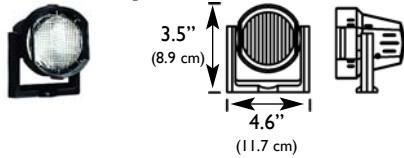


# Remote Lamp Heads

metal chrome and thermoplastic halogen and tungsten lamp heads  
6 volt or 12 volt operation

lamp heads, fixtures, accessories, ac systems & other

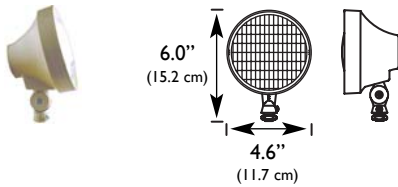
## Thermoplastic H-Head



A	VOLTAGE	WATTAGE	TAN	WHITE	BLACK
HALOGEN	6 VOLT	7.0	H76T	H76W	H76B
		12.0	H126T	H126W	H126B
	12 VOLT	12.0	H1212T	H1212W	H1212B

## Thermoplastic Round

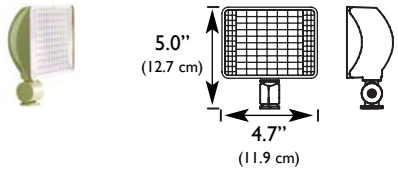
Thermoplastic Round T5 Wedge Base and Bi-Pin



B	VOLTAGE	WATTAGE	TAN	WHITE	BLACK	REPLACEMENT LAMP #	
						LIGHTGUARD #	ANSI #
TUNGSTEN	6 VOLT	5.4	D66T	D66W	D66B	19-2-54	939
		7.2	D76T	D76W	D76B	19-2-58	927
		9.0	D96T	D96W	D96B	19-2-45	908
	12 VOLT	9.0	D912T	D912W	D912B	19-2-53	915
		12.5	D1212T	D1212W	D1212B	19-2-62	922
HALOGEN	6 VOLT	7.0	DH76T	DH76W	DH76B	19-2-61	921
		9.0	DH96T	DH96W	DH96B	19-2-82	N/A
		12.0	DH126T	DH126W	DH126B	19-2-83	N/A
	12 VOLT	12.0	DH1212T	DH1212W	DH1212B	19-2-84	N/A
		12.0	DH1212T	DH1212W	DH1212B	19-2-85	N/A

## Thermoplastic Rectangular

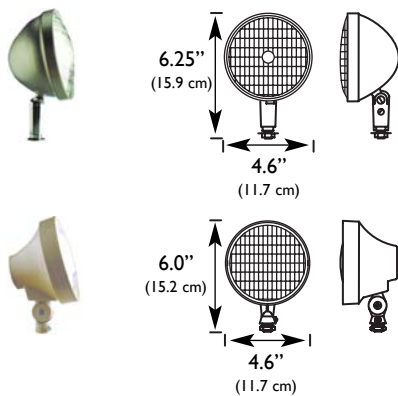
Thermoplastic Rectangular T5 Wedge Base



C	VOLTAGE	WATTAGE	WHITE	BLACK	REPLACEMENT LAMP #	
					LIGHTGUARD #	ANSI #
TUNGSTEN	6 VOLT	5.4	J66	J66B	19-2-54	939
		7.2	J76	J76B	19-2-58	927
		9.0	J96	J96B	19-2-45	908
	12 VOLT	9.0	J912	J912B	19-2-53	915
		12.5	J1212	J1212B	19-2-62	922
		18.0	J1812	J1812B	19-2-61	921

## Metal Chrome & Thermoplastic

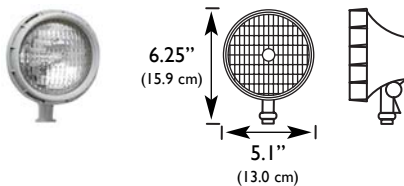
Metal Chrome & Thermoplastic Round Sealed Beam - Par 36



