EMERGENCY INVERTER

WP-EWG-040U | for LED High Bay Lights

TRULY GREEN SOLUTIONS

General Description

The Emergency Inverter for LED High Bay Lights, listed for field and factory installation, provides constant power output to the load during emergency mode operation. They maintain illumination in the emergency mode for a minimum of 90 minutes. It is an ideal emergency solution for Round/Circular LED high bay fixtures.

IP65

BC

c UL us LISTED

FC

Self Diagnostic

Features and Benefits

- Constant power output
- Universal input range
- Integrated junction box design
- Field and factory installation
- IP65 for dry, damp and wet location
- 40W & 90mins durable emergency operating time
- Surge L-N:3KV; L&N-PE:3KV
- Protection: Over-Voltage ,Short-Circuit, Over-Load, Open-Circuit
- LiFePO4 safety batteries
- Link to the input of LED drivers
- High PF even during charging
- Safety rope prevent from dropping while installation
- Remote test from a handheld controller
- Self-diagnostic every month and year
- RoHS compliant
- 5 years warranty

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Ordering Information

Model	Output Voltage	Related Output Power	Battery Capacity	Emergency Time
WP-EWG-040U	120-200 Vdc	40 W	96 WH	90 mins

Input

Parameter	Min.	Typical	Max.	Remarks
Rated Input Voltage (Vac)	120	--	277	
Input Voltage Range (Vac)	90	--	305	
Input Frequency Range (Hz)	47	50/60	63	
Max. Input Current（A）	--	--	0.2	120Vac, charging
Max. Input Power（W）	--	--	15	120Vac, charging
Input Surge Current（A）	--	--	10	277Vac/60Hz, cold start
Standby Power (W)	--	--	0.8	277Vac/60Hz, charged
Power Factor	0.9	--	--	Vin=120Vac/60Hz (charging)
THD	--	15%	20%	Vin=120-277Vac/60Hz (charging)
Max. Load(W)	--	--	300	Min. dim power have to lower than 36W

Output

Parameter	Min.	Typical	Max.	Remarks
No Load Output Voltage (Vac)	--	--	250	
Emergency Output Power (W)	36	--	40	Constant power output
Instantaneous Output Power (W)	--	--	100	Emergency, cold start peak output, last time 10 seconds
Power-up Time (S)	--	--	0.5	120Vac, charging
Response Time (S)	--	--	5	Switch from mains supply cuts to Emergency output
Emergency Duration Time	90	--	--	
Output Voltage (V)	120	--	200	approximate value, varies with the battery voltage
Max. Load Current (mA)	--	--	350	Determined by the LED load, load current=output power/ output voltage

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Battery

Name	Parameter
Battery Type	LiFePO4
Battery Capacity	6000mAh/16V 96WH
Charging Time (H)	24 Hours
Max. Charging Interval (M)	12 Months

Protection Characteristics

Parameter	Status	Min.	Typical	Max.	Remarks
Over-Voltage Protection (V)	●	--	--	250	
Short-Circuit Protection (mA)	●	--	--	--	Power Off
Open-Circuit Protection (mA)	●	--	--	--	Abnormal Indicator Light
Over-Load Protection （W）	●	--	--	45	Power Off
Over-Temperature Protection (℃)	x	x	x	x	

Environment Characteristics

Parameter	Min.	Typical	Max.	Remarks
Work Temperature (℃)	10	--	50	Discharge time >=90mins
Work Humidity (RH)	10%	--	90%	
Storage Temperature (℃)	-20	--	65	
Storage Humidity (RH)	5%	--	95%	
Altitude (m)	-50	--	3000	
Cooling Method	--	--	--	Air natural cooling

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Other Characteristics

Parameter	Min.	Typical	Max.	Condition
Lifetime (H)	50000	--	--	
MTBF (H)	--	200000	--	277Vac, Ta 25℃ (MIL-HDBK-217F)
Max. Installation Height (ft)	--	--	36	
Weight (g)	3550	3700	3850	
Dimension (Inch)	L4.92*W4.92*H11.22			Excluding the ring and hook

Remarks:

If not specified, all the above parameters are measured in the full load state of the product at Ta 25℃.

