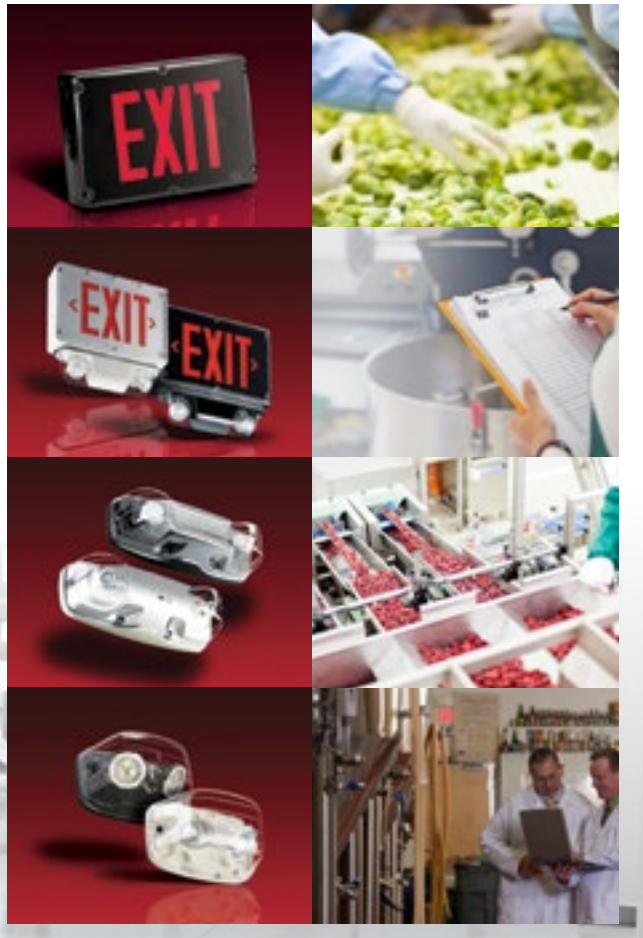
Lightalarms

Lights the way to safety

NSF

SEVERE™ SERIES

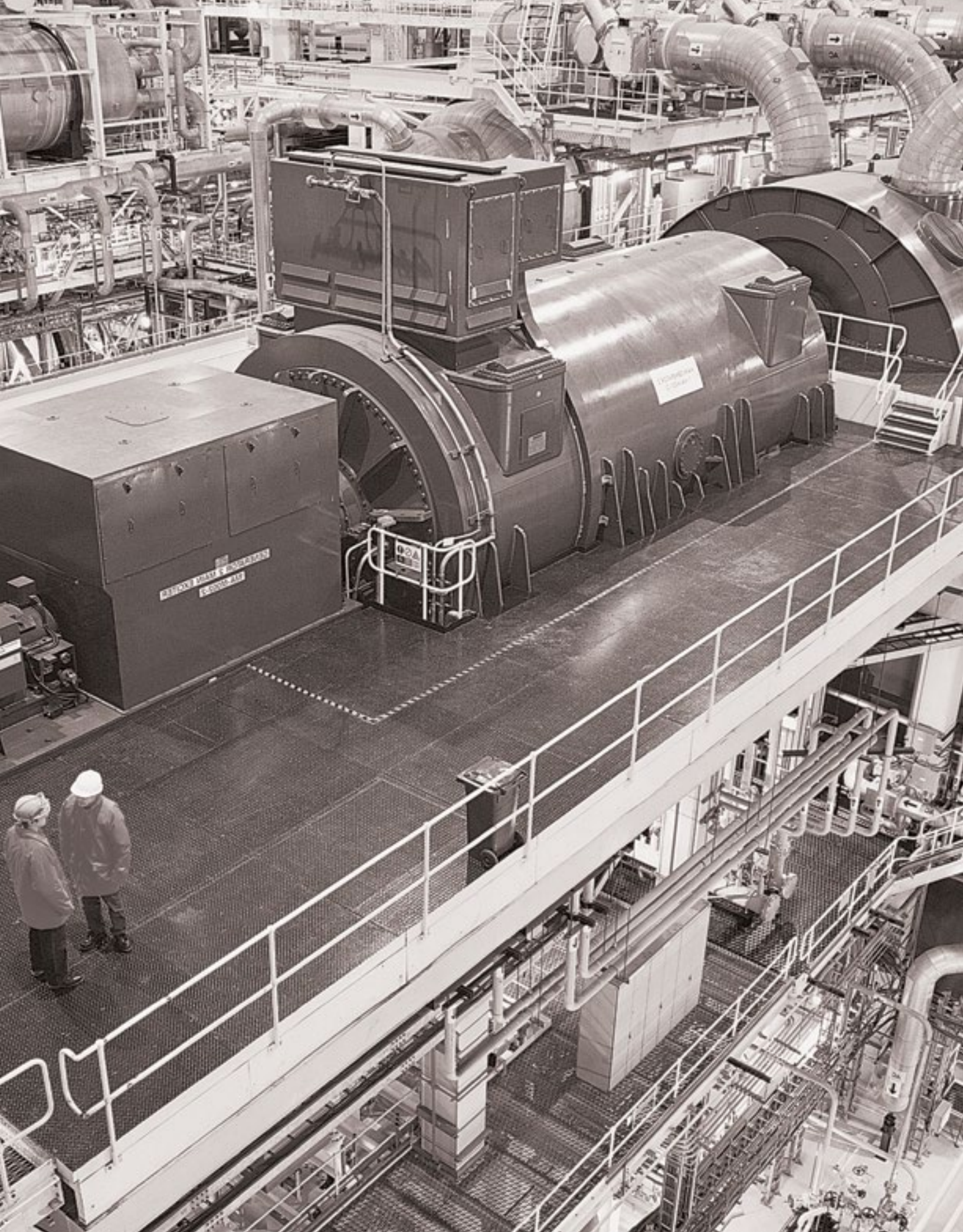
Certified for Food Preparation and Cold Storage Applications



