

DATA SHEET

WP-EWG-040U

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WeledPower®

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EMERGENCY MICRO INVERTER

WP-EWG-040U | for LED Highbay Lights

WeledPower

Heart Concentrate Profession

General Description

EWG 40W, 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 UFO LED highbay lights.



90Mins



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
- Remoted test by handhold controller
- Self-diagnostic every month and year
- RoHS compliant
- 5 years warranty from manufacture date

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 Characteristics

Parameter	Min.	Typical	Max.	Remarks
Rated Input Voltage (Vac)	100	--	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)
THDI	--	15%	20%	Vin=120-277Vac/60Hz (charging)
Max. Load(W)	--	--	300	Max. input power of LED fixture. And dimming to Min. input power(before dimming to off) of LED fixture must be less than 36W.

Output Characteristics

Parameter	Min.	Typical	Max.	Remarks
No Load Output Voltage (Vdc)	--	--	250	
Emergency Output Power (W)	5	--	40	Max. output power limited to 40W
Instantaneous Output Power (W)	--	--	100	Emergency, cold start peak output, last time 10 seconds
Power-up Time (S)	--	--	1	120Vac, charging
Response Time (S)	--	--	5	Switch from mains supply cuts to Emergency output
Emergency Duration Time	90	--	--	
Output Voltage (Vdc)	120	--	200	approximate value, varies with the battery voltage

Battery Characteristics

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 (Vdc)	●	--	--	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
	-10	--	50	Still working, but discharge time may be <90mins
Work Humidity (RH)	10%	--	90%	
Storage Temperature ()	-20	--	65	
Storage Humidity (RH)	5%	--	95%	
Altitude (m)	-50	--	3000	
Cooling Method	--	--	--	Air natural cooling



Other Characteristics

Parameter	Min.	Typical	Max.	Condition
Lifetime (H)	50000	--	--	
MTBF (H)	--	200000	--	277Vac, Ta 25 (MIL-HDBK-217F)
Max. Installation Height (FT)	--	--	36	11m
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		UL924	•	North America
cUL		CAN/CSA-C22.2 NO. 141	•	Canada
BC		CEC Title 20	•	California

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/12Ω
Ring-wave	ANSI C62.41	2.5KV/2Ω

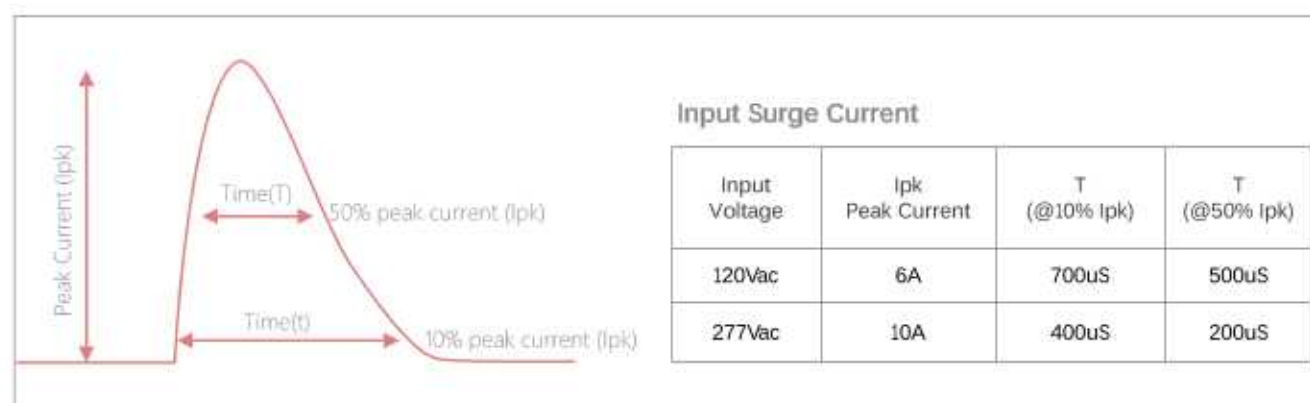
Safety Test Projects

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		$\geq 100\text{Mohm}$	Input-Ground, Test Voltage 500Vdc
Leak Current		$\leq 0.75\text{mA}$	277Vac
Ground Resistance		$\leq 0.1\Omega$	25A/1min