D E	VOLTAGE	WATTAGE	METAL CHROME	THERMOPLASTIC			REPLACEMENT LAMP #	
				TAN	WHITE	BLACK	LIGHTGUARD #	ANSI #
TUNGSTEN	6 VOLT	8.0	PRL86	DS86T	DS86W	DS86B	19-1-7613	7613
		18.0	PRL186	DS186T	DS186W	DS186B	19-1-4014	4014
		25.0	PRL256	DS256T	DS256W	DS256B	19-1-4510	4510
		30.0	PRL306				19-1-4515	4515
	12 VOLT	12.0	PRL1212	DS1212T	DS1212W	DS1212B	19-1-4044	4044
		18.0	PRL1812	DS1812T	DS1812W	DS1812B	19-1-4414	4414
HALOGEN	24 VOLT	25.0	PRL2512	DS2512T	DS2512W	DS2512B	19-1-4446	4446
		30.0	PRL3012				19-1-4405	4405
		50.0	PRL5024				19-1-4593	4593
	6 VOLT	6.0	PRLH66	DSH66T	DSH66W	DSH66B	19-1-7556	7556
		8.0	PRLH86	DSH86T	DSH86W	DSH86B	19-1-7551	7551
		12.0	PRLH126	DSH126T	DSH126W	DSH126B	19-1-7553	7553
	12 VOLT	8.0	PRLH812	DSH812T	DSH812W	DSH812B	19-1-7555	7555
		12.0	PRLH1212	DSH1212T	DSH1212W	DSH1212B	19-1-7557	7557
		30.0	PRLH3012				19-1-H4405	
		50.0	PRLH5012				19-1-H7604	7604
		50.0	PRLH5012F				19-1-7614	7614

## Heavy Industrial Sealed

Heavy Industrial Duty Sealed Beam - Par 36



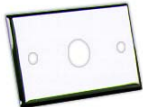
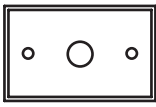



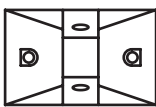



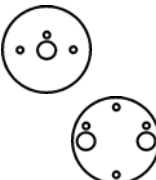
F	VOLTAGE	WATTAGE	CLASS 1, DIV 2 GRAY	NEMA RATED GRAY	REPLACEMENT LAMP #	
					LIGHTGUARD #	ANSI #
TUNGSTEN	6 VOLT	8.0	XA	XM	19-1-7613	7613
		18.0	XB	XN	19-1-4014	4014
		25.0	XC	XO	19-1-4510	4510
		30.0		XP	19-1-4515	4515
	12 VOLT	12.0	XE	XQ	19-1-4044	4044
		18.0	XF	XR	19-1-4414	4414
HALOGEN	6 VOLT	25.0	XG	XS	19-1-4446	4446
		30.0		XT	19-1-4405	4405
		6.0	XY	XZ	19-1-7556	7556
	12 VOLT	8.0	XI	XU	19-1-7551	7551
		12.0	XJ	XV	19-1-7553	7553
		8.0	XK	XW	19-1-7555	7555
		12.0	XL	XX	19-1-7557	7557
		50.0		X5	19-1-H7604	7604
50.0		X5F	19-1-7614	7614		

# Mounting Plates

metal chrome, cast aluminum and thermoplastic mounting plates

## Lamp Head Types (A-F)

Match mounting plates with lamp head letters on previous page.