NEMA-4X Certified for Harsh Environments

Thomas&Betts

A Member of the ABB Group



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NSF, what and why?

Required Testing

- Physical design and construction evaluation: Ensures the product is easily cleanable.
- Material review: Provides verification that the materials used to fabricate the equipment are nontoxic. Materials must be corrosion resistant; coatings are tested for durability against impact and abrasion.
- Sanitization effectiveness: Confirms that the manufacturer's recommended cleaning and sanitizing procedures actually do sanitize the equipment.

The NSF Mark

The presence of the NSF Mark on food service equipment means that the equipment has been evaluated, tested, and certified by NSF International as meeting international commercial food equipment standards. To earn the right to use the NSF Mark, a manufacturer must pass not only stringent evaluation and testing of its product, but also rigorous, unannounced inspections of its production facilities which are conducted on a routine basis.

NSF International

NSF International is an independent, not-for-profit organization dedicated to public health safety and protection of the environment. As a "thirdparty" provider of certification services, NSF is not a government agency and is not controlled by industry. This independent status guarantees that the equipment is tested and evaluated by a completely impartial agency.

Regulatory Acceptance

Demonstrate to regulatory officials that the products you use have obtained the most respected and accepted certifications in the industry. NSF Certification validates that your food equipment supports HACCP compliance.

HACCP

Hazard analysis and critical control point. Food production, storage, and distribution monitoring system for identification and control of associated health hazards. It is aimed at prevention of contamination, instead of endproduct evaluation. In place of relying on food inspectors to detect food safety problems, HACCP shifts the responsibility to the food producer to ensure that the product is safely consumable.

NEMA-4X Rating

Definition: Intended for indoor or outdoor use primarily to provide a degree of protection against corrosion, windblown dust and rain, splashing water, and hose directed water; undamaged by ice which forms on the enclosure. The Survive-All™ emergency lighting product family was created to endure the harsh realities of the food processing or preparation industry as well as most heavy industrial facility. In fact, these units are a perfect fit not only for food preparation areas but also for car washes, chemical plants, prisons, swimming pools and sports arenas, parking garages or schools.

Severe™ Series Family

NSF and NEMA-4X emergency lighting products for harsh environment applications

Severe™ Series is the industry standard for emergency lighting in food processing applications. Battery units, remote fixtures, exit signage and combo units – Lightalarms® is proud to offer a complete family of NSF and NEMA-4X Certified emergency lighting products that delivers impressive, state-of-the-art illumination in a visually-appealing package. A complete emergency lighting solution, these products are designed for use in a wide range of commercial and industrial environments where humidity, corrosion, dust, water infiltration and the risk of vandalism are specification criteria.