Safety Regulation

Certificate	Approval Marks	Standard	Valid	Remarks
UL	c UL us LISTED	UL924	✓	North America
cUL		CAN/CSA-C22.2 NO. 141	✓	Canada
BC	BC	CEC Title 20	✓	California

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Electromagnetic Compatibility

EMI/EMS Items	Standards	Judgement Basis
Conduction CE	FCC Part 15	Class B
Radiation RE	FCC Part 15	Class B
Harmonic Wave	IEC/EN 61000-3-2	Class C
Surge	UL924	L-N :3KV/2Ω，L&N-PE:3KV/2Ω
Ring-wave	ANSI C62.41	2.5KV/2Ω

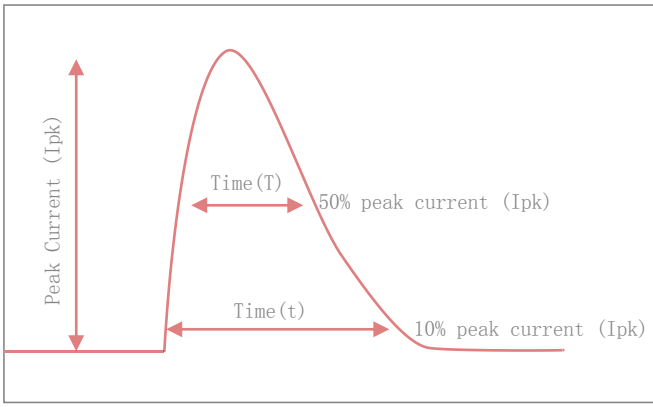
Safety Test Projects

Safety Test		Technical Requirements	Condition
Voltage Withstand	Input-Ground	1500Vac/5mA/60S	No breakdown, no flashover
	Output-Ground	1500Vac/5mA/60S	No breakdown, no flashover
Insulation Resistance		≥100Mohm	Input-Ground, Test Voltage 500Vdc
Leak Current		≤0.75mA	277Vac
Ground Resistance		≤0.1Ω	25A/1min

Remarks:

1. The power supply is considered as a component to be used in combination with the terminal equipment. Because the Emergency Inverter is affected by the whole device, the terminal equipment manufacturer shall confirm Emergency Inverter with the whole device.
2. During the voltage test, please short circuit the L-N, the positive and negative of output line, and the positive and negative of dimming line

Characteristic Curve



Input Surge Current

Input Voltage	Ipk Peak Current	T (@10% Ipk)	T (@50% Ipk)
120Vac	6A	700uS	500uS
277Vac	10A	400uS	200uS

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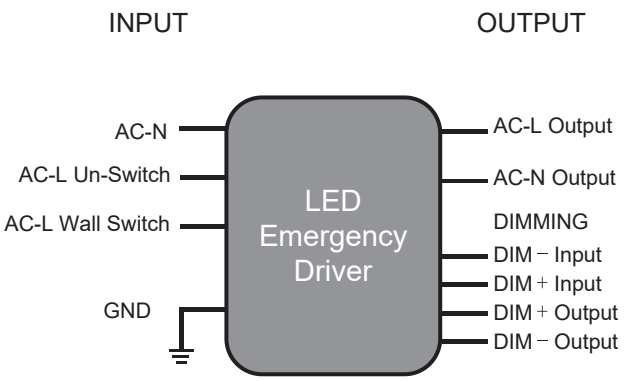
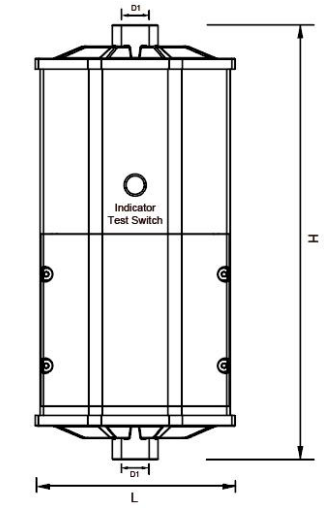
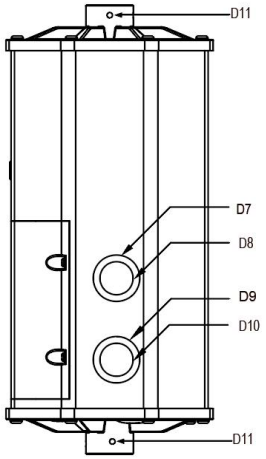
Structure