			A	B	C	D	E	F
 	Chrome Single Head Fits Single Gang Wall Box	MP1	MP1	MP1	MP1	MP1S	MP1	
	Double Head Fits Three Gang Wall Box	MP3	MP3	MP3	MP3	MP3S	MP3	
 	Cast Aluminum Weatherproof Single Head Fits 3" or 4" Round Box		CRMP1	CRMP1	CRMP1	MPIWP	CRMP1	
	Double Head Fits 3" or 4" Round Box		CRMP2	CRMP2	CRMP2	MP2WP	CRMP2	
 	Cast Aluminum Weatherproof Fits Single Gang Box							
	Single Head Double Head		CSMP1 CSMP2	CSMP1 CSMP2	CSMP1 CSMP2	MPIR MP2	CSMP1 CSMP2	
 	Thermoplastic 5" Diameter Mounts Directly to Single Gang Wall Box							
	Single Head, Gray Single Head, White Single Head, Black Weatherproof Option		MW1 MBLK1 -WP	MW1 MBLK1 -WP	MW1 MBLK1 -WP		MG1WP  included*	
	Double Head, Gray Double Head, White Double Head, Black Weatherproof Option		MW2 MBLK2 -WP	MW2 MBLK2 -WP	MW2 MBLK2 -WP		MG2WP  included*	
	Same As Above with 45° Mounting Holes, Fits 3.5" Octagonal Box		MW2S -WP	MW2S -WP	MW2S -WP		MG2SWP  included*	
 	Metal Painted Round, Domed for Round or Switch Boxes							
	Single Head White Double Head White	CPIW CP2W	CPIW CP2W	CPIW CP2W	CPIW CP2W			

\*Mounting plates include weatherproof gasket

Lamp heads, fixtures, accessories,  
ac systems & other

# Decorative Remote Lighting Fixtures



lamp heads, fixtures, accessories, ac systems & other

## SQ Series - Recessed Square Light

Suitable for indoor or outdoor applications • Rectangular, aluminum construction with a watertight, gasketed door and matte white trim • Flush abortite diffuser

## ST Series - Recessed Step Light

Designed for step and walkway lighting • Low profile, rectangular design with a matte white finish

## RL Series - Recessed Round Light

Round recessed ceiling unit • Aluminum trim finished in matte white with steel backbox • Fresnel lens flush with ceiling

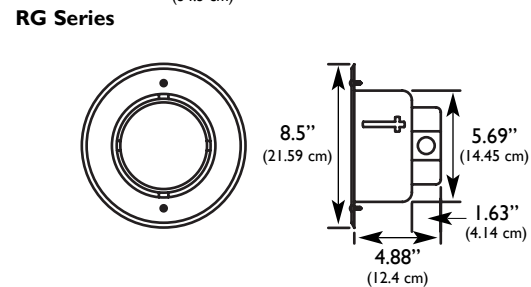
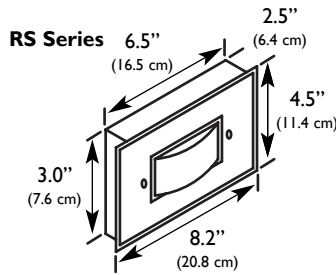
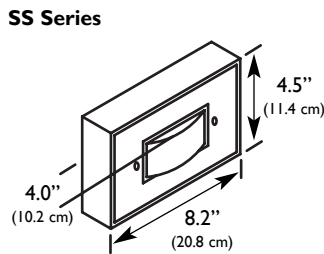
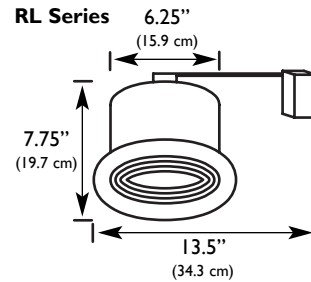
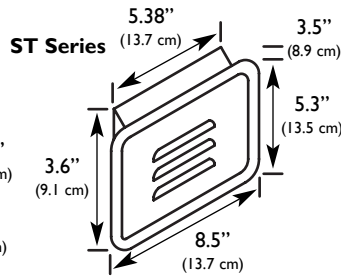
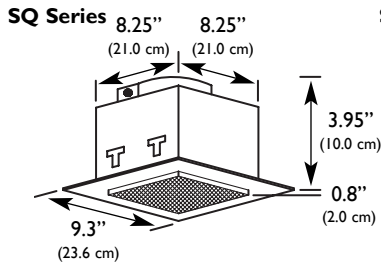
## SS Series, RS Series - Step Light with Lens

Available in surface or recessed mounting • Steel enclosure with a frosted glass lens • Single or double lamp operation

## RG Series - Recessed Round Par 36 Gimbal

Adjustable gimbal light fixture • Available only with Par 36 sealed beam lamps • Matte white trim ring, spun aluminum housing