NSF UL NEMA-4X id improved diagnostics

Exit Sign – Severe™ XV, XVE Series

- Sealed heavy-duty, vandal-resistant polycarbonate faceplate
- Suitable for cold weather -40°F (-40°C) (AC/DC model) and -4°F (-20°C) on Self-Powered model (CW option)
- Long-life, energy-efficient ALINGAP technology red LED light source
- Energy efficient – consumes less than 3W in AC or DC mode

Combo Unit – Severe™ XV12E & XV24E Series

- Innovative, field-adjustable lamp head assembly
- Choice of MR16 halogen lamps up to 12V, 12W or high-efficiency, 4W to 6W, MR16 LED lamps
- Long life, energy efficient ALINGAP technology red LED illuminated EXIT legend
- Can be wall, end or ceiling mounted
- Double face available
- Suitable for cold weather applications: -40°F (-40°C)

Battery Unit – Severe™ SV Series

- Fully gasketed cast aluminum back plate with clear UV resistant polycarbonate cover
- Long-life, maintenance-free sealed Lead-Acid battery
- Choice of MR16 halogen lamps up to 12V, 20W or high-efficiency, 4W to 6W, MR16 LED lamps
- Wall, strut or beam mounting
- Unit capacity: up to 60W
- Suitable for cold weather applications, -40°F (-40°C) (CW option)

Remote Fixtures – Severe™ ELF640/ELF650 Series

- Choice of single or double head models
- Fully gasketed with a selection of cast aluminum or polycarbonate back plate
- Choice of MR16 halogen lamps up to 24V, 20W or highefficiency, 4W to 6W to 6W, MR16 LED lamps

Applications

- Food processing / preparation facilities
- Chemical plants
- Warehouse and cold storage facilities
- Heavy industrial facilities
- Marine locations
- Schools and other public facilities
- Parking garages
- Transit platforms
- Sports arenas / swimming pools
- Security areas / prisons

Certifications

- UL Certified for 90 minutes
- Exit signs meet or exceed UL-924 requirements
- NEMA-4X Certified for high abuse areas, wet locations and cold weather (-40°C) applications
- NSF Certified for use in food processing plants

Features

- Battery units and remote fixtures deliver amazing pathway illumination – 70 feet, center-to-center (see photometric data on back cover)
- Fully gasketed enclosures prevent water infiltration
- Vandal-resistant enclosures - resist dents, peeling and corrosion
- All units come with tamper-proof screws and bits
- UV resistant enclosures
- Choice of colors – factory white, black and gray
- Continuous self-diagnostic monitoring and monthly self-testing
- Fully automatic, solid state charger
- Non-intrusive magnetic test switch
- NEXUS® compatible

Lightalarms

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 104°F (-20°C to 40°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 # _____

_____

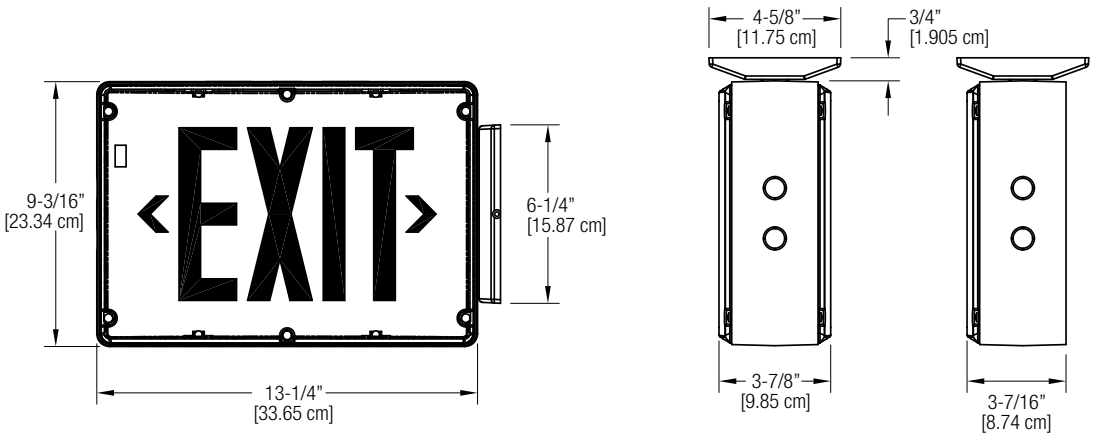
NOTES _____

_____

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 104°F, -20°C to 40°C) (AC-Only and AC/DC -40°F to 104°F, -40°C to 40°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™ 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 # _____

_____

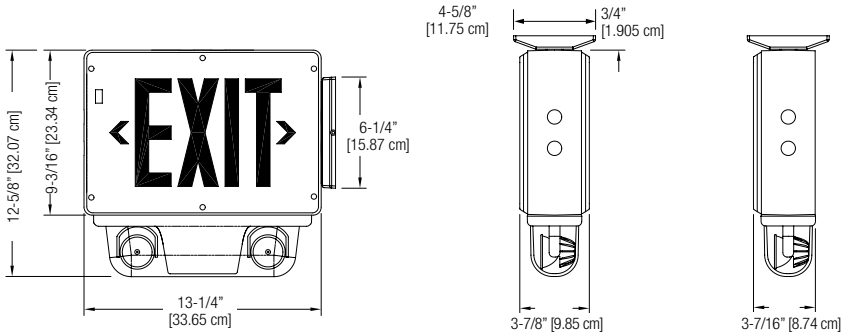
NOTES _____

_____

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™ 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.

