MW 160W Constant Power Mode LED Driver Owner's Manual

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MW 160W Constant Power Mode LED Driver

Product Information

Specifications:

- **Model:** XBG-160- –
- **Output Input Default Current:** 3300mA
- **Rated Power:** 159.9W
- **Constant Current Region:** 34 ~ 56V
- **Full Power Current Range:** 2850~4100mA
- **Open Circuit Voltage (max.):** 60V
- **Current Adj. Range:** 1425~4100mA
- Current Ripple Current Tolerance
- **Set up Time:** 500ms/230VAC, 2000ms/115VAC
- **Voltage Range:** 90 ~ 305VAC, 127 ~ 431VDC
- **Frequency Range:** 47 ~ 63Hz
- **Power Factor (Typ.):** PF0.97 / 115VAC, PF0.95 / 230VAC, PF0.92/277VAC at full load
- **Total Harmonic Distortion:** THD<10% (@ load60% at 115VAC/230VAC, @load75% at 277VAC)
- **Efficiency (Typ.):** 93%
- **AC Current (Typ.):** Inrush Current(Typ.): 2.0A / 115VAC, 0.8A /230VAC, 0.7A / 277VAC

Product Usage Instructions

1. **Installation:**
    1. Ensure the power supply is within the specified voltage range of 90-305VAC or 127-431VDC.
    2. Connect the output to the LED lights within the constant current region of 34-56V.
2. **Adjusting Current:**
   To adjust the current output, use the provided adjustment range of 1425-4100mA based on your LED light requirements.
3. **Power Factor and Efficiency:**
   Maintain a power factor of PF0.97 / 115VAC, PF0.95 / 230VAC, PF0.92 / 277VAC for optimal efficiency at full load.
4. **Total Harmonic Distortion:**
   Keep the total harmonic distortion below 10% under specified load conditions for optimal performance.

FAQ:

Q: What is the maximum number of units that can be connected to a 16A circuit breaker?
A: Depending on the type of circuit breaker, you can connect up to 4 units with a type B breaker or up to 7 units with a type C breaker at 230VAC.

User's Manual

Features

- Full power output at 70 ~ 100% constant power mode operation
- Wide input range 90 ~ 305VAC with active PFC function
- Metal housing design with IP67
- Function options: output adjustable via potentiometer; 3 1 dimming (dim-to-off and Isolation design)
- Typical lifetime>50000 hours and 5 years warranty
- AC input cable with connector for flexible application

Applications

- LED bay lighting
- LED stage lighting
- LED spot lighting
- Explosion-proof lighting
- Type HL LED driver for class I division 2

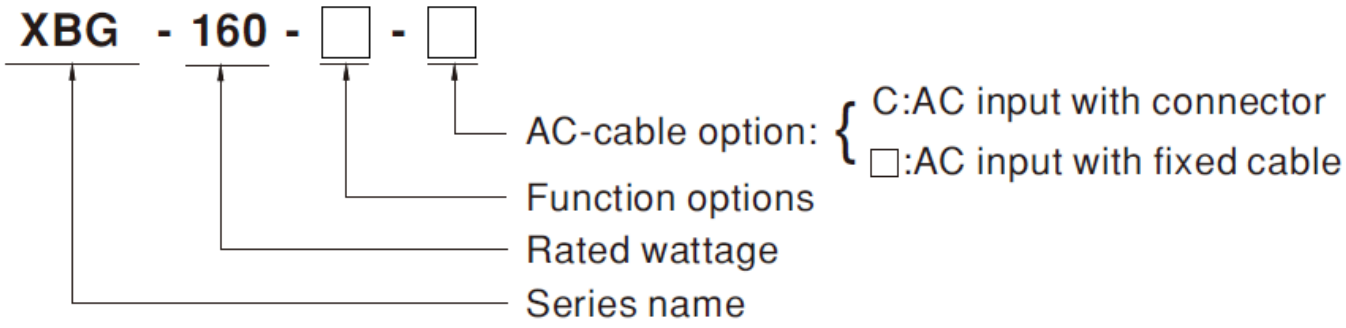
GTIN CODE

- **MW Search: https://www.meanwell.com/serviceGTIN.aspx**.

