

LED emergency lighting for field installation

LED technology is a new frontier and for most in the lighting industry, there is a very real learning curve as we explore the intricacies, applications, limitations and potential of this amazing light source. Despite the curve, use of LED lighting for general lighting purposes is growing. As with other types of lighting, LED lighting must meet the life safety code requirements for emergency illumination. LED fixtures serving as emergency units must, therefore, meet UL 924 Emergency Lighting requirements and provide at least 90 minutes of emergency lighting. Philips Bodine emergency LED drivers allow these fixtures to meet or exceed code.

Until recently, most emergency LED drivers were listed as UL Component Recognized as factory install only or, UL Classified. A Classified listing requires both operating compatibility and verification of fixture with Design Lights Consortium (DLC) database before the emergency driver can be field-installed in the fixture. The restrictions associated with these listings makes it more difficult for contractors or electricians to install an emergency LED driver in the field for new or retrofit applications.

Philips Emergency Lighting continues to lead the industry by providing the solutions required by lighting professionals to take advantage of this innovative technology.

Philips Emergency Lighting now offers Philips Bodine fully ETL Listed, field-installable emergency LED drivers. A wide variety of Philips Bodine emergency LED drivers are ETL Listed and are the first – and currently only – emergency LED drivers with this listing for field installation. All other manufacturer EM drivers are suitable for factory installation only or carry a UL Classified status. We have emergency LED drivers that carry these listings too.

Fully ETL Listed, field-installable emergency LED drivers:

- Eliminates Factory installed up charges for factory installation.
- Eliminates the legwork involved in the field installation process for investigating the DLC compliance for UL Classified emergency LED drivers

To use a UL Classified emergency LED driver, one must ensure that:

1. The luminaire that will receive the emergency LED driver is actually in the DLC database. If it is not listed in the database, you can't install the EM driver in the field.
2. The luminaire must be compatible with the emergency LED driver. Even though the luminaire is listed in the database, does not mean it is compatible.

Some UL classified emergency drivers are only compatible with their own brand of luminaires.

The ETL Listing for emergency drivers is superior to the UL Classified Listing and simplifies the process for field installation.



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Emergency Drivers

Field Installation
Selection Guide



Simplify your project with field installation

Emergency drivers for LED lighting applications



Start with these easy steps to select the proper Emergency LED driver for your fixture.

Field-Install Specification Guide

Identify the fixture being utilized and record the specification data*:

1. Make and model _____
2. Load Voltage of LED array(s) _____ Vf
3. LED Load rated power _____ Watts
4. Output current of the AC LED driver into LED Load as applied _____ Amps

Load Voltage

Identify the LED's load voltage (Vf)

This is the total forward voltage (Vf or stacked voltage) of the luminaire's LED array(s). This information can be found on the product spec sheet, labeling, or on the LED array(s), or by calling the luminaire tech support/Product Mgr., or the customer service department.



Locate your fixture's (LED array) total load voltage at the top of the chart - **Approximate Load Voltage** - and find the available EM LED drivers for this voltage in the selected column. The type of luminaire and application/location will help determine which EM driver to use.

Wattage (W)

Verify maximum power of LED load

The LED load's rated power must be greater than or equal to the output of the selected EM LED driver.

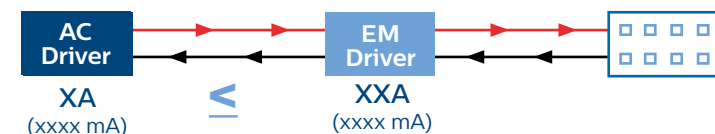
LED load (W) ≥ to EM driver power output (W)

Designated as **Power (W)** for each EM LED driver on the chart. Use the chart to ensure the LED load's rated power (W), is greater than or equal to the EM Driver power output (W).

Current (from AC driver)

Maximum current into EM driver

See the emergency LED current limit in the column **Max. AC Driver Output** on the chart.



The maximum current from the AC driver must be less than or equal to the current the EM driver can accept. Use the chart to find the **Max. AC Driver Output** to confirm the maximum acceptable current for each EM driver.

Lumens

Verify emergency lumen output

Find the approximate emergency lumen output for each EM driver on the chart or calculate.

Lumens = lm/w X (W)

Emergency illumination (lumens) can be calculated by multiplying the efficacy of the LED load (measured in lm/w) by the output power of the emergency driver (W).