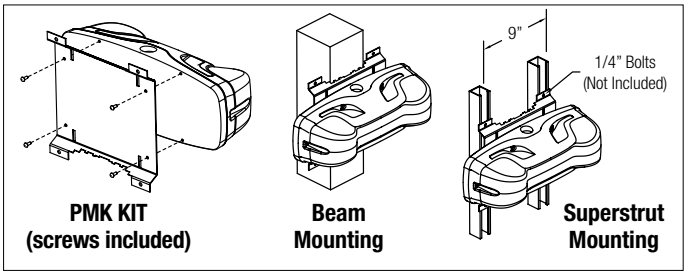
The charger shall continuously recharge the battery. When the battery is at full capacity, the charger will periodically pulse-charge the battery in stand-by mode. This pulse-type charger promotes long battery life and reduces the potential for grid corrosions. Its charge voltage is factory set to +/-1% 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**

nexus NEMA-4X NSF id improved diagnostics UL

TYPE _____

CATALOG # _____

_____

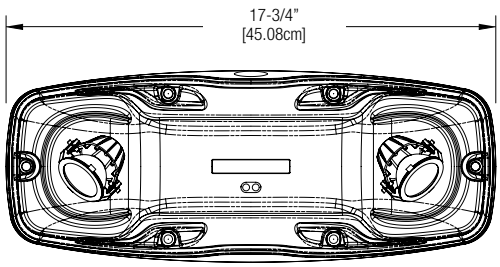
NOTES _____

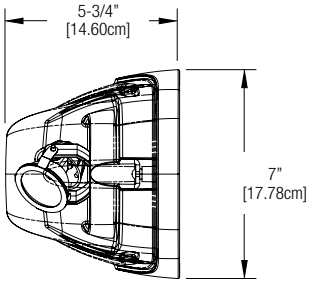
_____

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

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

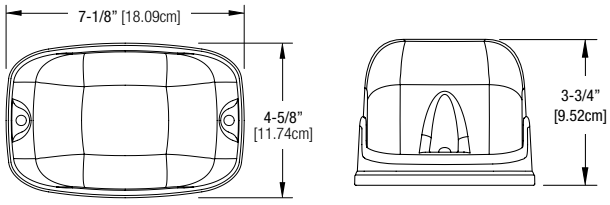
- Surface Mount
- Includes a back plate for mounting to a standard 4" octagonal electrical box