Description

XBG-160 series is a 160W AC/DC LED driver featuring the constant power mode. XBG-160 operates from 90~305VAC and offers different rated currents ranging between 2850mA and 4100mA. Thanks to the high efficiency of up to 93%, with the fanless design, the entire series can operate for -40°C~+90°C case temperature under free air convection. The design of metal housing and IP67 ingress protection level allows this series to fit both indoor and outdoor applications. Moreover, the innovative environment-adaptive capability allows this series to reliably light on the LEDs for all kinds of application environments in almost any spot that may install LED luminaires in the world. XBG-160 series complies with the latest version of IEC61347/GB7000.1-2015 and UL8750 international safety regulations. The output and dimming circuit are also completely by the new regulations with isolation to ensure the safety of both users and the luminaire system during installation.

Model Encoding



Type	IP Level	Function	Note
A	IP67	constant power adjustable via built-in potentiometer	In Stock
AB	IP67	constant power adjustable via built-in potentiometer + 3 in 1 dimming function (0~10Vdc, 10V PWM signal and resistance)	In Stock

SPECIFICATION

MODEL			XBG-160- –
OUTPUT	DEFAULT CURRENT		3300mA
	RATED POWER		159.9W
	CONSTANT CURRENT REGION		34 ~ 56V
	FULL POWER CURRENT RANGE		2850~4100mA
	OPEN CIRCUIT VOLTAGE (max.)		60V
	CURRENT ADJ. RANGE		1425~4100mA
	CURRENT RIPPLE		5.0% max. @rated current
	CURRENT TOLERANCE		±5%
	SET UP TIME	Note. 4	500ms/230VAC, 2000ms/115VAC
	VOLTAGE RANGE	Note. 2	90 ~ 305VAC 127 ~ 431VDC (Please refer to the “STATIC CHARACTERISTIC” section)
	FREQUENCY RANGE		47 ~ 63Hz

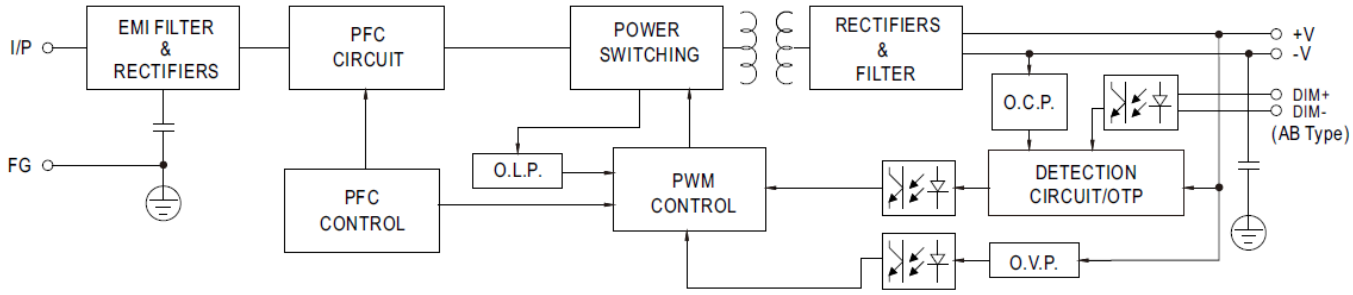
INPUT	**POWER FACTOR (Typ.)**	PF≧0.97 / 115VAC, PF≧0.95 / 230VAC, PF≧0.92 / 277VAC at full load (Please refer to the “Power Factor Characteristic” section)
	TOTAL HARMONIC DISTORTION	THD< 10% (@ load≧60% at 115VAC/230VAC,@load≧75% at 277VAC) Please refer to the “TOTAL HARMONIC DISTORTION (THD)” section
	EFFICIENCY (Typ.)	93%
	AC CURRENT (Typ.)	2.0A / 115VAC 0.8A / 230VAC 0.7A / 277VAC
	INRUSH CURRENT(Typ.)	COLD START 50A(twidth=620μs measured at 50% Ipeak) at 230VAC; Per NEMA 410
	MAX. NO. of PSUs on 16A CIRCUIT BREAKER	4 unit(circuit breaker of type B) / 7 units(circuit breaker of type C) at 230VAC
	LEAKAGE CURRENT	<0.75mA / 277VAC
	NO LOAD / STANDBY POWER CONSUMPTION	No load power consumption<0.5W for A-Type Standby power consumption<0.5W for AB-Type
PROTECTION	**OVER CURRENT**	95 ~ 108%
		Constant current limiting recovers automatically after the fault condition is removed
	SHORT CIRCUIT	Hiccup mode recovers automatically after the fault condition is removed
	OVERVOLTAGE	61 ~ 78V
		Shut down output voltage, re-power on to recovery
	OVER TEMPERATURE	Shut down output voltage, re-power on to recovery
ENVIRONMENT	**WORKING TEMP.**	Tcase=-40 ~ +90℃(Please refer to “OUTPUT LOAD vs TEMPERATURE” section)
	MAX. CASE TEMP.	Tcase=+90℃
	WORKING HUMIDITY	20 ~ 95% RH non-condensing
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH non-condensing
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 60℃)