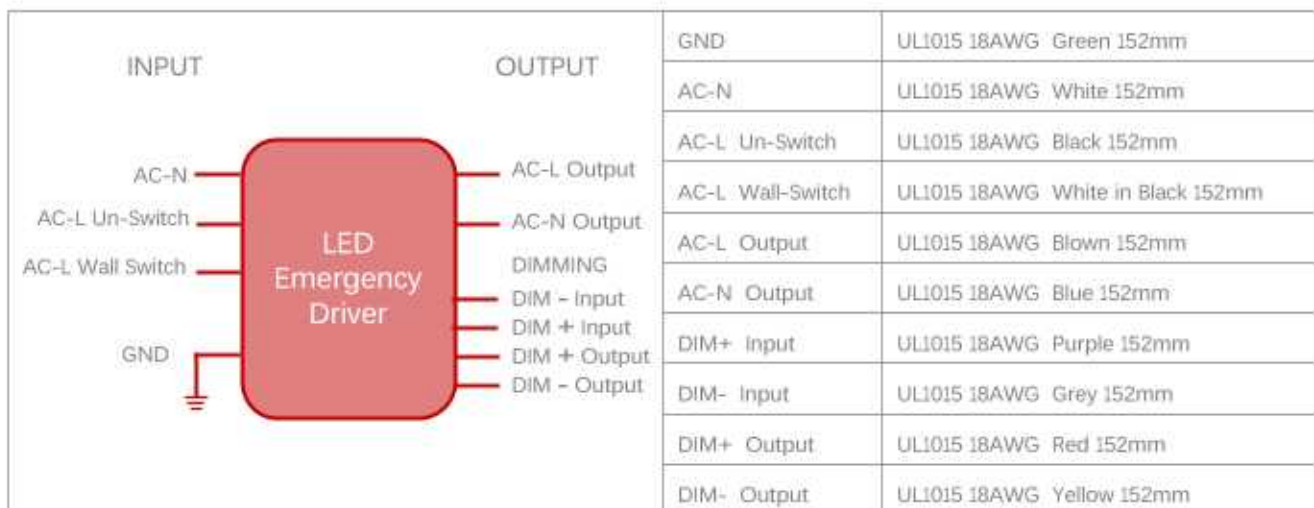
Remarks:

- The power supply is considered as a component to be used in combination with the terminal equipment. Because EMC is affected by the whole device, the terminal equipment manufacturer shall confirm EMC with the whole device.
- 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.