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

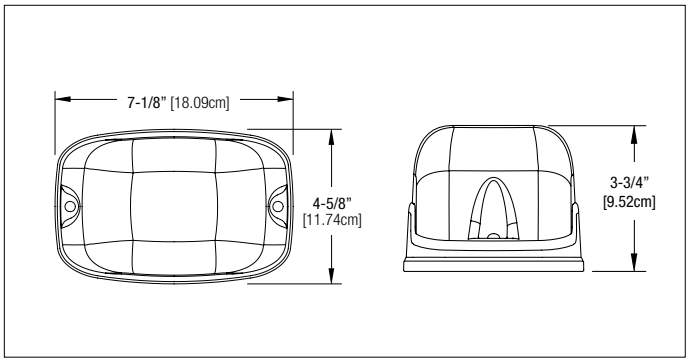
Approval

- 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

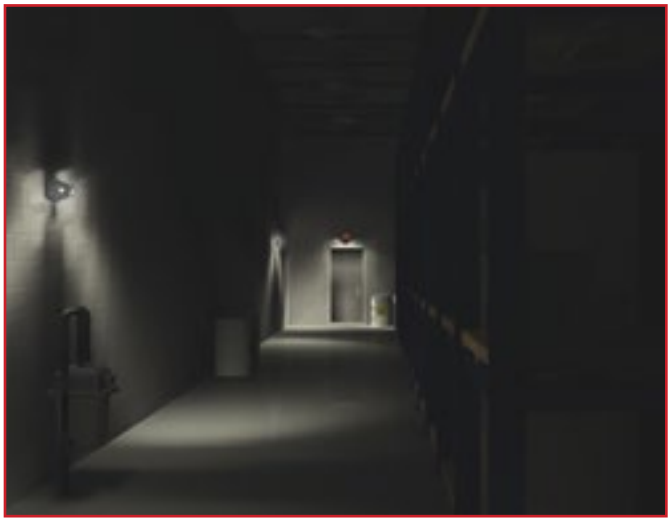
SERIES	LAMP SUFFIX	COLOR	VOLTAGE
ELF650= Die-Cast back plate NEMA-4X and NSF Certified with single head **ELF650D**= Die-Cast back plate NEMA-4X and NSF Certified with double head **ELF650P**= All polycarbonate NEMA-4X and NSF Certified with single head[1] **ELF650PD**= All polycarbonate NEMA 4X and 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

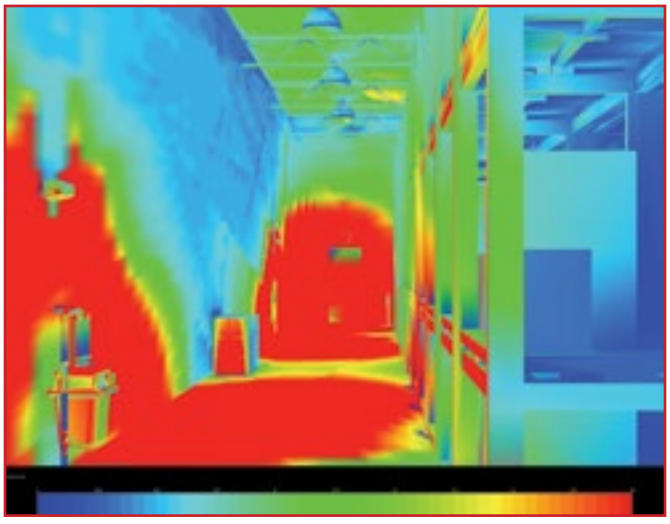
Photometrics

The Lightalamrs® NEMA-4X Series of emergency lighting sets an impressive new standard for center-to-center path of egress illumination. Battery units and remote fixtures illuminate an egress path 89-feet long, center-to-center, and 6-feet wide (using 2-6W MR16 LED lamps). Photometric data based on a 7.5-foot mounting height, minimum 80-50-20 reflectance values and 12V-6W lamps.

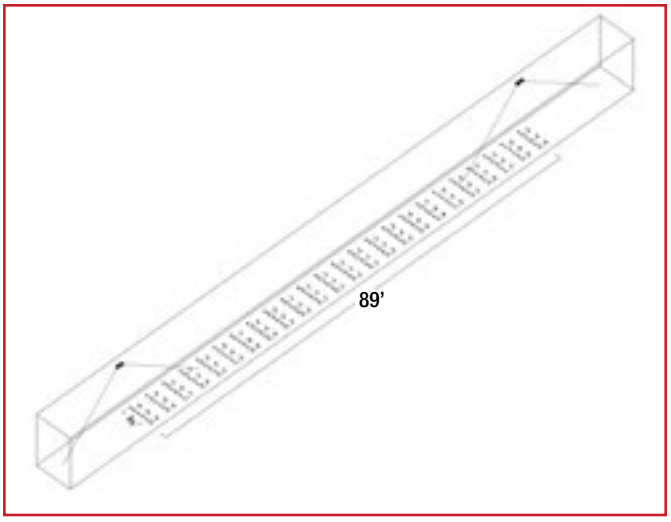
3D image showing installation of two SV Series battery units and a SVX combo unit in an industrial application under normal lighting conditions.



3D image lighting rendering showing installation of two SV Series battery units and a SVX combo unit in an industrial application under emergency lighting conditions.



3D light level colored scale image showing egress illumination pattern generated by two SV Series battery units and a SVX combo unit.



ISO curve on a point-by-point grid of two SV Series battery units with 2-6W MR16 LED lamps per unit.

NOTE: Photometric results shown are based on a simulation using the AGI32 software with a 1 foot-candle average and 0.1 foot-candle minimum with a 40:1 maximum-minimum ratio. Lightalarms® assumes no responsibility for local requirements or specific project variables. This is a guideline to be used as a design aid, not a guarantee of any code compliances

Notes

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Thomas&Betts
A Member of the ABB Group

All information and specifications contained in this flier are subject to change due to engineer design, errors and omissions.
Illustrations and diagrams within this flier may vary from actual products.

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