	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes		
SAFETY & EMC	**SAFETY STANDARDS**	UL8750(type"HL"), CSA C22.2 No. 250.13-12; ENEC BS EN/EN61347-1, BS EN/EN61347-2-13 independent, BS EN/EN62384; IS15885(Part2/Sec13);GB19510.1,GB19510.14;IP67;EAC TP TC 004 approved		
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:1.5KVAC		
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH		
	EMC EMISSION	**Parameter**	**Standard**	**Test Level/Note**
		Conducted	BS EN/EN55015(CISPR15),GB/T 17743	——
		Radiated	BS EN/EN55015(CISPR15),GB/T 17743	——
		Harmonic Current	BS EN/EN61000-3-2,GB17625.1	Class C @load≥50%
		Voltage Flicker	BS EN/EN61000-3-3	——
	EMC IMMUNITY	BS EN/EN55024 , BS EN/EN61204-3, BS EN/EN61000-6-2		
		Parameter	**Standard**	**Test Level/Note**
		ESD	BS EN/EN61000-4-2	Level 3, 8KV air ; Level 2, 4KV contact
		Radiated	BS EN/EN61000-4-3	Level 3
		EFT/Burst	BS EN/EN61000-4-4	Level 3
		Surge	BS EN/EN61000-4-5	4KV/Line-Line 6KV/Line-Earth
		Conducted	BS EN/EN61000-4-6	Level 3
		Magnetic Field	BS EN/EN61000-4-8	Level 4
		Voltage Dips and Interruptions	BS EN/EN61000-4-11	>95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods

OTHERS	**MTBF**		3173.6K hrs min.	Telcordia SR-332(Bellcore); 282.4K hrs min.	MIL-HDBK-217F (25℃)
	LIFETIME	**Note. 5**	50000 hrs min.		
	DIMENSION		φ151.5mm *60mm(D*H)		
	PACKING		1.25Kg; 8pcs/11.5Kg/0.93CUFT		
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated current, and 25°C of ambient temperature. 2. De-rating may be needed under low input voltages. Please refer to the “STATIC CHARACTERISTIC” sections for details. 3. The driver is considered a component that will be operated in combination with the final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify the EMC Directive on the complete installation. (as available on **https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf**) 4. Length of set-up time is measured at the first cold start. Turning ON/OFF the power supply may lead to an increase in the set-up time. 5. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly to point (or TMP, per DLC), is about 70°C or less. 6. To fulfill the requirements of the latest ErP regulation for lighting fixtures, this LED drive can only be used behind a switch without being permanently connected to the mains. 7. Please refer to the warranty statement on MEAN WELL’s website at **http://www.meanwell.com** 8. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitudes higher than 2000m(6500ft). 9. Products sourced from the Americas regions may not have the PSE/CCC/BIS/KC logo. Please contact your MEAN WELL sales for more information. 10. For any application note and IP waterproof function installation caution, please refer to our user manual before using. **https://www.meanwell.com/Upload/PDF/LED_EN.pdf** Product Liability Disclaimer: For detailed information, please refer to **https://www.meanwell.com/serviceDisclaimer.aspx**				