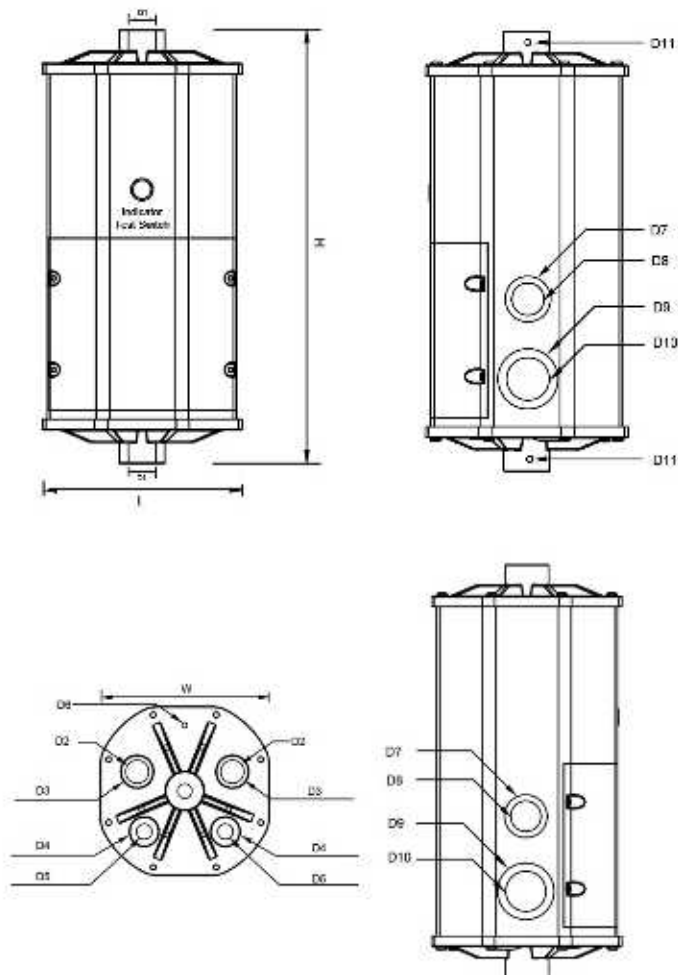
Characteristic Curve



Structure



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



Indicator

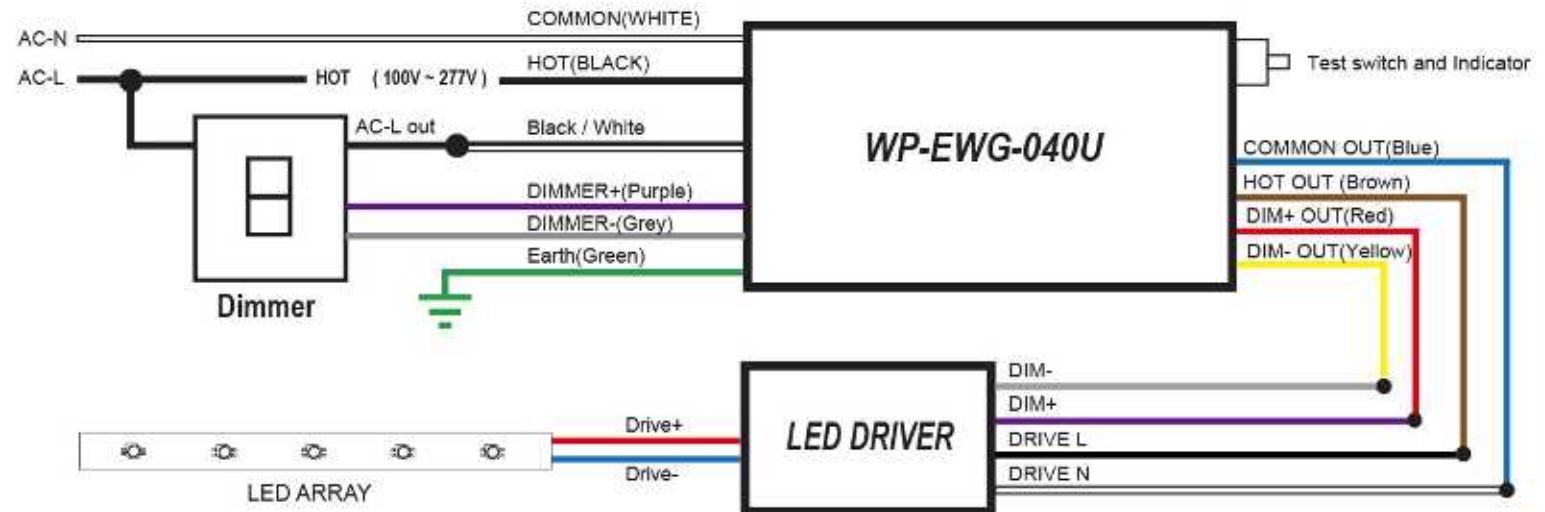
Parameter	Remarks
Solid Green ON	System OK/AC OK
None LED Off	System NG, battery voltage is too low, LED fixture is Short
Flashing Green (1s on, 1s off, cycling)	Battery not detected, check battery connection
Flashing Green (0.1s on, 5s off, cycling)	The backup micro inverter working in Emergency mode
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