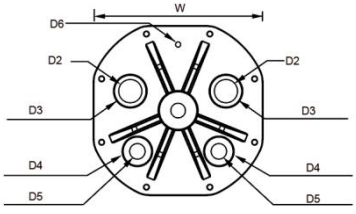


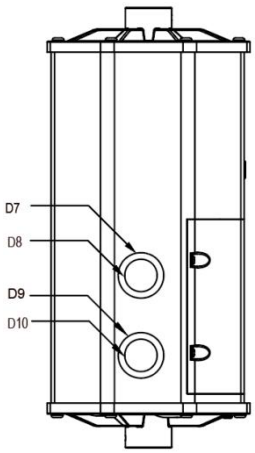
GND	UL1015 18AWG Green 152mm
AC-N	UL1015 18AWG White 152mm
AC-L Un-Switch	UL1015 18AWG Black 152mm
AC-L Wall Switch	UL1015 18AWG White in Black 152mm
AC-L Output	UL1015 18AWG Blown 152mm
AC-N Output	UL1015 18AWG Blue 152mm
DIM+ Input	UL1015 18AWG Purple 152mm
DIM- Input	UL1015 18AWG Grey 152mm
DIM+ Output	UL1015 18AWG Red 152mm
DIM- Output	UL1015 18AWG Yellow 152mm

Name	Code	Spec.
Length	L	4.92 Inch
Width	W	4.92 Inch
Height	H	11.22 Inch
Fixed Hole	D1	M12
Fixed Hole	D2	G(PF) 1/2
Fixed Hole	D3	1.26 Inch
Fixed Hole	D4	0.87 Inch
Fixed Hole	D5	G(PF) 1/4
Fixed Hole	D6	6#-32*1/4
Fixed Hole	D7	1.26 Inch
Fixed Hole	D8	NPT 1/2
Fixed Hole	D9	1.57 Inch
Fixed Hole	D10	NPT 3/4
Fixed Hole	D11	6#-32* 5/8









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Indicator

Parameter	Remarks
Solid Green ON	System OK/AC OK
None LED Off	System NG, battery voltage is too low, LED fixture is Short
Flashing Green (1s on, 1s off, cycling)	Battery not detected, check battery connection
Flashing Green (0.1s on, 5s off, cycling)	The Emergency inverter working in Emergency mode
Slow Flashing Green (5s on, 5s off, cycling)	Discharge time is less than 90 minutes (Self-diagnostic test), LED fixture is Open Circuit, Over Load
Flashing Green (1s on, 1s off, 5 times)	Disable Self-diagnostic test system
Flashing Green (1s on, 1s off, 3 times)	Enable the Self-diagnostic test system

Diagnostic System

- **Manual Diagnostic System**
  Under the normal charging mode, after the battery is charged for 12 hours or fully charged, long press the test button for 3S and hold it, enter the manual test mode, release the button to exit the manual diagnostic mode.

- **Close / Start Self-diagnostic System**
  Under the Normal Charging Mode, press the button twice in two seconds, then press the button longer than 2 sec. and less than 5 sec, then press the button twice in succession, the indicator light will be on and off for 5 times (1 sec. interval), means disable the Self-Diagnostic Test System successfully. If you want to enable the Self-Diagnostic Test System, repeat the operation, the indicator light will be on and off for 3 times (1 sec. interval), means “Enable”.

- **Enter Sleep Mode**
  Under Emergency Mode, press the test button 3 seconds, the Backup micro inverter will enter Sleep Mode (Storage and transportation),and activate it by connecting to AC power.

- **Reset**
  Under abnormal status, press and hold the test button >5 sec., power off, and re-connect to mains supply, the System will be reset.

- **Monthly Self-diagnostic**
  In the normal charging mode, the system performs a monthly self-diagnostic test every 30 days, the system switches to the emergency mode for 30 sec., and automatically switches back to the normal charging mode after 30 sec.

- **Yearly Self-Diagnostic**
  In the normal charging mode, the system switches to the emergency mode every 360 days (after 11 Monthly self-diagnostic test) and works until the end of discharge. Automatically switches back to normal charging mode after discharge.

