

PHILIPS bodine

Emergency Drivers

LED

BSL310



Project: _____

Type: _____

Model No: _____ Qty: _____

Date: _____

Notes: _____

Emergency driver for LED strips Class 2 output 10 Watts output power

Product order number: BSL3102WM (Polycarbonate case)
See back page for additional model configurations

Specifications

UL Classified

Field or Factory Installation
(Indoor and Damp)

Illumination Time

90 Minutes

Full Warranty

5 Years (NOT pro-rata)

Universal Input Voltage

120-277 VAC, 50/60 Hz

AC Input Current

60 mA Maximum

AC Input Power Rating

4.0 W Maximum

Output Current and Voltage

Selectable (See Table 1)

Without Selector: minimum 200 mA, 30-50 VDC,
minimum 300 mA over optimized range (30-34 VDC)

With Selector: minimum 400 mA, 10-29 VDC

Output Power

10.0 W (Maximum)

Test Switch/Charging Indicator Light

Illuminated Test Switch

Battery

High-Temperature, Maintenance-Free
Nickel-Cadmium Battery
7- to 10-Year Life Expectancy

Battery Charging Current

180 mA

Recharge Time

24 Hours

Temperature Rating (Ambient)

0°C to +55°C (32°F to 131°F)

Dimensions (BSL310)

14.5" x 2.25" x 1.18" (369 mm x 58 mm x 30 mm)
Mounting Center 14.0" (356 mm)

Weight

2.25 lbs. (1.0 kg) - polycarbonate

Benefits:

- Class 2 output (UL 1310 Certified)
- Emergency mode lumen output of up to 1300 lumens
- Universal input (120-277 VAC)
- 2 wire input reduces wiring errors
- Compatible with a variety of LED strip manufacturers
- Compatible with AC drivers and LED loads rated for Class 2
- Selectable output
- RoHS compliant

Dimensions

14.5" x 2.25" x 1.18" (mounting center - 14.0")

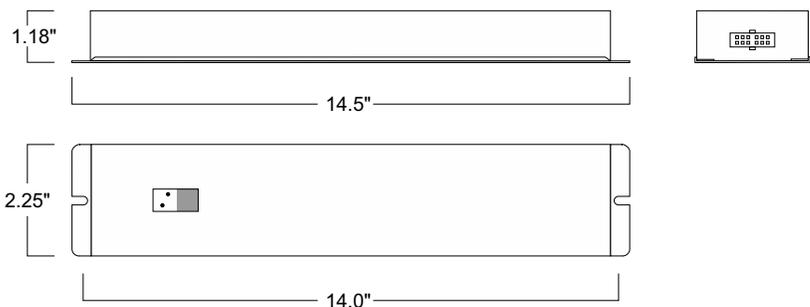
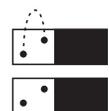


Table 1 Load Select Options

Max Load Voltage	Load Select
10V - 29V	Connected
30V - 50V	Not onnected



BSL310

Emergency LED Driver for Linear LED Strips, Class 2 Output

Application

The BSL310 universal input (120–277 V) emergency LED driver works in conjunction with an AC LED driver that has an output current not to exceed 3.0 A. The emergency driver consists of a high-temperature nickel-cadmium battery, charger and electronic circuitry in one case. The BSL310 can deliver up to 10 watts to an LED load (measured at nominal battery voltage) for 90 minutes. If used in an emergency-only fixture, no AC driver is necessary. The BSL310 is suitable for indoor and damp locations. For more information about specific LED and AC driver compatibility, please call the factory.

Operation

When AC power fails, the BSL310 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. A patented circuit delays AC LED driver operation for up to 5 seconds to prevent over current of LED's that would occur if both drivers supply the load at the same time.

Installation

The BSL310 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. Per UL requirements, the polycarbonate BSL310 must be enclosed if remote mounted outside of the fixture. Installation is not recommended with fixtures where the ambient temperature may fall below 0° C. The product is suitable for installation in sealed and gasketed fixtures. For LED loads rated less than 30V, connect the load select per Table 1 for proper operation and optimum performance.

Emergency Illumination

The BSL310 operates an LED load of up to 10.0 W at nominal battery voltage for a minimum of 90 minutes.

Specification

Emergency lighting shall be provided by using a LED fixture equipped with a Philips Bodine BSL310 universal

input (120–277 V) emergency driver. A patented circuit delays AC LED driver operation for up to 5 seconds to prevent over current of LED's 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, charger and electronic circuitry contained in one case. An illuminated test switch (ITS) to monitor charger and battery and installation hardware shall be provided. The emergency driver shall be capable of delivering up to 10 watts to an LED load for a minimum of 90 minutes. The BSL310 is suitable for indoor and damp locations. The BSL310 shall have a maximum of 4.0 watts of input power and a 24.0 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. See instructions below.

Warranty

The BSL310 is warranted for five (5) full years from date of purchase (NOT pro-rata). 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 3.0A. 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.

Optional models: Call factory for additional models and configurations

BSL310C (Metal case, with conduit)	Order no. BSL310C2WM
BSL310M (Metal case, no conduit)	Order no. BSL310M2W
BSL310C-DF (Metal case, dual conduit)	Order no. BSL310CDFM

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. Determine the initial power output of the emergency LED driver. This is given in Figure 1 below.
- c. 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.

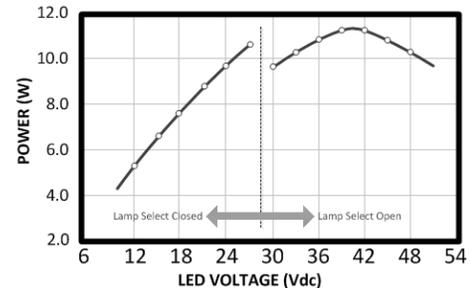
(Lumens In Emergency Mode = Lumens per Watt of Fixture X Output Power of Chosen Product)

$$\text{_____ (Lumens)} = \text{_____ (lm/W)} \times \text{10 (W)}$$

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

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

Figure 1



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