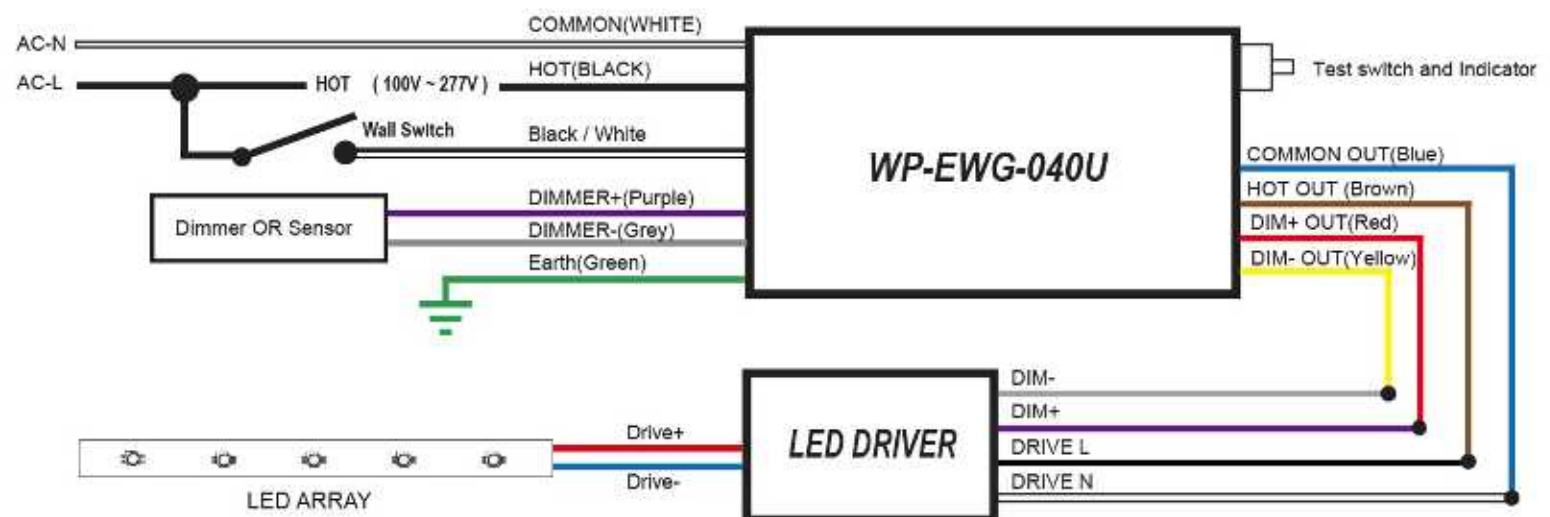
- Manual Diagnostic Mode**
 Under the normal charging mode, after the battery is charged for 12 hours or fully charged, long press the test button for 3S and hold it, enter the manual test mode, release the button to exit the manual diagnostic mode.
- Enable / Disable Self-Diagnostic Test System**
 Under the Normal Charging Mode, press the button twice in two seconds, then press the button longer than 2S and less than 5S, then press the button twice in succession, the indicator light will be on and off for 5 times (1S 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 (1S interval), means "Enable".
- Enter Sleep Mode**
 Under EM mode, press the test button 3S, 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 >5s, 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 30S, and automatically switches back to the normal charging mode after 30S.
- 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.