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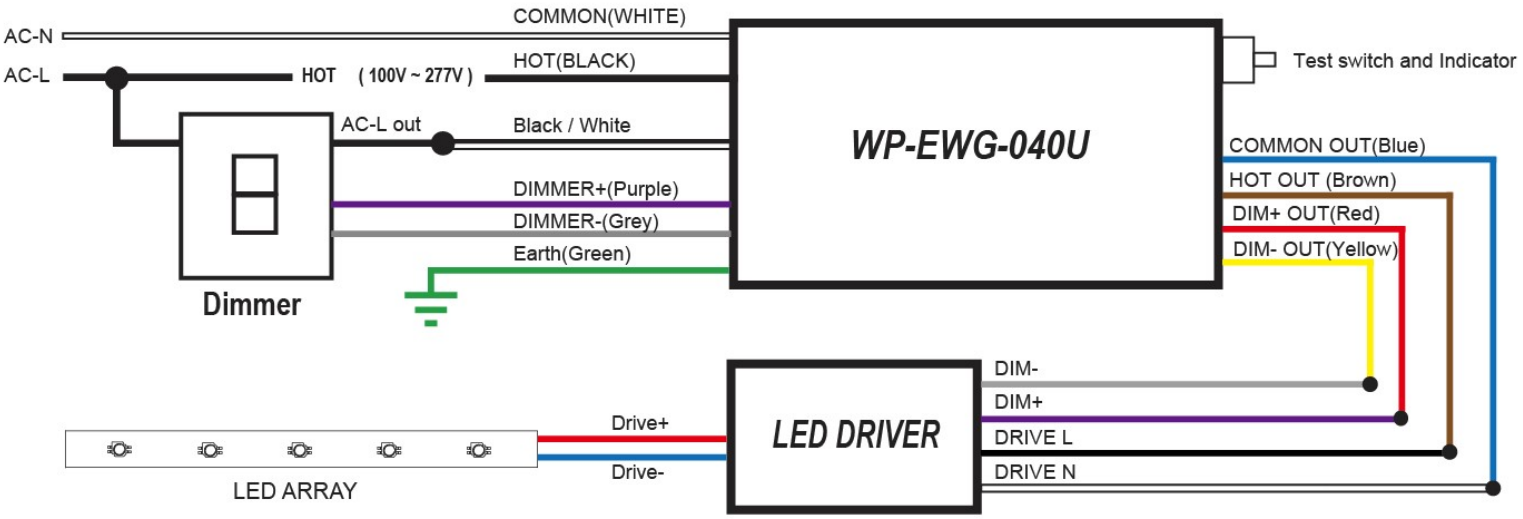
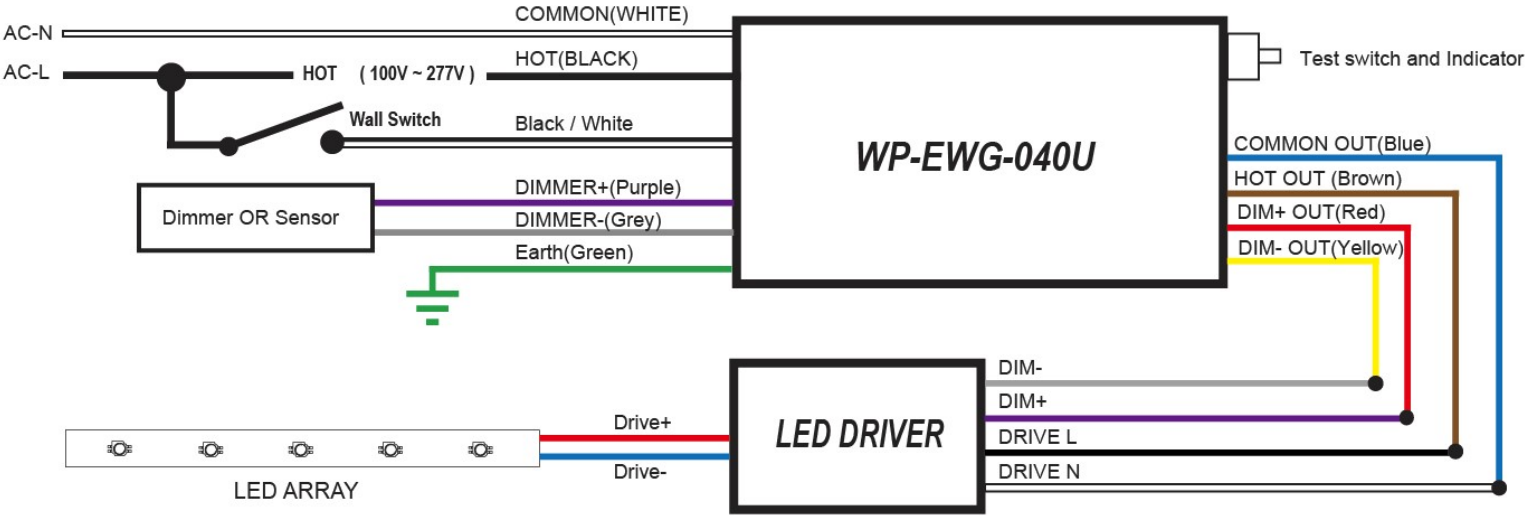
Wiring Diagram

