighting duration.

7.10.5 Illumination of Signs.

7.10.5.1* General. Every sign required by 7.10.1.2, 7.10.1.5, or 7.10.8.1, other than where operations or processes require low lighting levels, shall be suitably illuminated by a reliable light source. Externally and internally illuminated signs shall be legible in both the normal and emergency lighting mode.

7.10.5.2* Continuous Illumination.

7.10.5.2.1 Every sign required to be illuminated by 7.10.6.3, 7.10.7, and 7.10.8.1 shall be continuously illuminated as required under the provisions of Section 7.8, unless otherwise provided in 7.10.5.2.2.

7.10.5.2.2* Illumination for signs shall be permitted to flash on and off upon activation of the fire alarm system.

7.10.6 Externally Illuminated Signs.

7.10.6.1* Size of Signs.

7.10.6.1.1 Externally illuminated signs required by 7.10.1 and 7.10.2, other than approved existing signs, unless otherwise provided in 7.10.6.1.2, shall read EXIT or shall use other appropriate wording in plainly legible letters sized as follows:

(1) For new signs, the letters shall be not less than 6 in. (150 mm) high, with the principal strokes of letters not less than 3⁄4 in. (19 mm) wide.
(2) For existing signs, the required wording shall be permitted to be in plainly legible letters not less than 4 in. (100 mm) high.
(3) The word EXIT shall be in letters of a width not less than 2 in. (51 mm), except the letter I, and the minimum spacing between letters shall be not less than 3/8 in. (9.5 mm).
(4) Sign legend elements larger than the minimum established in 7.10.6.1.1(1) through (3) shall use letter widths, strokes, and spacing in proportion to their height.

7.10.6.1.2 The requirements of 7.10.6.1.1 shall not apply to marking required by 7.10.1.3 and 7.10.1.7.

7.10.6.2* Size and Location of Directional Indicator.

7.10.6.2.1 Directional indicators, unless otherwise provided in 7.10.6.2.2, shall comply with all of the following:

(1) The directional indicator shall be located outside of the EXIT legend, not less than 3⁄8 in. (9.5 mm) from any letter.
(2) The directional indicator shall be of a chevron type, as shown in Figure 7.10.6.2.1.
(3) The directional indicator shall be identifiable as a directional indicator at a distance of 40 ft (12 m).
(4) A directional indicator larger than the minimum established for compliance with 7.10.6.2.1(3) shall be proportionately increased in height, width, and stroke.
(5) The directional indicator shall be located at the end of the sign for the direction indicated.

7.10.6.2.1 Chevron Type Indicator.

7.10.6.2.2 The requirements of 7.10.6.2.1 shall not apply to approved existing signs.

7.10.6.3* Level of Illumination. Externally illuminated signs shall be illuminated by not less than 5 ft-candles (54 lux) at the illuminated surface and shall have a contrast ratio of not less than 0.5.

7.10.7 Internally Illuminated Signs.

7.10.7.1 Listing. Internally illuminated signs shall be listed in accordance with ANSI/UL 924, Standard for Emergency Lighting and Power Equipment, unless they meet one of the following criteria:

(1) They are approved existing signs.
(2) They are existing signs having the required wording in legible letters not less than 4 in. (100 mm) high.
(3) They are signs that are in accordance with 7.10.1.3 and 7.10.1.6.

7.10.7.2* Photoluminescent Signs. The face of a photoluminescent sign shall be continually illuminated while the building is occupied. The illumination levels on the face of the photoluminescent sign shall be in accordance with its listing. The charging illumination shall be a reliable light source, as determined by the authority having jurisdiction. The charging light source, shall be of a type specified in the product markings.

7.10.8 Special Signs.

7.10.8.1 Sign Illumination.

7.10.8.1.1 Where required by other provisions of this Code, special signs shall be illuminated in accordance with 7.10.5, 7.10.6.3, and 7.10.7.

