bodine

Emergency Backup

Inverter

ELI-S-100

Project:

Location:

Cat.No:

Type:

Lamps: Qty:

Notes:

Sinusoidal (Sine Wave) Output
100 VA Maximum Output Power
Automatic Output Voltage Select
Automatic Dimming (0 to 10V) of Connected Load

Product order number	ELIS10
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Specifications

UL Listed for US and Canada
Listed to UL924 and tested to CSA 22.2 No. 141
Field or Factory Installation (Indoor and Damp)
Output Class 2 Compliant

Maximum Connected Load Power
400 W (consult factory)

Warranty
5 Years Full Coverage (not including battery)
3 Year Battery warranty, plus 7 years additional pro-rating

Illumination Time
90 Minutes

Input Charging Current
370 mA Max Charging

Output Voltage
120 or 277 VAC, 60Hz, automatically selected

Output Power
Maximum output: 100VA
Minimum load P.F +/- 0.75

Charging Indicator Light/Test Switch
Integrated LED/test switch

Battery
Maintenance-Free Sealed Lead Acid Battery

Recharge Time
24 Hours

Temperature Rating (Ambient)
32° F to 104° F (0° C to 40° C)

Dimensions
12.56" x 9.81" x 4.68"
(319 mm x 249 mm x 119 mm)

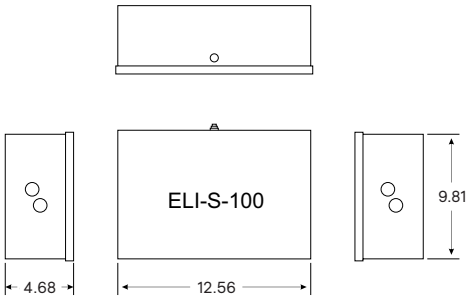
Weight
25 lbs. With Batteries installed

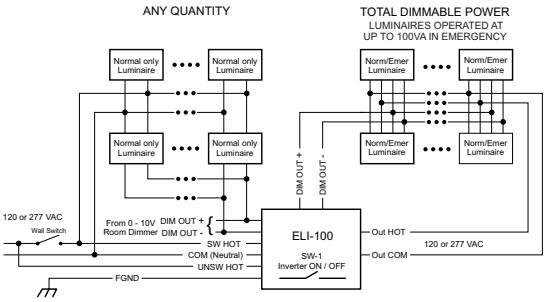
Benefits:

- Automatic output voltage select
- Automatic dimming (0 to 10V) of connected load
- Adjustable maximum dim setting
- Works with LED and fluorescent fixtures
- Ideal for (but not limited to) screw-base LED lamps
- Compatible with AC (line voltage) driven TLED lamps
- Remote-mounting up to 250 feet maximum
- Meets CEC Title 20 efficiency standards

Dimensions

12.56" x 9.81" x 4.68" (319 mm x 249 mm x 119 mm)





ELI-S-100 Sinusoidal backup inverter with dimming capability

Application

The Bodine ELI-S-100 Emergency Lighting Inverter works in conjunction with a fluorescent or LED fixtures to create an emergency lighting system. The ELI-S-100 operates a maximum load of 100VA at unity power factor. It allows the connected fixture(s) to be on, off, switched or dimmed without affecting emergency operation. Each unit consists of two sealed lead acid batteries, charger and electronic circuitry in one steel case. The ELI-S-100 provides power to the input side of the fixture(s), including AC ballast/driver, and can be used with indoor or outdoor emergency fixture applications. The ELI-S-100 is not suitable for use with HID or incandescent sources nor is it rated for an outdoor mounting location.

Operation

Upon failure of normal power, the ELI-S-100 instantly begins providing emergency power to the connected lighting load for a minimum of 90 minutes. A low voltage disconnect circuit protects the inverter batteries from damage by deep discharge during prolonged power failures. When normal power is restored, the ELI-S-100 automatically returns to charge mode. The battery capacity is fully restored in 24 hours.

