



Project: \_\_\_\_\_  
 Type: \_\_\_\_\_  
 Model No: \_\_\_\_\_ Qty: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Notes: \_\_\_\_\_

**Emergency LED Driver, Class 2**  
**Classified for Field Installation**  
**Extreme Cold Environments**  
**6 Watts Minimum Initial Output Power**

Product order numbers: BSL36Cold (w/2-wire ITS)  
 BSL36ColdITS67 (w/IP67 rated ITS)

**Specifications**

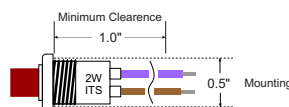
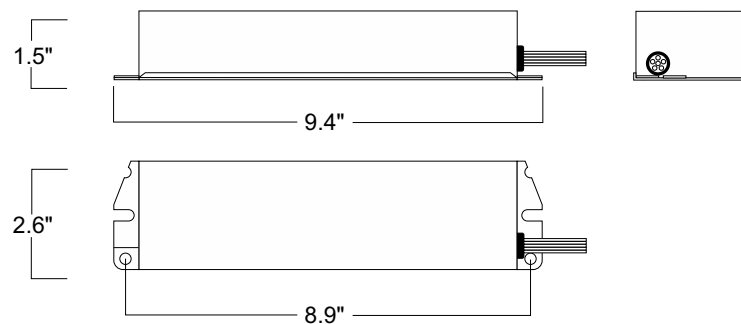
- UL Classified for US and Canada**  
For Field or Factory Installation (Indoor and Damp)
- UL Recognized for US and Canada**  
For Factory Installation (Indoor and Damp)
- Illumination Time**  
90 Minutes
- Full Warranty**  
5 Years (NOT pro-rata)
- Dual Input Voltage**  
120 or 277 VAC, 60 Hz
- AC Input Current**  
120 mA maximum with internal heater on  
50 mA maximum when internal heater off
- AC Input Power Rating**  
13 W maximum with internal heater on  
4 W maximum when internal heater off
- Output Voltage**  
15-52 VDC
- Output Power**  
6.0 W minimum initial (regulated)  
NFPA 101 and NEC 700.12 compliant
- Test Switch/Charging Indicator Light**  
Two-Wire Illuminated Test Switch (2W-ITS)
- Battery**  
High-Temperature, Maintenance-Free  
Nickel-Cadmium Battery  
7- to 10-Year Life Expectancy
- Battery Charging Current**  
280 mA average
- Recharge Time**  
24 Hours
- Temperature Rating (Ambient)**  
-20°C to +55°C (-4°F to +131°F)
- Dimensions**  
9.4" x 2.6" x 1.5"  
(238 mm x 67 mm x 38 mm)  
Mounting Center 8.9" (226 mm)
- Weight**  
2.1 lbs. (.95Kg) - metal w/o conduit

**Benefits:**

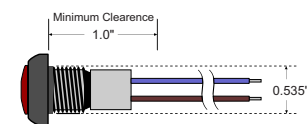
- Classified for field installation - UL 924 Emergency Lighting Compliant
- Operates in extreme cold environments (-20°C to 55°C)
- Class 2 output (UL 1310 Certified)
- Emergency mode minimum initial lumen output of 700 lumens based on 116 lm/W min efficacy
- Compatible with AC drivers and LED loads rated for Class 2
- The output power is automatically adjusted for LED load configurations within the voltage range of 15-52V
- RoHS Compliant

**Dimensions**

9.4" x 2.6" x 1.5" (mounting center - 8.9")



BSL36Cold ships with a 2-wire illuminated test switch/charging indicator light.



BSL36ColdITS67 ships with an IP67 rated illuminated test switch/charging indicator light.



# BSL36 Cold-Pak

## Emergency LED Driver, Cold-Pak for Extreme Temps, 6.0 Watts output power

### APPLICATION

The BSL36 Cold-Pak emergency LED driver works in conjunction with an AC LED driver that has an output current not to exceed 2.5A. The emergency driver consists of a high-temperature nickel-cadmium battery, charger, and electronic circuitry contained in one metal enclosure. The BSL36 Cold-Pak can be used with an LED lighting load configuration resulting in an output voltage in the 15-52V range, delivering an initial minimum power of 6.0 Watts (measured at nominal battery voltage and an ambient temperature of 25°C) for 90 minutes. If used in an emergency-only fixture, no AC driver is necessary. The BSL36 Cold-Pak is suitable for indoor and damp locations and for sealed and gasketed fixtures, including fixtures rated for wet locations. For more information about specific LED and AC driver compatibility, please contact Technical Support.

### OPERATION

When AC power fails, the BSL36 Cold-Pak immediately switches to the emergency mode, operating the LEDs at a reduced lumen output for a minimum of 90 minutes. When AC power is restored, the emergency driver automatically returns to the charging mode. AC LED driver operation is delayed for up to 0.5 seconds to prevent over current of LEDs that would occur if both drivers supply the load at the same time.

### INSTALLATION

The BSL36 Cold-Pak does not affect normal fixture operation and may be used with either a switched or unswitched fixture. If a switched fixture is used, an unswitched hot lead must be connected to the emergency driver. The emergency driver must be fed from the same branch circuit as the AC driver.