(A): Dimmer Switch



(B): Ordinary Switch



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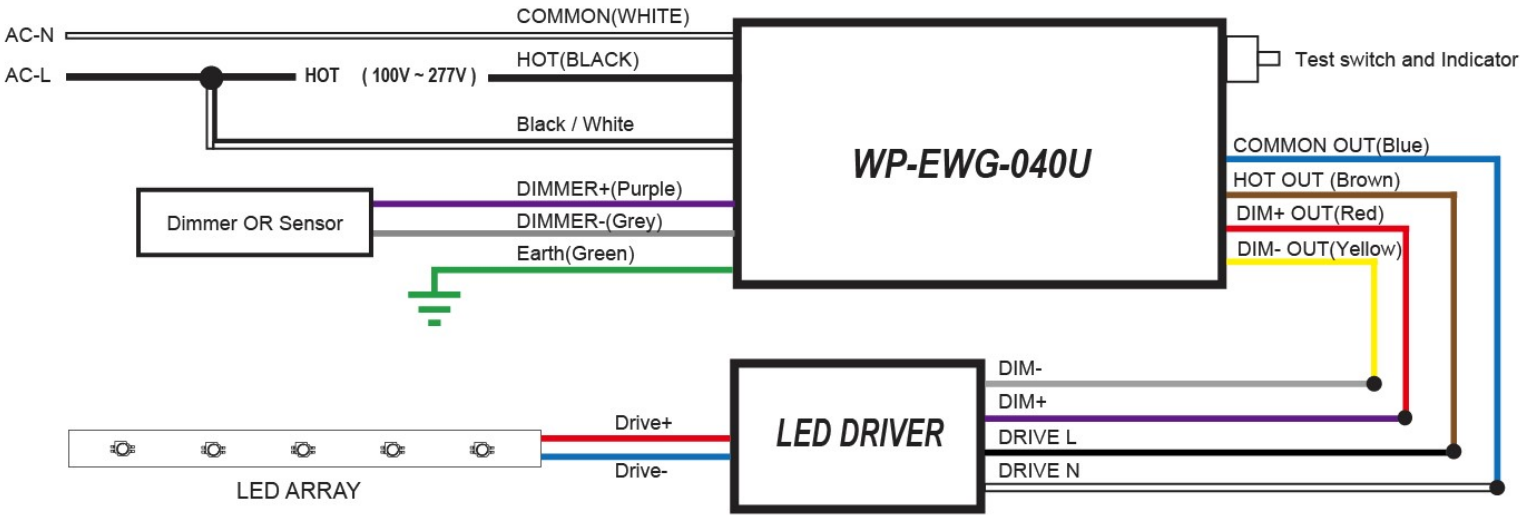
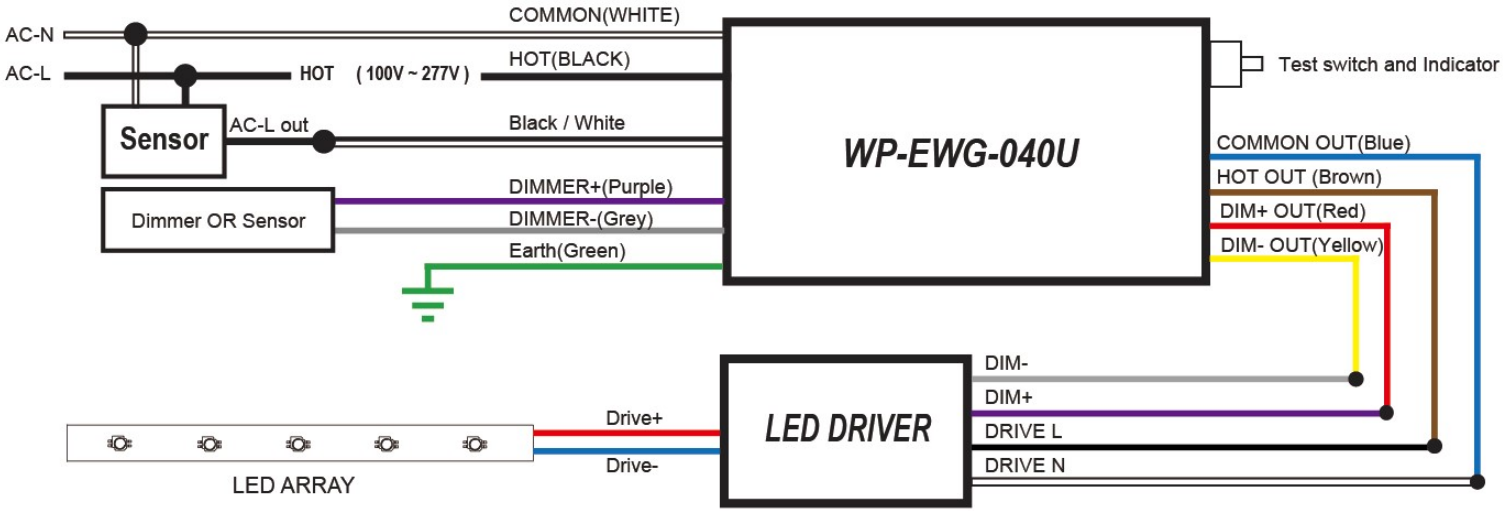
Wiring Diagram