7.10.8.1.2 Where emergency lighting facilities are required by the applicable provisions of Chapters 11 through 43, the required illumination of special signs shall additionally be provided under emergency lighting conditions.

7.10.8.2 Characters. Special signs, where required by other provisions of this Code, shall comply with the visual character requirements of ICC/ANSI A117.1, American National Standard for Accessible and Usable Buildings and Facilities.

7.10.8.3* No Exit.

7.10.8.3.1 Any door, passage, or stairway that is neither an exit nor a way of exit access and that is located or arranged so that it is likely to be mistaken for an exit shall be identified by a sign that reads as follows:

NO
EXIT

7.10.8.3.2 The NO EXIT sign shall have the word NO in letters 2 in. (51 mm) high, with a stroke width of 3⁄8 in. (9.5 mm), and the word EXIT in letters 1 in. (25 mm) high, with the word EXIT below the word NO, unless such sign is an approved existing sign.

7.10.8.4 Elevator Signs. Elevators that are a part of a means of egress (see 7.2.13.1) shall have both of the following signs with a minimum letter height of 5⁄8 in. (16 mm) posted in every elevator lobby:

(1) *Signs that indicate that the elevator can be used for egress, including any restrictions on use
(2) *Signs that indicate the operational status of elevators

7.10.8.5* Evacuation Diagram. Where a posted floor evacuation diagram is required in Chapters 11 through 43, floor evacuation diagrams reflecting the actual floor arrangement and exit locations shall be posted and oriented in a location and manner acceptable to the authority having jurisdiction.

7.10.9 Testing and Maintenance.

7.10.9.1 Inspection. Exit Signs shall be visually inspected for operation of the illumination sources at intervals not to exceed 30 days or shall be periodically monitored in accordance with 7.9.3.1.3.

7.10.9.2 Testing. Exit Signs connected to, or provided with, a battery-operated emergency illumination source, where required in 7.10.4, shall be tested and maintained in accordance with 7.9.3.

NFPA 101® Life Safety Code®
2015 Edition

Limited Warranty

1.0 LIGHTALARMS® 6, 12 and 24 volt Emergency Lighting Unit Equipment (excluding lamps and fuses) are fully warranted to be free of defects in material and workmanship under normal use for a period of three years from date of installation (see Paragraph 2.0).

1.1 LIGHTALARMS® 6, 12 and 24 volt Unit Equipment Batteries are warranted as follows (Warrant below includes the 3-year full warranty on entire unit as called out in Paragraph 1.0).

1.2 LIGHTALARMS® 6, 12 and 24 volt Emergency Lighting Unit Equipment (excluding lamps, and fuses) is fully warranted to be free of defects in material and workmanship under normal use for a period of one year from date of installation (see Paragraph 2.0).

BATTERY TYPE	LIFE EXPECTANCY	SHELF LIFE*	FULL WARRANTY	PRO RATA WARRANTY
Sealed Lead-Calcium	8 years	6 months	3 years	3 years
Sealed Nickel-Cadmium	10 years	1 year	5 years	5 years
Nickel-Metal Hydride	10 years	1 year	5 years	5 years

*** MAXIMUM STORAGE LIFE. MUST BE RECHARGED IF NOT PLACED IN SERVICE OR BATTERY WARRANTY VOID**

2.0 The full warranty period begins on the date of installation or 90 days from date of shipment, whichever date is earlier.

2.1 Should a defect appear in the equipment or batteries listed in Paragraphs 1.0, 1.1 or 1.2 above within the specified full warranty period, Lightalarms® will repair or replace equipment without charge (see Paragraph 3.3). Such repair or replacement shall be the purchaser's exclusive remedy.

2.2 The Pro Rata Warranty Period for batteries begins on the date the full warranty period ends.

2.3 A battery determined to be defective during the Pro Rata Warranty Period shall be repaired or replaced at a cost equal to the net price in effect at the time, reduced by the percentage obtained in multiplying 10% by the number of full years remaining in the total warranty period. Such repair or replacement at this adjusted price shall be the purchaser's exclusive remedy.