Wiring Diagram

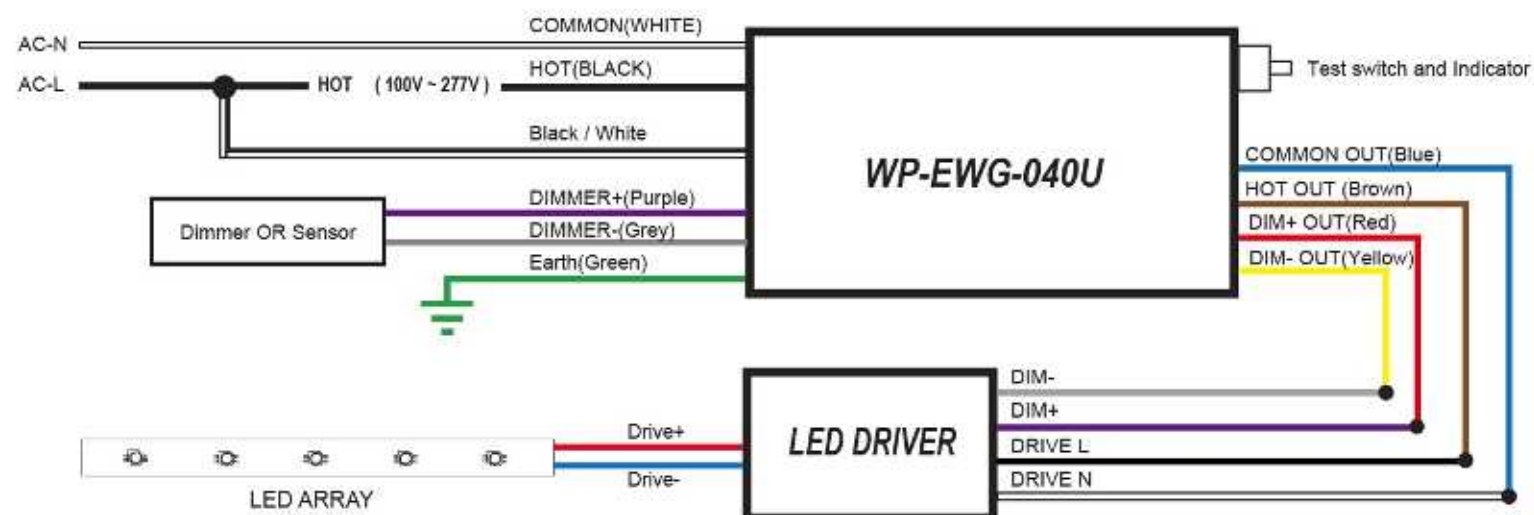
(A): Dimmer Switch



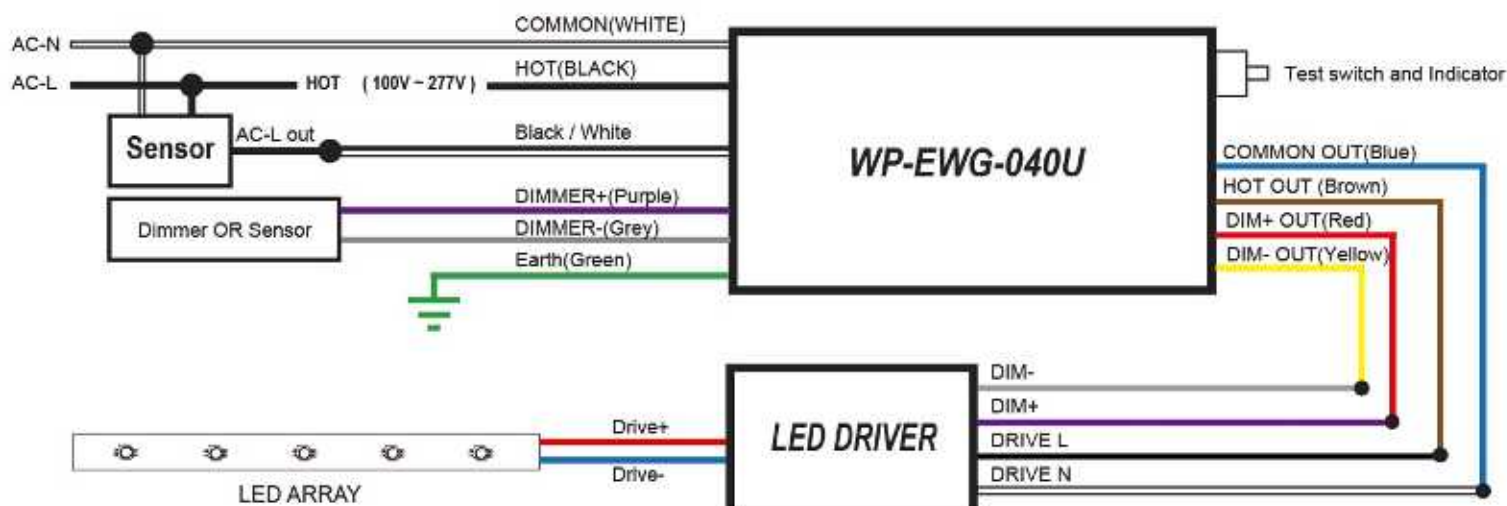
(B): Ordinary Switch



(C): No Switch



(D): Sensor Control



Installation Guideline

Hanging ring bolt

Thread mounted hole

AC input wire protective tube

Dimming wire protective tube

Integrated junction box cover

Safety rope

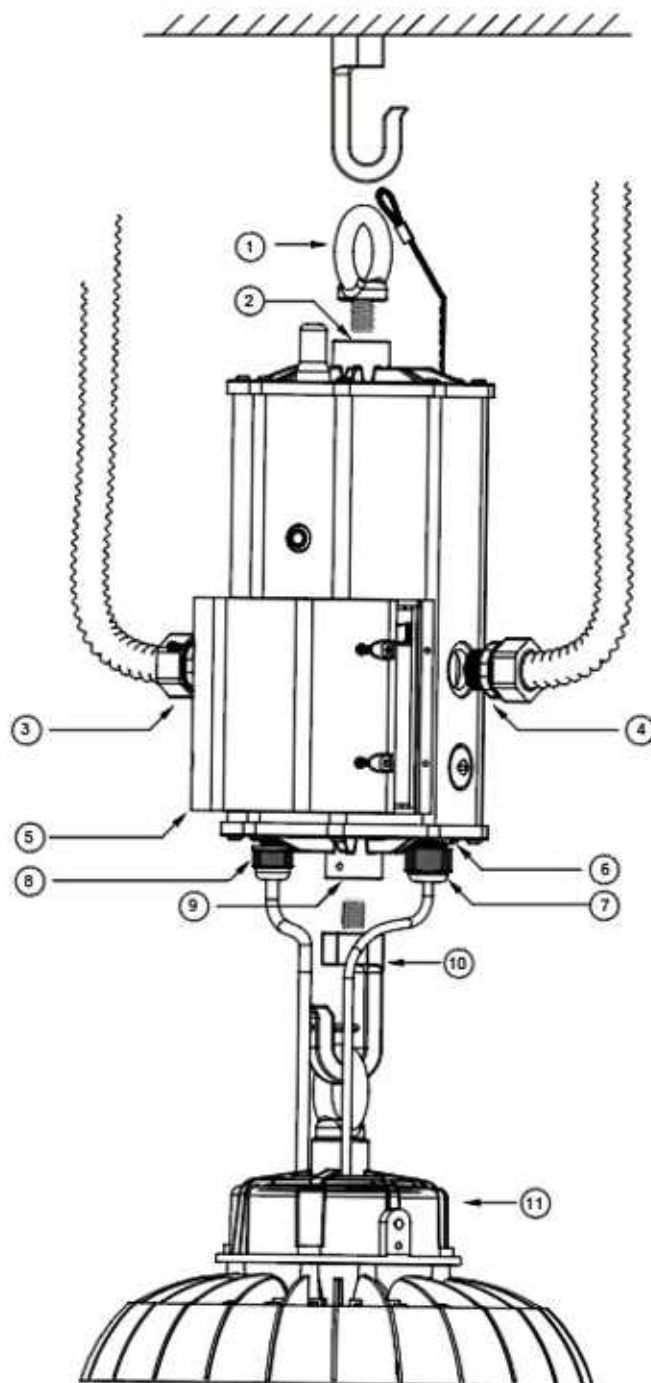
LED Driver dimming wire

LED Driver input wire

Thread mounted hole

Hanging hook bolt

⊗ LED Driver of UFO highbay light



Installation Guideline

Step #1 Disconnect AC Power From Fixture

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

The AC driver must be sourced from the backup micro inverter.

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

Step #2 INSTALL THE BACKUP MICRO INVERTER

Select a suitable location on the ceiling for hangable device.

Install the ring bolt to the backup micro inverter and fix it with screw.

Install the hook to the backup micro inverter and fix it with screw.

Open the cover of junction box.

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

Install the Bushing (BN-M18-10, Suitable for wire diameter 6-10mm, SJTW, SJOW, STYLE, SVT).

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

Hang the backup micro inverter to the hangable device on the ceiling.

Hang the LED lighting fixture to the hook of the backup micro inverter.

Install the Box cables on AC wires and dimming wires.

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

NOTE:

1. Bushings are not installed on the backup micro inverter at the factory, but packed in the kits bag.
2. Please use waterproof connectors in position and for application in wet location.