(C): No Switch



(D): Sensor Control



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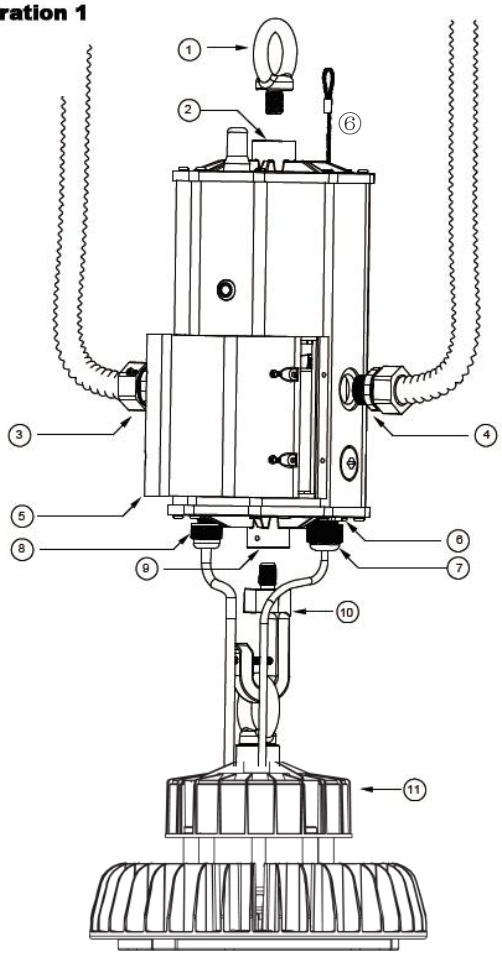
Installation Guideline

① Hanging ring bolt
② Thread mounted hole
③ AC input wire protective tube
④ Dimming wire protective tube
⑤ Integrated junction box cover
⑥ Safety rope
⑦ LED Driver dimming wire
⑧ LED Driver input wire
⑨ Thread mounted hole
⑩ Hanging hook bolt
⑪ LED Driver of UFO highbay light

Illustration 1



Attentions

Please use waterproof connectors in position ③ and ④ for application in damp location

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Installation Guideline

Step One: Disconnect AC Power From Fixture

Disconnect all power source to the lighting fixture and ensure they are locked out during installation or maintenance.