Emergency LED Driver	Class Rating	Max. AC Driver Output (A)	Specs	Approximate Load Voltage (LED Array Vf)																	
				3 V	6 V	10 V	12 V	15 V	18 V	20 V	24 V	28 V	30 V	33 V	36 V	39 V	42 V	45 V	48 V	50 V	52 V
BSL17C-C2 BSL17-C2	Class 2	1.5A	Power (W) ~ Lumens					7.2 840	7.2 840	7.3 840	7.3 840	7.3 840	7.3 840	7.3 840	7.2 840	7.2 840	7.1 830	7.2 830	7.1 820	7.1 820	
BSL17C-C2ST Self-testing	Class 2	1.5A	Power (W) ~ Lumens					7.2 840	7.2 840	7.3 840	7.3 840	7.3 840	7.3 840	7.2 840	7.2 840	7.1 830	7.2 830	7.1 820	7.1 820		
BSL310 Red poly case	Class 2	3.0A	Power (W) ~ Lumens			4.4 510	5.7 660	7.0 810	8.3 960	9.5 1,100	10.6 1,230	11.7 1,350	9.6 1,100	10.2 1,180	10.8 1,250	11.3 1,300	11.4 1,320	11.0 1,270	10.3 1,180	9.8 1,130	
BSL310M (C or C-DF)	Class 2	3.0A	Power (W) ~ Lumens			4.4 510	5.7 660	7.0 810	8.3 960	9.5 1,100	10.6 1,230	11.7 1,350	9.6 1,100	10.2 1,180	10.8 1,250	11.3 1,300	11.4 1,320	11.0 1,270	10.3 1,180	9.8 1,130	
BSL310LP BSL310LPST	Class 2	3.0A	Power (W) ~ Lumens					9.9 1,140	10.3 1,190	10.5 1,210	10.4 1,200	10.4 1,200	10.3 1,190	10.3 1,180	10.2 1,180	10.5 1,220	10.4 1,200	10.4 1,200	10.2 1,180	10.2 1,180	10.1 1,170
BSL20LV	Class 2	5.0A	Power (W) ~ Lumens							21.3 2,450	21.4 2,470	21.5 2,480	21.5 2,480	21.6 2,490	21.5 2,480	21.5 2,480	21.4 2,470	21.4 2,470	21.4 2,470	21.3 2,450	
BSL36 Cold-Pak -20°C to 55°C	Class 2	2.5A	Power (W) ~ Lumens					6.0 690	6.0 690	6.0 690	6.0 690	6.0 690	6.0 690	6.0 690	6.0 690	6.0 690	6.0 690	6.0 690	6.0 690	6.0 690	
BSL10 Cold-Pak -20°C to 55°C	Class 2	1.25	Power (W) ~ Lumens							14.6 1,690	14.6 1,690	14.6 1,690	14.6 1,690	14.6 1,680	14.5 1,670	14.5 1,670	14.3 1,650	14.7 1,690	14.6 1,680	14.5 1,680	14.4 1,660

Listing*	Typical Fixture Type	Location/Application
UL ETL		
Pending	●	Recessed downlight, Surface, Pendant Indoor, Damp
Pending	●	Recessed downlight, Surface, Pendant Indoor, Damp
●		Linear strip, Recessed, Surface, Pendant Indoor, Damp
●	●	Linear strip, Recessed, Surface, Pendant Indoor, Damp
Pending		Linear strip, Slim/Low-profile Recessed, Surface, Pendant Indoor, Damp
	●	High output / High bay, Linear, Surface Indoor, Damp
●		Recessed downlight, Surface, Bollards Indoor, Damp, Covered exteriors, Extreme temperatures
	●	Recessed downlight, Surface, Bollards Indoor, Damp, Covered exteriors, Extreme temperatures

Emergency LED Driver	Class Rating	Max. AC Driver Output (A)	Specs	Approximate Load Voltage (LED Array Vf)																	
				45V	48V	50V	54V	60V	66V	72V	78V	84V	90V	96V	102V	108V	114V	120V	126V	130V	
BSL17 BSL17C	non Class 2	1.5A	Power (W) ~ Lumens		7.3 850	7.3 850	7.4 850	7.4 850	7.4 850	7.4 850	7.4 850	7.4 850	7.4 850	7.4 850	7.4 850	7.4 850	7.4 850	7.4 850	7.3 850	7.3 850	
BSL20MV	non Class 2	5.0A	Power (W) ~ Lumens				21.1 2,430	21.2 2,440	21.2 2,450	21.3 2,460	21.4 2,460	21.4 2,470	21.4 2,460	21.5 2,470	21.5 2,470	21.4 2,470	21.5 2,470	21.5 2,470	21.4 2,470	21.5 2,480	

Listing*	Typical Fixture Type	Location/Application
UL ETL		
	●	Recessed downlight, Surface, Pendant Indoor, Damp
	●	High output / High bay, Linear, Surface Indoor, Damp

Emergency LED Driver	Class Rating	Max. AC Driver Output (A)	Specs	Approximate Load Voltage (LED Array Vf)																	
				125V	129V	132V	138V	144V	150V	156V	162V	168V	174V	180V	186V	192V	198V	200V	205V	210V	
BSL20HV	non Class 2	5.0A	Power (W) ~ Lumens		21.7 2,500	21.7 2,500	21.8 2,510	21.8 2,510	21.7 2,500	21.8 2,510	21.7 2,500	21.7 2,500	21.8 2,510	21.9 2,520	21.9 2,520	21.9 2,520	21.9 2,520	21.9 2,520	21.9 2,530	21.9 2,530	

Listing*	Typical Fixture Type	Location/Application
UL ETL		
	●	High output / High bay, Linear, Surface Indoor, Damp

Note: Lumens indicated on this chart are calculated based on a typical LED fixture lumen output of 115 lumens per Watt Load. In many cases the lumen output in emergency mode will be greater due to the actual efficacy of the LED Load being utilized. Use the formula below to calculate actual lumens in emergency mode.

$$\text{Lumens In Emergency Mode} = \text{Lumens per Watt of Fixture} \times \text{Output Power of Chosen EM Driver}$$

$$\text{_____} = \text{_____ (Lm/W)} \times \text{_____ (W)}$$

Notes

* The luminaire manufacturer can help with the details of their fixture by calling technical/customer support.

ETL Listed emergency drivers can be field installed with LED luminaires that are compatible.

UL Classified emergency drivers can be field installed with LED luminaires that are compatible AND the luminaire must be listed in the Design Lights Consortium (DLC) luminaire database.

* Check individual product specification sheets for Listing details regarding US and Canada, and other product details including specifications, dimensions, and installation options such as conduit, stud-mount, and test switches.