### dimensions



### ordering information

SQ, ST, RL, ME, SS, RS Series  
Miniature DC Bayonet Base Lamps

SERIES	VOLTAGE	WATTAGE	# OF LAMPS
RL = RL Series Recessed Round Light	6 = 6 Volt	6 Volt	<b>(RS, SS Only)</b> 1 = One 2 = Two
RS = RS Series Recessed Step Light w/ Lens	12 = 12 Volt	6 = 6 Watt	
SQ = SQ Series Recessed Square Light		12 = 12 Watt	
SS = SS Series Surface Step Light w/ Lens		18 = 18 Watt	
ST = ST Series Recessed Step Light		28 = 28 Watt	
		<b>12 Volt</b> 6 = 6 Watt 13 = 13 Watt 18 = 18 Watt	

RG Series  
Par 36 Sealed Beam Lamps

RG	
SERIES	WATTAGE
RG = RG Series	<b>6 Volt, Tungsten</b>   <b>12 Volt, Tungsten</b>
Recessed	618 = 18 Watt   1212 = 12 Watt
Gimbal	625 = 25 Watt   1218 = 18 Watt
	630 = 30 Watt   1225 = 25 Watt
	<b>6 Volt, Halogen</b>   1230 = 30 Watt
	H68 = 8 Watt   <b>12 Volt, Halogen</b>
	H612 = 12 Watt   H128 = 8 Watt
	H1212 = 12 Watt

# Accessories

wire guards, vandal shield, mounting shelves and universal test remote for emergency lighting units and exit signs

## features

Wire guards and the polycarbonate vandal shield provide protection from accidental or intentional abuse of emergency lighting equipment

Ideal for high traffic areas such as schools, gymnasiums and public buildings

Wire guards are made from 12 gauge steel wire, joint-welded for strength

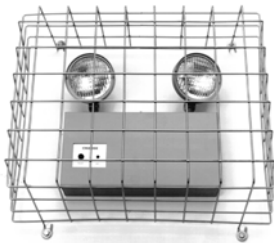
Vandal shield is constructed of a vacuum formed polycarbonate

Mounting shelves have an epoxy powder coat finish

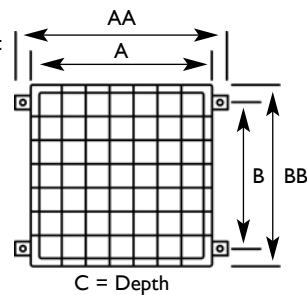
## Wire Guards & Vandal Shield

CAT #	FOR USE WITH:	A	AA	B	BB	C
<b>WG</b>	Vectra Series - steel (12V, 200-450W), Vectra Series - steel (24V, 300W, 450W), Luminator Series, Guard-Lite Series, E100 II Series - Combination, B200G/170G	20.0" (50.8 cm)	26.0" (66.0 cm)	20.0" (50.8 cm)	26.0" (66.0 cm)	11.0" (27.9 cm)
<b>WG3</b>	Super Square II Series	10.0" (25.4 cm)	12.0" (30.5 cm)	10.0" (25.4 cm)	12.0" (30.5 cm)	5.5" (14.0 cm)
<b>WG4</b>	Wall Mount Thermoplastic, Die Cast, Steel & Tritium Standard Exits, Super Square II Series (fully recessed)	12.5" (31.8 cm)	14.5" (36.8 cm)	15.0" (38.1 cm)	17.0" (43.2 cm)	5.5" (14.0 cm)
<b>WG5</b>	N4X Series, Vectra Series - thermoplastic, Vectra Series - steel (6V, 25-100W), Guard-Lite Series, Unison Series (units), Unison Series - Combination, Vectra Series - steel (12V, 25-150W), Vectra Series - steel (24V, 100W)	16.0" (40.6 cm)	18.0" (45.7 cm)	21.0" (53.3 cm)	23.0" (58.4 cm)	10.0" (25.4 cm)
<b>WG8</b>	ER6/ER12 Series, Top and Back Mount NEMA Standard Exits	12.0" (30.5 cm)	14.0" (35.6 cm)	12.0" (30.5 cm)	14.0" (35.6 cm)	13.0" (33.0 cm)
<b>WG10</b>	Wet Lok - exit, DX Series, E100 II Series and Tritium Series Exits	8.8" (22.4 cm)	N/A	N/A	15.0" (38.1 cm)	15.0" (38.1 cm)
<b>PVS</b>	All Standard Exits, N4X Series, Vectra Series - thermoplastic, ER6/ER12 Series, Unison Series (units), F100/F85	19.4" (W) X 12.3" (H) X 9.0" (D) Outside 19.2" (W) X 12.1" (H) X 8.9" (D) Inside				