3. When the dimming function is not used, it is recommended to seal the dimming connector with an insulating sleeve, to avoid the signal interfering the dimming wires, and cause damage on the power supply.
4. Safety rope is an optional component, if not choose the safety rope, then do not need to install it.
5. Make sure the dimming wires of luminaries and Emergency LED Driver are connected correctly.

Step #3 WIRING THE BACKUP MICRO INVERTER

Use the wiring diagram found on page 5 as reference.

Connect the AC power source leads (Switched and Un-switched) to the input of the backup micro inverter.

Connect the output leads of backup micro inverter to the AC driver.

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

Make sure all connections are in accordance with the National Electrical Code, Canadian Electrical Code and any local regulations.

Step #4 LOCK UP THE COVER OF JUCTION BOX & APPLY POWER

After installation is complete, apply AC power.

At this point, power should be connected to both the AC driver and the backup micro inverter, and the Charging Indicator Light should illuminate indicating the battery is charging.

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

Remote Controller

- **Diagnosis**

In the normal Charging Mode, after 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

- **Remoted control distance**

No more than 20 meters, the received signal will be better by pulling out the antenna.



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 connected to the black-into-white wire may be damaged if short circuit happens on luminaires or during wiring. Only operators with relevant permits can open the fuse holder and replace it with same specification fuse.