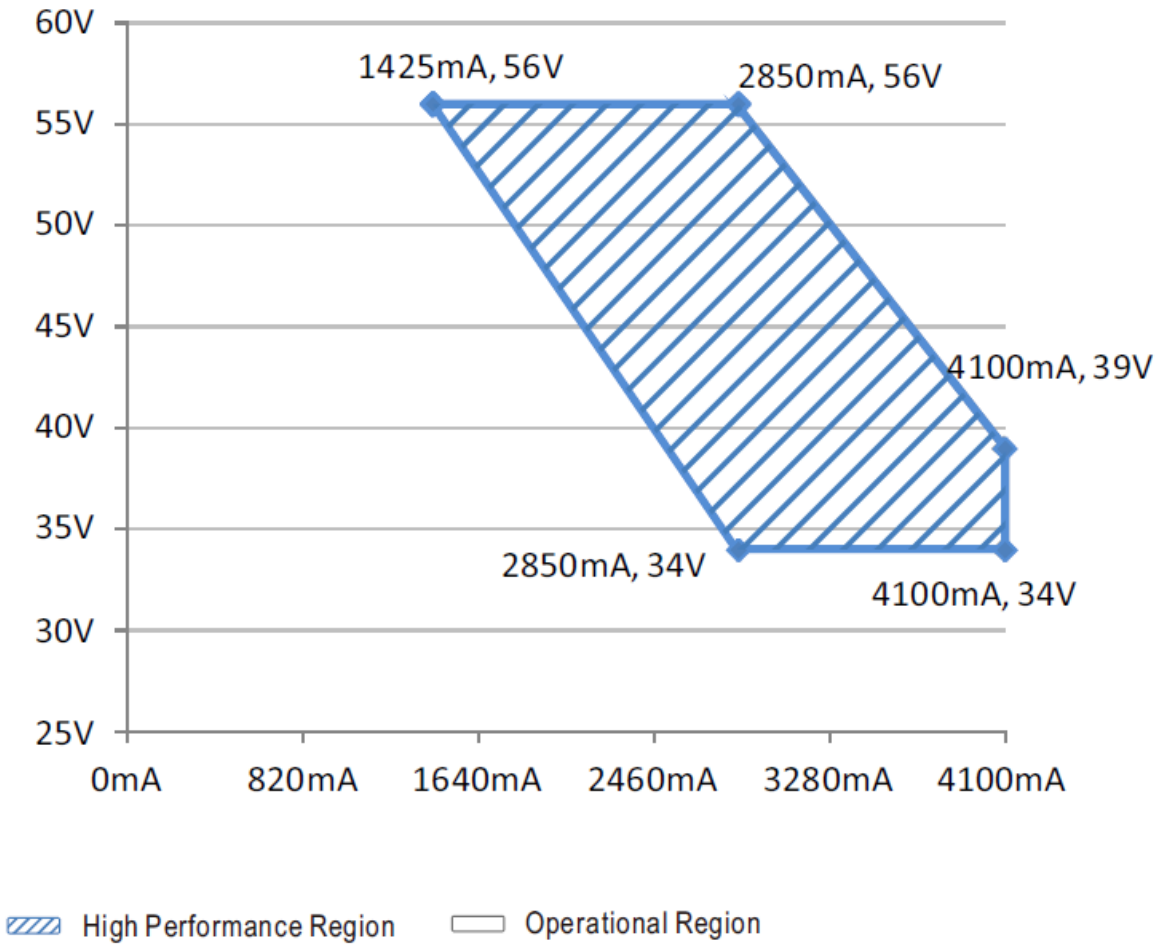
BLOCK DIAGRAM

- **PFC fosc:** 45~50KHz
- **PWM fosc:** 60~130KHz

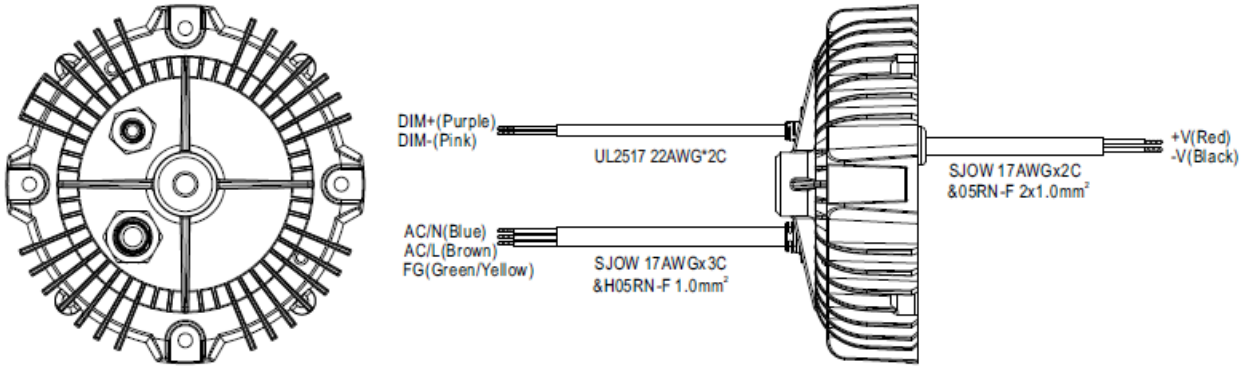


DRIVING METHODS OF LED MODULE

- I-V Operating Area
  - XBG-160



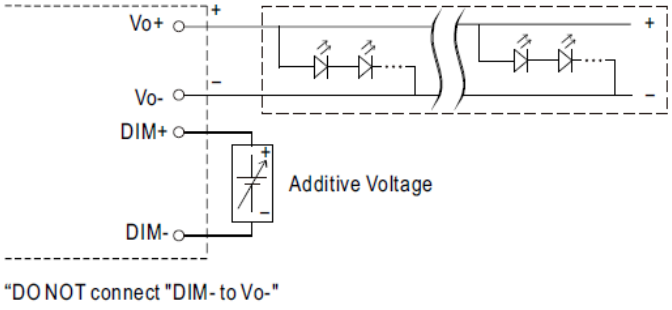
DIMMING OPERATION

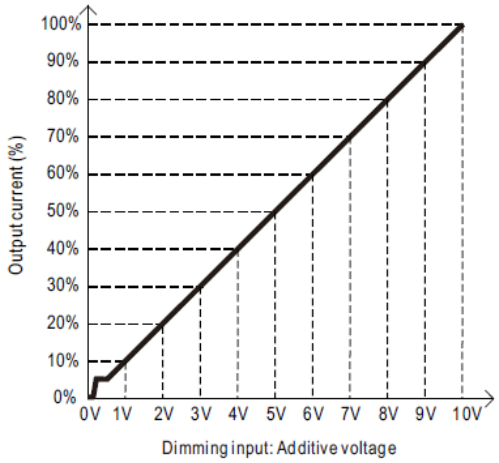


3 in 1 dimming function (for AB-Type)

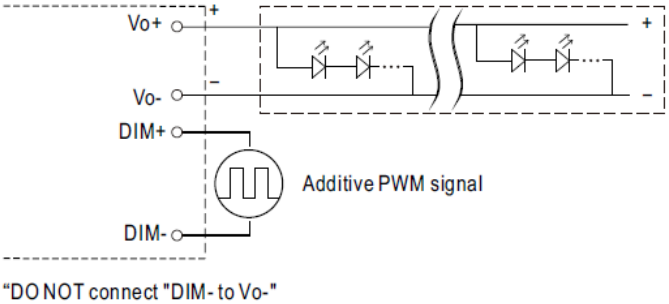
- Output constant current level can be adjusted by applying one of the three methodologies between DIM+ and DIM-: 0 ~ 10VDC, or 10V PWM signal or resistance.
- Direct connecting to LEDs is suggested. It is not suitable to be used with additional drivers.
- Dimming source current from power supply: 100μA (typ.)