Wire Guards



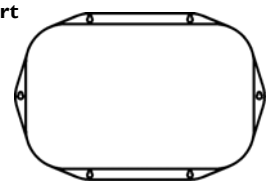
See Chart



PVS - Vandal Shield



See Chart



## Mounting Shelves

CAT #	FOR USE WITH:	LENGTH	HEIGHT	WIDTH
<b>SSMP</b>	Vectra Series - steel (6V, 25-50W), Vectra Series - steel (12V, 25-50W)	13.0" (33.02 cm)	8.0" (20.32 cm)	2.75" (6.98 cm)
<b>SMMP</b>	Vectra Series - steel (6V, 75-100W), Vectra Series - steel (12V, 75-50W), Vectra Series - steel (24V, 100W)	15.25" (38.73 cm)	9.0" (22.86 cm)	6.0" (15.24 cm)
<b>SLMP</b>	Vectra Series - steel (12V, 200-450W), Vectra Series - steel (24V, 300W, 450W)	19.0" (48.26 cm)	11.0" (27.94 cm)	7.5" (19.05 cm)
<b>MSSHelfW</b>	Vectra Series - plastic	14.6" (37.1 cm)	5.5" (14.0 cm)	5.3" (13.5 cm)



Lamp heads, fixtures, accessories, ac systems & other

# Smart Charger Electronics for Unit Equipment and Exit Signs

lamp heads, fixtures, accessories, ac systems & other

## features

The Smart Charger is designed around an 8-bit microprocessor to provide unmatched reliability and performance. Microprocessor controlled standard features include:

- 8-bit microprocessor ( $\mu$ p)
- AC lockout mode, AC power indicator
- Charge status indicator
- Transformer-isolated input
- Audible user interface controls
- On-board IR receiver
- Optional hand-held IR remote (SCIR)

## Charger

The on-board thermal detection feature of the Smart Charger microprocessor allows for a precision temperature compensation algorithm equal to 3 milli-volts per degree C. Standard charger features include:

- 120/277 VAC, 60 Hz standard input
- $\mu$ p controlled, linear, temperature compensation
- Reverse battery polarity detection and protection
- Reverse utility power detection and protection

## Transfer

- $\mu$ p controlled, solid state
- Low-voltage battery disconnect (LVD)
- Brownout detection circuit
- Optional time delay (15-minute\*) for unit equipment
- Two available LED output circuits for exit signs
- AC line latch

\*For compliance to Article 700 of the NEC.

## Diagnostics

The Smart Charger diagnostics monitoring circuit is continuous and in real time. The benefits of real time monitoring allows the microprocessor to self-heal fault conditions when remedied, excluding lamp failure on unit equipment (lamp failure is considered most critical and requires a transfer test to clear the fault after re-lamping). In doing so, there is no need to reset the system after maintenance.

- Audible and non-audible versions available
- Silence alarm button on audible versions
- Visual LED fault display
- Battery failure, battery disconnect
- Charger failure
- Lamp/LED failure
- Transfer failure

## Optional Self-Testing\* (standard on select models)

The Smart Charger diagnostic/charging platform with optional self-testing mode automatically runs a one-minute self-test every 30 days and a 30-minute test on the sixth and twelfth month. A one-minute or 90-minute test may be initiated via the push to test switch on the unit or by activating the appropriate test command on the optional IR test device.

