framatome

Emergency Lighting

From the Nuclear Parts Center

World's most advanced seismically-qualified nuclear-grade emergency light, delivering up to five times more standby illumination than required.

Challenge

For safe, reliable operations and to meet regulatory requirements, nuclear power plants need standby lighting.

Solution

Framatome is the exclusive channel to the North American nuclear market for the BIRNS Emergency Lighting Fixture-LED (ELF-LED). The ELF-LED is the world's most advanced seismically qualified (tested to IEEE 344*) nuclear-grade emergency station blackout light. This UL listed system delivers up to five times more standby illumination than required by 10CFR50, App. R Sect. III.J., in case of station blackout or loss of AC power, and helps nuclear stations achieve B.5.b (EA-02-026) Post-Fire Safe-Shutdown.

The slim-profiled BIRNS ELF-LED has a mirror-finish front and stainless steel construction that's highly resistant to humidity, acids and other corrosives and is easy to clean. It provides 24 to 40 hours of standby service in case of a power failure and is certified to UL 924, Emergency Lighting Equipment and designed in accordance with NFPA 70, National Electrical Code. The system helps comply with NRC EA-12-049/SECY-11-0124, especially near-term actions 4.1 and 4.2, and 10CFR50.54 (hh)(2).

Applications

Precision engineered for use in containment as well as a number of applications throughout the plant, this powerful system has multiple light, voltage and mounting options and provides safe and reliable emergency illumination. It features integral sealed rechargeable batteries and solid-state charging circuitry, delivering superior performance. Superior battery performance is achieved through factory-programmable PCB. There are five mounting holes for greater mounting flexibility; although, a minimum of three holes must be used.

The ELF-LED has robust stainless steel construction with long-life LED indicator lights. The glare-free sliver on black labeling is easy for operators to read at any angle. The ELF-LED can be tested from any angle with the momentary toggle switch.

Customer benefits

- 24 to 40 hours automatic SSE lighting; Seismic qualification per IEEE-344
- UL listed (E465995)
- Containment-grade materials and construction
- LED lamp operating life of 50,000 hours (L70)
- Low 35W total system power draw
- Slim design (only 90 mm depth)
- Nine conduit knockouts for ease of power cable access
- Voltage input 115-277 VAC
- Sealed maintenance-free batteries (no need to maintain electrolyte levels)

** Recommended Practices for Seismic Qualification of Class 1E Equipment; Seismic margin requirements per IEEE 323-1974 Standard for Qualifying Power Generating Stations.*

Lighting Study

The Nuclear Parts Center can help you optimize your lighting plan with a lighting study. The study utilizes 3D modeling to determine illuminance in various environments, including containment. This tool can assist in your lighting placement, saving labor and costs to optimize the return on your investment. By modelling various surface properties and associated light distribution, our study can help you improve the lighting for critical tasks.

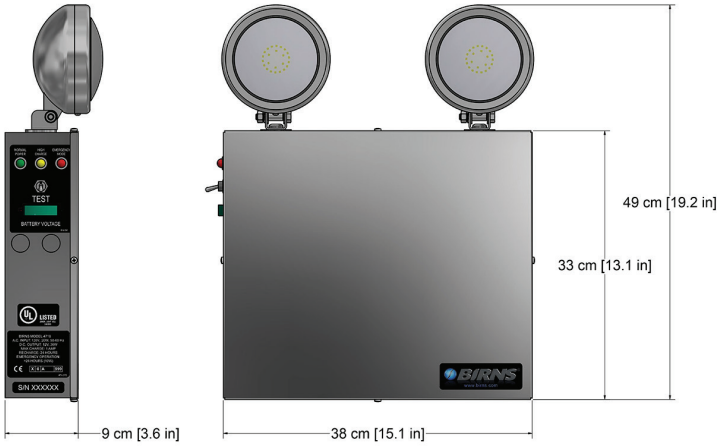
ELF-LED Specifications

ORDERING INFORMATION

Model	Description	Input Voltage
4710-115	Emergency Lighting Fixture, with two attached LED headlights	115
4710-230	Emergency Lighting Fixture, with two attached LED headlights	220/230/240
4710-277	Emergency Lighting Fixture, with two attached LED headlights	277*
4726-115	Emergency Power Unit (for use with remote LED headlights)	115
4726-230	Emergency Power Unit (for use with remote LED headlights)	220/230/240
4726-277	Emergency Power Unit (for use with remote LED headlights)	277*

Remote Headlight Assemblies	
Model	LED Headlights
4630	1*
4631	2
4632	3*

*This configuration not yet UL listed



Weight: 16.6 kg (36.5 lbs.)

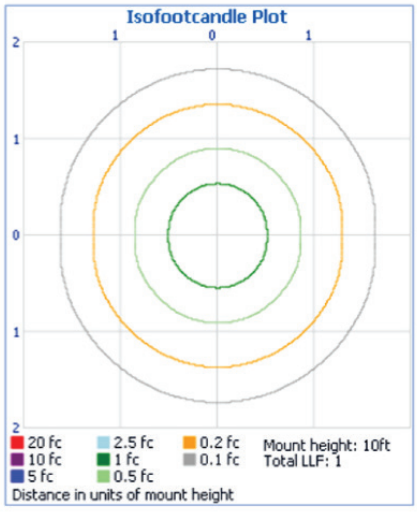
MATERIALS

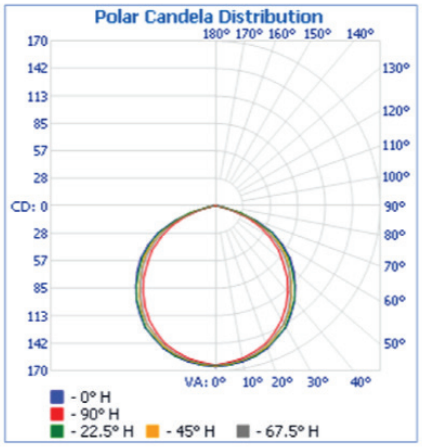
Housing, cover, internal bracketry:	Type 304 Stainless steel
All hardware:	Type 18-8 or 316 Stainless steel
Lamp housings:	300 Series Stainless steel
Battery enclosures:	ABS
Internal wires:	XLPE insulated stranded copper
All labels:	Glare-free mylar (PET)

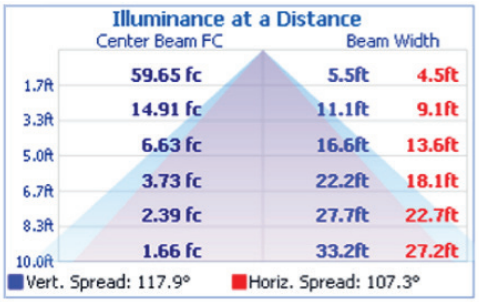
ELECTRICAL AND PHOTOMETRIC DATA (per lamp Ta = 25 degrees Celsius)

Input Voltage, V (typ)	Power (W)	Current (A)	Total Lumens	Maximum Candela	Efficacy lm/W	CRI	Color Temp. (Kelvin)	LED Emitting Color	Beam Angle[1]
12-14 VDC	4.5 W	0.330A	460 lm	165 cd	100	75	5000K~6000K	True White	120° x 105°

[1]Angle of illumination of each headlight







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is **our** everyday **commitment**