### CODE COMPLIANCE

The BSL36 Cold-Pak has been tested by Underwriters Laboratories in accordance with the standards set forth in UL 924, "Emergency Lighting and Power Equipment," and by the Canadian Standards Association (CSA) in accordance with the standards set forth in C22.2 No. 141, "Emergency Lighting Equipment", UL 8750, "Light Emitting Diode (LED) Equipment for use in Lighting Products", including UL 1310 "Class 2 Power Units", and CSA 22.2 No 223-M91, "Power Supply with Extra-Low-Voltage Class 2 outputs". The BSL36 Cold Pak is UL Classified for factory or field installation. Emergency illumination time exceeds the National Electrical Code (NEC), Life Safety Code (NFPA-LSC), National Building Code of Canada (NBC), National Fire Code of Canada (NFC), and UL 90-minute requirements.

### EMERGENCY ILLUMINATION

The BSL36 Cold-Pak operates an LED load, delivering an initial minimum power of 6.0 W of power at nominal battery voltage and ambient temperature of 25°C for a minimum of 90 minutes.

### SPECIFICATION

Emergency lighting shall be provided by using an LED fixture equipped with a Philips Bodine BSL36 Cold-Pak emergency driver. The BSL36 Cold-Pak shall have temperature-control circuitry to fulfill both low-temperature and high-temperature operation. AC LED driver operation is delayed for up to 0.5 seconds to prevent over current of LEDs that would occur if both drivers supply the load at the same time. This emergency driver shall consist of a high-temperature,

maintenance-free nickel-cadmium battery, battery heater, and electronic circuitry contained in one metal enclosure. A 2-wire illuminated test switch (2W-ITS), which combines a solid-state charging indicator light with a single pole test switch that provides a test function, shall be supplied with installation hardware. The emergency driver shall be capable of operating an LED load and of delivering an initial minimum output power of 6.0W at 25°C ambient temperature, following a battery charging period of at least 24 hours. The emergency driver shall be capable of operating the LED load and of delivering an output power exceeding 3.6 Watts at 25°C ambient temperature throughout the of 90 minutes of emergency operation. The BSL36 Cold-Pak is suitable for indoor and damp locations and for sealed and gasketed fixtures, including fixtures rated for wet locations. The BSL36 Cold-Pak shall have a maximum of 13 Watts of input power when the heater is on and a 16.2 Watt-hour battery capacity and shall comply with emergency standards set forth by the current NEC. The emergency driver shall be UL Classified for field or factory installation and UL Component Recognized for factory installation.

### Warranty

Model BSL36 Cold-Pak is warranted for five (5) full years from date of purchase. Please see detailed warranty information on our web site.

**This product is suitable for field installation with suitable LED loads including LED luminaires, DC voltage driven LED replacements for fluorescent lamps and others. There are 4 checks to determine if your luminaire is eligible for field installation.**

1. Ensure the LED load's rated power is greater than or equal to the power output of this emergency LED driver. This is to ensure that this emergency product will not produce more power than the LED load can handle, thus ensuring that the LED load will not be damaged when the system is in the emergency mode.
2. Verify that the forward voltage of the luminaire's LED array is within the limits of this emergency LED driver. The forward voltage of the LED array is commonly designated as Vf and should be found on the luminaire markings, in the luminaire specifications, or imprinted directly on the LED arrays. If multiple LED arrays are to be driven, verify that the total forward voltage is within the limits of this product. Using a voltage meter, it may be possible to directly measure the voltage across the LED arrays when operating from the AC driver.
3. Ensure that the maximum out current of the LED driver does not exceed 2.5A. This is the applied to the emergency driver's blue wire.
4. UL Classified emergency products can be paired with LED luminaires or retrofit kits if found in the Design Lights Consortium database. Go to the Design Lights Consortium website (<http://www.designlights.org>) and search for your LED system by model name or model number. If found in the database, these products are preapproved by UL to be installed together in the field or at a luminaire manufacturer, provided steps are taken to ensure there will be sufficient light output in the end application.

**NOTE:** This product has been designed to reliably interface with a wide selection of LED loads and is electrically compatible with every simple LED array that meets criteria 1 and 2 above. However, compatibility cannot be guaranteed with all current and future LED systems. Compatibility testing of the end-use system is suggested. Please contact the factory with any questions.

**Estimate the egress lighting illumination levels by doing the following:**

- a. Find the efficacy of the LED load, which will be found in the Design Lights Consortium database. This number will be given in lumens per watt (lm/w).
- b. Lumens can be calculated by multiplying the output power of the emergency LED driver by the efficacy of the LED load. In many cases the actual lumen output in emergency mode will be greater than this calculation gives, however it will provide a good estimate for beginning the lighting design of the system.

**(Lumens In Emergency Mode = Lumens per Watt of Fixture X Output Power of Chosen Product)**

$$\text{_____ (Lumens)} = \text{_____ (lm/W)} \times \text{6 (W)}$$

**After installation, it will be necessary to measure light output to ensure it complies with national, state, and local code requirements.**

- c. Using the results of this calculation and industry standard lighting design tools, calculate the anticipated illumination levels in the path of egress.

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