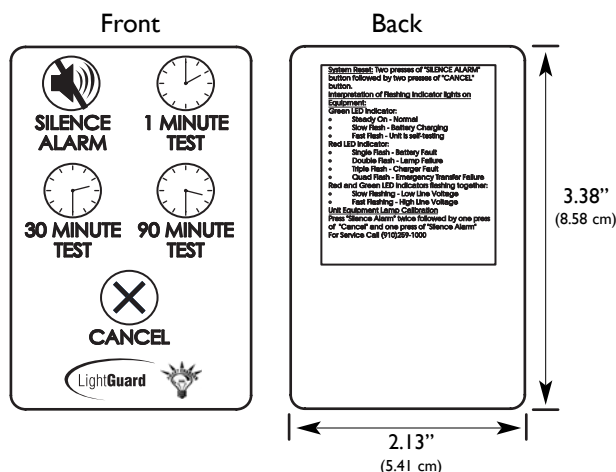
\*Note: NFPA 101 does not allow a self-testing diagnostics board to run the required annual 90-minute test. Refer to the 2006 version of NFPA 101, section 7.9.3.1.2 (1) through (7).

## Available Accessory Item

Hand-Held IR Interface

Indoor range: 30-40 ft.

Outdoor range: varies depending on exposure to sun



## ordering information

SCIR
SERIES
SCIR = Smart Charger Infra-Red Remote

## Products with Smart Charger

Unity.....	3	Guard-Lite Series....	40-42
Grafix.....	4	Vintage Series.....	48
Illusion III.....	5	DX Series.....	57
Illusion.....	9	E700 Series.....	61
Illusion2.....	10	Wet Lok.....	62
Unison Series.....	16		
Vectra Series.....	18-21		
Luminator Series....	32		
Wet-Lok Series.....	33-34		

# AC Systems

transfer relay, IPS, single phase and three phase UPS systems

## features

LightGuard provides a full range of single phase and three phase AC emergency lighting systems to fulfill the life safety requirement of facilities large and small. All of our AC emergency lighting systems are listed to the stringent UL 924 standard. Visit [www.lightguard.com](http://www.lightguard.com) for more details.

## applications

### industrial, warehouse and recreational facilities

Operates critical circuits of high bay luminaires in manufacturing and assembly areas, warehouses and gymnasium facilities to obtain required emergency illumination.

### retail, office and institutional facilities

Operates critical circuits of existing luminaires to obtain required emergency illumination. Improves facility aesthetics and reduces risk of failure due to vandalism.

### exterior paths of egress and parking facilities

Operates critical circuits of existing luminaires to obtain required emergency illumination. Improves performance in adverse ambient conditions such as cold weather and reduces risk of failure due to vandalism.

### hazardous or special classification locations

Operates critical circuits of existing luminaires to obtain required emergency illumination in extreme environments. Install AC systems in a safe, remote environment and operate critical luminaires in areas such as paint facilities, grain facilities and food processing areas. Reduces expense of duplicating emergency and normal operation luminaires.

## products



**LightSTAR** ®  
Light Switch Transfer  
Automatic Relay



**FLTC20** ®  
Dimming system compatible  
dual source transfer switch



**StarPower** ®  
150 VA  
Interruptible power supply (IPS)  
for emergency lighting applications.



**Centaurus LM-UPS** ®  
550-1,500 VA  
Single phase, uninterruptible power  
supply (UPS) for emergency lighting  
applications.



**Centaurus LGT Series** ®  
1.5-14.0 kVA  
Single phase, uninterruptible power  
supply (UPS) for emergency lighting  
applications.



**Centaurus LG2 Series** ®  
600-2,000 VA  
Uninterruptible power supply (UPS)  
for emergency lighting applications.



**LEPEM** ®  
10-75 kVA  
Three phase, uninterruptible power  
supply (UPS) for emergency lighting  
applications.

lamp heads, fixtures, accessories,  
ac systems & other

# NFPA 70, National Electrical Code

The following excerpts from the 2005 NFPA 70, National Electrical Code, are provided as a quick overview and may help as a guide in the selection, specification and layout of emergency lighting products.