3.0 All warranties are subject to proper installation and maintenance in accordance with the instructions supplied.

3.1 Any material deemed defective must be returned, freight prepaid, to the factory for evaluation (see Paragraph 5.0-5.3). Any changes in circuitry or components by other than authorized Lightalarms® personnel or its service companies will void the warranty.

3.2 All warranties are limited to the repair and/or replacement or parts or equipment, which, upon examination at our plant, are determined to be defective and in our judgement are subject to repair or replacement under warranty. Replacement of lamps and fuses is not included in the warranty except for MR16 LED lamps are warranted to be free of defects in material and workmanship under normal use for a period of five (5) years when purchased and used with Lightalarms® Battery Units, Combination Units or Remotes. The full warranty period begins on the date of installation or ninety (90) days from the date of shipment, whichever date is earlier.

3.3 If new replacement parts are shipped before defective goods are received for evaluation, the replacement parts will be invoiced at the net price in effect at that time. These charges will be credited if, upon receipt and evaluation of goods, a defect is determined. Only replacement parts will be shipped under these circumstances, if field replacement is possible. **LIGHTALARMS® FACTORY ONLY RESERVES THE RIGHT TO SHIP NEW UNIT EQUIPMENT FOR REPLACEMENT PURPOSES.** Units returned after installation cannot be restored to 100% saleable condition.

4.0 In no event shall Lightalarms® be liable for backcharges of any kind, including, without limitation, labor charges for field repair or late penalties.

4.1 This warranty does not cover damages caused by improper maintenance of installation or damage due to installation in areas with other than normal temperatures and environmental conditions per application specifications. Lightalarms® assumes no responsibility for any damage to people, property, apparatus or otherwise resulting from improper installation or maintenance of its Emergency Lighting Unit Equipment.

4.2 This warranty does not cover damages caused by abuse, fire or Act of God.

4.3 In no event shall Lightalarms® be liable for incidental or consequential damages.

4.4 The foregoing warranty is in lieu of all other warranties, expressed or implied, or merchantability, fitness for a particular purpose or any other thing. Except as stated in this warranty, Lightalarms® shall not be liable for any defects in, or breach of any contract relating to, the quality of performance of Lightalarms® Equipment under any theory of law including, without limitation, contract, negligence, strict liability or misrepresentation.

4.5 Lightalarms® warranty coverage shall not apply to any equipment of another manufacturer used in conjunction with Lightalarms® Equipment.

4.6 Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This written warranty gives you specific legal rights and you may also have other rights which vary from state to state.

5.0 No returned defective materials will be accepted without a Returned Goods Authorization issued in writing by an authorized Lightalarms® employee.

5.1 Purchaser is responsible for secure packing of returned materials to provide best possible assurance against damage in shipment.

5.2 Defective batteries of any kind must not be returned to Lightalarms's® factory without strict adherence to special instructions for handling and shipping. WARNING Never ship a refillable wet battery in any type of emergency lighting equipment. Failure to adhere to this policy will void warranty.

5.3 Defective goods returned to the factory must be shipped prepaid. COLLECT RETURNED SHIPMENT WILL BE REFUSED. Freight charges to return repaired equipment or ship replacement equipment to the purchaser to be paid by Lightalarms®. Factory will return repaired goods via same shipping method as received.

FAILURE TO COMPLY WITH ANY OF THE STIPULATIONS SET FORTH WILL VOID THE WARRANTY.
ANY EXCEPTIONS TO THE FOREGOING WARRANTY MUST BE REQUESTED AND ACCEPTED IN WRITING PRIOR TO SHIPMENT.
LIGHTALARMS® EQUIPMENT NOT LISTED IN PARAGRAPHS 1.0, 1.1 OR 1.2 IS WARRANTED AS DESCRIBED
ON ITS INDIVIDUAL DATA SHEET WITH THE STIPULATIONS
AS STATED IN PARAGRAPHS 2.0-5.3.

Product Index

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