The AC driver must be source from the emergency inverter.

Select a suitable location for the emergency inverter an install such that its output leads can connect to the input leads of the AC driver.

Step Two: Install The Emergency Inverter

Select a suitable location on the ceiling for the hangable device.

Install the ring bolt ① to the emergency inverters ② and fix it with screw.

Install the hook ⑩ to the emergency inverter ⑨ and fix it with screw.

Open the cover of the junction box ⑤.

Install the bushing ⑦ (BN-M12-8 , Suitable for wire diameter 4-8mm, STYLE, SJTW, SJOW, SVT).

Install the bushing ⑧ (BN-M12-8 , Suitable for wire diameter 4-8mm, STYLE, SJTW, SJOW, SVT).

Install the safety rope ⑥, the another end of the safety rope and ring bolt ① should fix together on the fixing device on the ceiling.

Hang the emergency inverter to the hangable device on the ceiling.

Hang the LED lighting fixture ⑪ to the hook of the emergency inverter.

Install the box cables on AC wires ③ and dimming wires ④.

See *Illustration 1*, for typical installation and select appropriate mounting method.

NOTE:

1. Bushings are not installed on the emergency inverter at the factory, but packed in the kits bag.
2. Please use waterproof connectors in position ③ and ④ for application in wet location.
3. It is recommended to seal the dimming connector with an insulating sleeve, when the dimming function is not necessary. To avoid the signal interfering with the dimming line, and cause damage to the power supply.
4. Safety rope ⑥ is an optional component. If safety rope is not chosen then it is not needed for installation.
5. Verify that the dimming wires of the luminaires and emergency inverter are connected properly,

Step Three: Wiring The Emergency Inverter

Use the wiring diagram located on page 5 as reference.

Connect the AC power source leads (Switch and Un-Switch) to the input of the emergency inverter.

Connect the output leads of emergency inverter to the AC driver.

Wire the AC driver with the lamp in accordance with manufactures installation instructions.

Verify that all connections are in accordance with the National Electrical Code (NEC), Canadian Electrical Code (CEC) and any local regulations.

Step Four: Lock Up The Cover Of Junction Box & Turn On Power

After installation is completed, turn on the power.

At this point, power sould be connected to both the AC driver and the emergency inverter, and the Charge Indicator Light should illuminate indicating the battery is charging.

A short-term discharge test may be conducted after the emergency inverter has been chargin of 1 hour. Charge for 24 hours before conducting a long-term discharge test.

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Remote Controller

- **Diagnosis**
  In the normal Charging Mode, after being charged for 12 hours or fully charged, dial the switch on the side(towards the antenna),pull out the antenna, press the button ON, then it will enter Manual Diagnostic Mode. Press OFF to exit.

- **Controller Battery**
  6F22 9V aneroid battery or same specification rechargeable battery.

- **Remote Control Distance**
  No more than 20 meters, the received signal will be better by pulling out the antenna.

Dimension(Inch)
L : 5.79
L1 : 5.35
W: 0.17

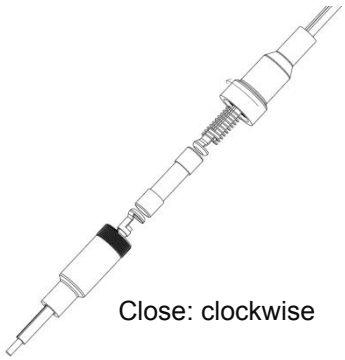
Fuse Replacement

- **Fuse Specifications**
  Time Lag Axial fuse(Glass Body or Ceramic Body)
  Φ5 * 20mm, 10A/300V

- **Purpose**
  To ensure the safety of products, the blown fuse must be connected to the fixture live wire (normal lighting switch control wire, black-into-white wire). If short circuit occurs on luminaires, or accidentally short-circuiting during wiring, that may damage the fuse. Only operators with relevant permits can open the fuse holder and replace it with same specification fuse.

- **Operation Method**
  Turn counterclockwise, open the fuse installation box, take out the bad fuse, replace it with a new one, and then turn clockwise to tighten.