## 700-4 Tests and Maintenance.

**(A) Conduct or Witness Test.** The authority having jurisdiction shall conduct or witness a test on 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 equipments 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.

FPN: For testing and maintenance procedures of emergency power systems (EPSs), see NFPA 110-2002, *Standard for Emergency and Standby Power Systems*.

## 700.8 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 700.12(F).*

**(B) Grounding.** Where the grounded circuit conductor connected to the emergency source is connected to a grounding electrode conductor at a location remote from the emergency source, there shall be a sign at the grounding location that shall identify all emergency and normal sources connected at that location.

## 700.9 Wiring, Emergency 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 or emergency source distribution overcurrent protection to emergency loads shall be kept entirely independent of all other wiring and equipment, unless otherwise permitted in (1) through (4): (1) Wiring from the normal power source located in transfer equipment enclosures. (2) Wiring supplied from two sources in exit or emergency luminaires (lighting fixtures). (3) Wiring from two sources in a common junction box, attached to exit or emergency luminaires (lighting fixtures). (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 equipment.

## 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 shall 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 700.12(E). Unit equipment in accordance with 700.12(F) 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 so as to minimize the hazards that might cause complete failure due to flooding, fires, icing and vandalism.

Equipment for sources of power as described in 700.12(A) through 700.12(E) where located within assembly occupancies for greater than 1000 persons or in buildings above 75ft (23m) in height with any of the following 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.

FPN No. 1: For the definition of occupancy classification, see Section 6.1 of NFPA 101-2003, *Life Safety Code*.

FPN No. 2: Assignment of degree of reliability of the recognized emergency supply system depends on the careful evaluation of the variables at each particular installation.

**(A) Storage Battery.** Storage batteries used as a source of power for emergency systems shall be of suitable rating and capacity to supply and maintain the total load for a minimum period of 1½ hours, without the voltage applied to the load falling below 87½ percent of normal.

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 jars shall be furnished. Automotive-type batteries shall not be used.

An automatic battery charging means shall be provided.

**(F) 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. (4) A relaying device arranged to energize the lamps automatically upon failure of the supply to the unit equipment.

The batteries shall be of suitable rating and capacity to supply and maintain at not less than 87½ percent of the nominal battery voltage for the lamp load associated with the unit for a period of at least 1½ 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 1½ hours. Storage batteries, whether of the acid or alkali types, shall be designed and constructed to meet the requirements of emergency service.

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 feet (900mm) in length. 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. The branch circuit that feeds unit equipment shall be clearly identified at the distribution panel. Emergency luminaires (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 700.9 and by one of the wiring methods of Chapter 3.

*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.*

## IV. Emergency System Circuits for Lighting & 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 require 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.

*Exception: Alternative means that ensure emergency lighting illumination level is maintained shall be permitted.*

# NFPA 101, Life Safety Code

The following excerpts from the 2006 NFPA 101, National Fire Protection Association Life Safety Code, are provided as a quick overview and may help as a guide in the selection, specification and layout of emergency lighting products.

## SECTION 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 42. (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) The stair shaft and vestibule 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 purpose 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 upon 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 not less than 1½ hours in the event of failure of normal lighting. Emergency lighting facilities shall be arranged to provide initial illumination that is no 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 the 1½ 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 NFPA 110, *Standard for Emergency and Standby Power Systems*.

**7.9.2.3** The 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 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 used to provide power to emergency lighting systems shall be installed, tested, and maintained in accordance with NFPA 110, *Emergency and Standby Power Systems*. Stored electrical energy systems, where required in this Code, shall be installed and tested in accordance with NFPA 110, *Standard on Stored and Electrical Energy Emergency and Standby Power Systems*.

**7.9.2.5** Unit equipment and battery systems for emergency luminaires shall be listed to 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 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 at 30-day intervals for not less than 30 seconds. (2) Functional testing shall be conducted annually for not less than 1½ hours if the emergency lighting system is battery powered. (3) The emergency lighting equipment shall be fully operational for the duration of the tests required by 7.9.3.1.1(1) and 7.9.3.1.1(2). (4) Written records of visual inspections and tests shall be kept by the owner for inspection by the authority having jurisdiction.