Dimming

The ELI-S-100 features a dimming control output of 0-10 volts. This dimming capability allows a higher power fixture to operate at a dimmed 100VA maximum emergency-mode lighting level - or, alternately, it allows a string of multiple fixtures to be driven in emergency mode at a combined 100VA maximum. For example, eight 50W (input) LED fixtures may be connected to one ELI-S-100 and automatically dimmed for emergency operation to 20% of normal power input, with each LED fixture supplying approximately 10W of output power.* The emergency mode output dimming voltage is automatically controlled by the ELI-S-100 electronic circuitry to maintain 100VA output throughout an emergency event. The ELI-S-100 passes the normal room dimming control voltage (0-to-10V) where used, in the Normal (non-Emergency) mode so normal dimming operation of the connected fixtures is not affected. The maximum emergency mode output dimming voltage is also field settable in 5 steps to provide nominally 20%, 40%, 60%, 80%, or 100% light output. See product installation instructions for more information.

*Note: The ELI-S-100 Emergency Lighting Inverter (ELI) can operate a total non-dimmable load from 0-100VA. For a dimmable load, this is accomplished by dimming the connected luminaires to a reduced power level while they are being operated as emergency lighting sources during power outages. To calculate the total number of connected luminaires requires the determination of their input power levels at the required level of dimmed light output. LED drivers are not 100% efficient and the input power drawn from the AC line is typically 120% of the LED load power. The typical efficiency shown on most datasheets for drivers is at full light output. This efficiency goes down as the driver is dimmed and this data is typically not published. This is also true of the driver power factor.

Another issue is the amount of “start-up power” required to start the input stages of the LED driver within the luminaire. This is not the same as the “inrush current”, which is a very short AC line current draw that lasts only for a few tens of microseconds. The driver input start-up power can last up to 100 milliseconds whenever AC power is applied to the driver from any source, normal or emergency, and is typically much higher than the normal operating power. This is usually not published by the driver manufacturer and can only be arrived at through laboratory testing.

Since the LED driver start-up power is higher than the steady-state operating power, this affects the total number of connected emergency luminaires. While this short-term phenomenon has been addressed in the design of the ELI-S-100, there are still limitations for any lighting design application. The ELI-S-100 is specified as capable of providing emergency power up to a 400W of connected, dimmed luminaires. Even so, in the lighting design, it is difficult to determine the total number of connected luminaires because the start-up power may greatly exceed the steady-state operating power. Contact the factory for questions concerning your specific application.

Installation

The ELI-S-100 does not affect normal fixture operation and may be used with a switched or unswitched fixture. It can be installed in close proximity to the fixture or remote from the fixture (up to 250 feet).

Emergency Illumination

The ELI-S-100 supports a 100VA emergency illumination for a minimum of 90 minutes.

Specification

Emergency lighting shall be provided by using a standard fixture equipped with a Bodine ELI-S-100. Each unit consists of two maintenance free sealed lead acid batteries, charger and electronic circuitry contained in one 12.56” x 9.81” x 4.68" metal case. The ELI-S-100 unit shall be capable of powering any fluorescent or LED lighting fixture rated at a maximum of 100VA at 0°C to 40°C for a minimum 90 minutes regardless of local switch position. The ELI-S-100 shall allow the connected fixture(s) to be on, off, switched or dimmed without affecting emergency operation. The ELI-S-100 unit shall exceed emergency standards set forth by the current NEC and CEC. It shall be UL Listed for factory or field installation.

Warranty

The ELI-S-100 is warranted for five (5) years from the date of manufacture. This warranty excludes the batteries, which have a warranty of three (3) years with an additional seven (7) year pro-rated warranty. This warranty covers only properly installed Bodine ELI-S-100 emergency units used under normal conditions. For the warranty period, Bodine will, at its option, repair or replace without charge a defective inverter provided it is returned to the factory transportation prepaid on inspection will be conducted to determine if the unit is defective under the terms of the warranty. Repair or replacement, as stated above, shall constitute the purchaser’s exclusive warranty, which does not extend to transportation, installation, labor or any other charges; nor does it apply to any equipment of another manufacturer used in conjunction with the inverter.

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