- **Operation method**

Turn anticlockwise, open the fuse installation box, take out the bad fuse, replace it with a new one, and then turn clockwise to tighten



Light Output Calculation

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

- Check the light efficacy(lm/w) of LED luminaire, which is provided by the luminaire manufacturer or test it directly, or check the test data from 3rd party test laboratory like UL, ETL etc., or visit 3rd party public database(such as Design Lights Consortium, www.designlights.org etc.). or other comparable means.
- Lumens can be calculated by multiplying the output power of the battery backup emergency inverter by the light efficacy of the LED luminaire. In many cases, the actual lumen output in emergency mode will be greater than this calculation gives, however, it will provide a good reference for the lighting design.
- Using the results of this calculation and industry standard lighting design tools, the expected illuminance in the curve can be calculated.

$$\text{Lumens In Emergency Mode} = \text{Lumens per Watt of Fixture} * \text{Output Power of Chosen Product}$$











$$\text{_____ (Lumens)} = \text{_____ (lm/W)} * 40(\text{W})$$

Packaging

Name	Parameter
Net Weight of Single Product	3.7 KGS
Carton Size	L14.57*W7.48*H13.38 Inch
Qty./Ctn	2 PCS
N.W./G.W of carton	7.4 /8.2 KGS



Accessories

#	Name	Referred Photo	Quantity	Remarks
1	M12 Hanging Ring Bolt		1	Standard accessories are with one hook bolt and one ring bolt. Customers choose options for two hook bolts or two ring bolts are acceptable.
2	M12 Hanging Hook Bolt		1	
3	CM-221-2P Terminals		8	
4	CM-221-3P Terminals		2	
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	For optional
11	Remote Controller		1	For optional
12	6F22 9V Battery	--	1	For optional

Transportation

- 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 >1 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 allowed.
- Make sure luminaires work under DC Mode.
- This datasheet will be subject to change without notice

EMERGENCY FAMILY

Ni-Cd Low Voltage Emergency LED Drivers Family

Model#	Max.Power	Input Voltage	Output Voltage Current	Battery	Dimension
WP-08U-48-EA	8W	100-277 Vac	36-48 Vdc 160mA	Ni-Cd 9.6V 24WH	264*576*56 mm
WP-08U-48-EM			24-36 Vdc 220mA 18-24 Vdc 330mA 12-18 Vdc 440mA		430*57*35 mm
WP-12U-48-EA	10.5W	100-277 Vac	36-48 Vdc 250mA	Ni-Cd 9.6V 24WH	264*576*56 mm
WP-12U-48-EM			24-36 Vdc 330mA 18-24 Vdc 480mA 12-18 Vdc 650mA		430*57*35 mm
WP-25U-48-EA	24.5W	100-277 Vac	42-48 Vdc 520mA 36-42 Vdc 590mA 24-36 Vdc 690mA 18-24 Vdc 1050mA	Ni-Cd 14.4V 57.6WH	370*72*71 mm

Ni-Cd High Voltage Emergency Inverter Family

Model#	Max.Power	Input Voltage	Output Voltage Current	Battery	Dimension
WP-18U-175-EA	18W	100-277 Vac	140-185 Vdc	Ni-Cd 14.4V 57.6WH	370*72*71 mm
WP-25U-175-EA	24.5W	100-277 Vac	140-185 Vdc	Ni-Cd 14.4V 57.6WH	370*72*71 mm

LiFePO4 Emergency LED Driver Family

Model#	Max.Power	Input Voltage	Output Voltage	Output Current	Type	Dimension
WP-EWG-025U	25W	120-277 Vac	12-55 Vdc	100-1000mA	Controller	136*43*24 mm
WP-EWG-025B	25W	120-347 Vac	12-55 Vdc	100-1000mA	Controller	136*43*24 mm
WPBATWL09V61500	6W	--	12-55 Vdc	--	LiFePO4 9.6V 1500mAh	88.5*71.4*25 mm
WPBATSL09V61500	6W	--	12-55 Vdc	--	LiFePO4 9.6V 1500mAh	225.4*31.2*33.7 mm
WPBATFL09V63000	14.5W	--	14.5-55 Vdc	--	LiFePO4 9.6V 3000mAh	88.5*71.4*25 mm
WPBATSL09V63000	14.5W	--	14.5-55 Vdc	--	LiFePO4 9.6V 3000mAh	225.4*31.2*33.7 mm
WPBATHL09V66000	25W	--	25-55 Vdc	--	LiFePO4 9.6V 6000mAh	191*72.8*33 mm



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