## SECTION 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 Chapter 11 through Chapter 42.

**7.10.1.2** 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.

### 7.10.1.5 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 the exit access corridor is in excess of the rated viewing distance or 100 ft (30 m), whichever is less, from the nearest sign.

### 7.10.3 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.

**7.10.4 Power Source.** Where emergency lighting facilities are required by the applicable provisions of Chapter 11 through Chapter 42 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 or 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.** 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 ¾ in. (19 mm) wide. (2) For existing signs, the required wording shall be permitted to be 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 ⅜ in. (9.5 mm). (4) Sign legend elements larger than the minimum established in 7.10.6.1.1(1) through 7.10.6.1.1(3) shall have letter widths, strokes, and spacing in proportion to their height.

### 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 the following: (1) The directional indicator shall be located outside of the EXIT legend, not less than ⅜ 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.

**7.10.6.3 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 UL 924, *Standard for Safety 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.

### 7.10.9 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.



The National Electrical Manufacturers Association (NEMA) Emergency Lighting Section launched its Premium Exit Sign Program which establishes standards for and encourages the use of high-performance exit signage with restrictions on energy consumption. Previously, the only standard used for exit signs was that of the ENERGY STAR program which was based solely on energy efficiency and then was terminated after federal mandatory minimum efficiency requirements were established. The NEMA Premium Exit Sign Program is now a single identifier for both life safety performance and energy savings.

The NEMA Premium Exit Sign Program provides the method for identifying efficient and effective models that are consistent with NEMA performance standards and tested in accordance with applicable UL and CSA Standards. Participating products eligible for the NEMA Premium Exit Sign Program are those which illuminate an integral legally required legend that meet NEMA's more stringent 'EM-I Standard for Premium Exit Signs'. These signs are for installation in accordance with the National Electrical Code (ANSI/NFPA 70) and the Life Safety Code (ANSI/NFPA 101), including exit signs intended for use near the floor. Qualified products of this program bear a special mark that will help lighting professionals and end users recognize the market's highest performing and safest exit signage products on the market and will help support energy efficient objectives.

For more information, please visit: [www.nema.org](http://www.nema.org)

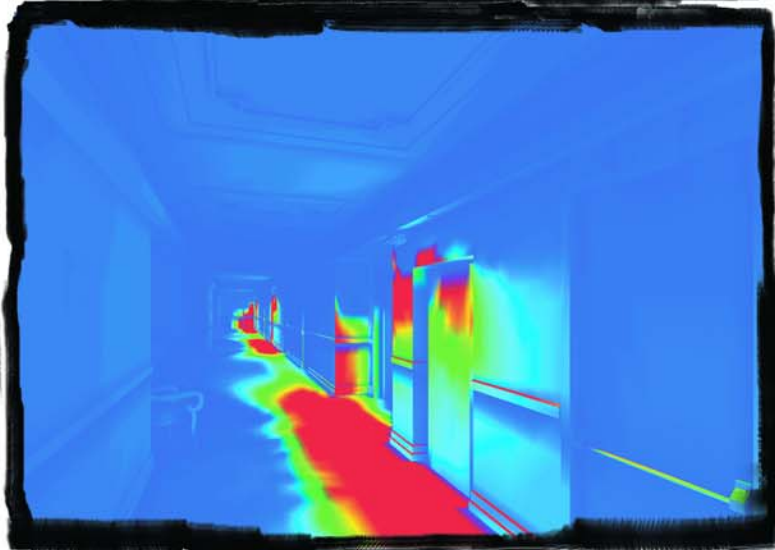


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# Exceeding Illumination Standards



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What further separates us from the competition is the fact that we can also assist the design professional by running those calculations from our facility. Like yourself, we take the issue of life safety very seriously and extend our vast knowledge and ability back to the customer to ensure the job you do is designed and installed to save lives.

IES files can be found directly on our website at [www.lightguard.com](http://www.lightguard.com). For point-by-point support, call us at 910-259-1131.

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