Open: Counterclockwise



Close: clockwise

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Light Output Calculation

To ensure sufficient light output in the end application, please estimate by doing the following:

a. Check the light efficacy(lm/w) of LED luminaire, which is provided by the luminaire manufacturer, test it directly, check the test data from 3rd party test laboratory like UL, ETL etc., visit a 3rd party public database (such as Design Lights Consortium, www.designlights.org etc.), or other comparable means.

b. Lumens can be calculated by multiplying the output power of the emergency inverter by the light efficacy of the LED luminaire. In many cases, the actual lumen output in emergency mode will be greater than what this calculation gives, however, it will provide a good reference for the lighting design.

c. Using the results of this calculation and industry standard lighting design tools, the expected illuminance in the curve can be calculated.

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

_____(Lumens) = _____(lm/W) * 40(W)

Accessories

#	Name	Referred Photo	Quantity	Remarks
1	M12 Hanging Ring Bolt		1	
2	M12 Hanging Hook Bolt		1	
3	CM-221-2P Terminals		8	
4	CM-221-3P Terminals		3	
5	6#-32*1/4 Screws		1	
6	6#-32*5/8 Screws		2	
7	G(PF) ¼ Cable Grand Cord Grip		1	
8	G(PF) ½ Cable Grand Cord Grip		1	
9	Installation Manual Book	--	1	
10	Stainless Steel Safety Rope		1	Optional
11	Remote Controller		1	Optional
12	6F22 9V Battery	--	1	Optional

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Packaging

Name	Parameter
Net Weight of Singe Product	8.16 LB
Carton Size	L14.57*W7.48*H13.38 Inch
Qty./Ctn	2 PCS
N.W./G.W of Carton	16.31 /18.08 LB

Shipment

- It is suitable for transportation by car, boat and airplane.
- During transportation, it should be sheltered, sun-proof, and civilized loading and unloading.

Storage

- Product storage should comply with GB 3873-83.
- If storage period is les than a year, products should be re-examined.

RoHS

- Products comply to the European Standard 2011//65/EC

ATTENTIONS

- It is recommended that the LED driver output should be directly connected to the LED light source, and it is not appropriate to install other control devices between the output and the LED light source.

- If the product packaging is damaged, please confirm whether the product appearance is complete, and cracks on the external structure of the product is not acceptable.

- This specification sheet will be subject to change without notice.

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IMPORTANT SAFE GUARDS

When using electrical equipment and this lighting device basic safety precaution should be followed at all times including but not limited to the following:

PLEASE READ CAREFULLY AND FOLLOW ALL INSTRUCTIONS

FOR YOUR OWN SAFETY

WARNING: AC power must be turned off before proceeding with assembly or installation of emergency driver.

IMPORTANT: For use with non-dimming LED fixtures up to 40W. For use with LED fixtures（MAX 300W） that utilize 0-10V dimming that are above 40W, but this inverter will be limited to 40W(Including driver).

IMPORTANT: An un-switched AC power source of 100Vac to 277Vac is required.

CAUTION: Make sure all electrical connections conform to the National Electrical Code and all applicable local regulations.

CAUTION: Do not let power supply cords touch hot surfaces.

CAUTION: Do not mount near gas or electric heaters.

CAUTION: Use with grounded, UL Listed, dry or damp or wet location rated fixtures.

CAUTION: The equipment is intended for ordinary location and for permanent installation into one or more Listed emergency luminaires.

CAUTION: Battery is a rechargeable LiFePO4 type and must be recycled or disposed of properly. Do not use this emergency driver with accessory equipment other than recommended by the manufacturer; failure to follow this may cause an unsafe condition. Servicing should only be performed by qualified service personnel. Do not use this emergency driver for other than intended use. Not suitable for high-risk task area lighting. Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.

IMPORTANT: Indicator (LED light) illuminated indicates battery in charge mode when AC power is applied. It is recommended and required by applicable code to test emergency ballast to ensure proper function of the system. Push the test switch every thirty (30) days to ensure the emergency driver is functioning by illuminating the light source. Conduct a ninety (90) minutes discharge test once a year; LED light source should be illuminated for a minimum of ninety (90) minutes .

TESTING SYSTEM: The emergency battery requires a charge minimum of 1 hour before testing the circuit. A full charge requires 24 hours.

SAVE THESE INSTRUCTIONS

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