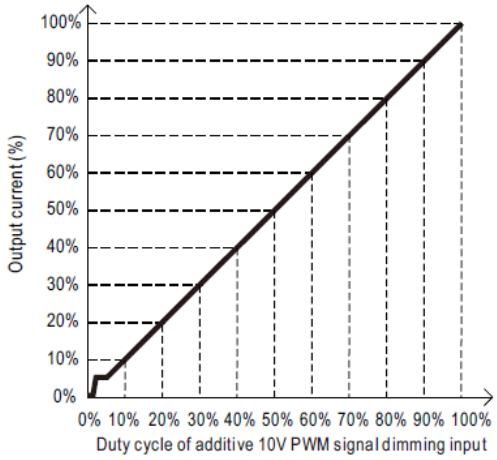
Applying additive 0 ~ 10VDC



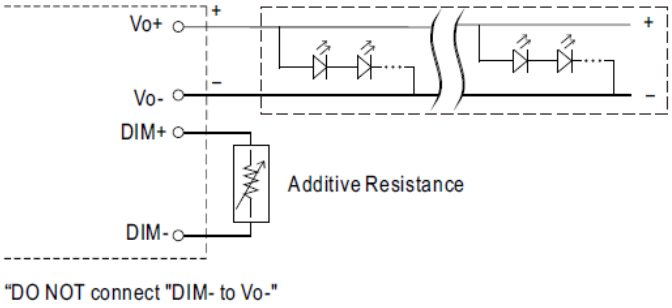


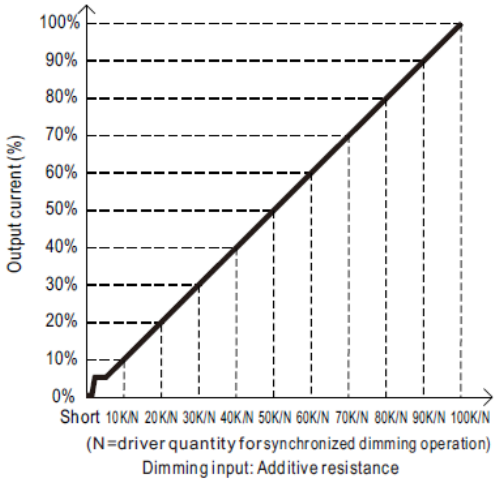
Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):





Applying additive resistance:

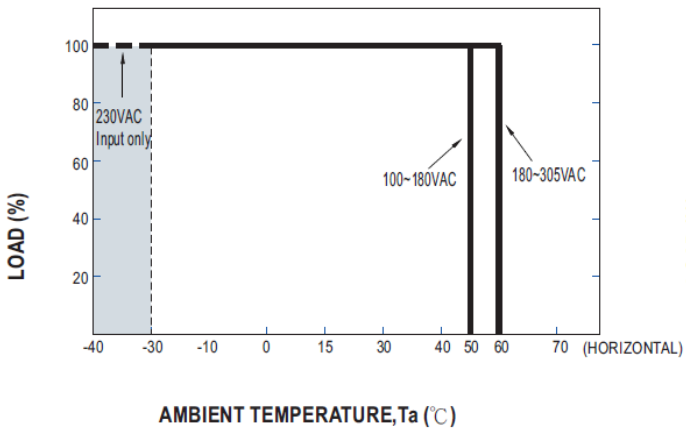


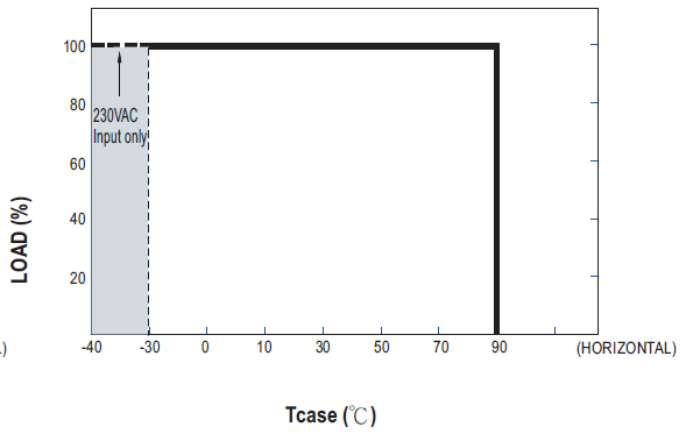


Note:

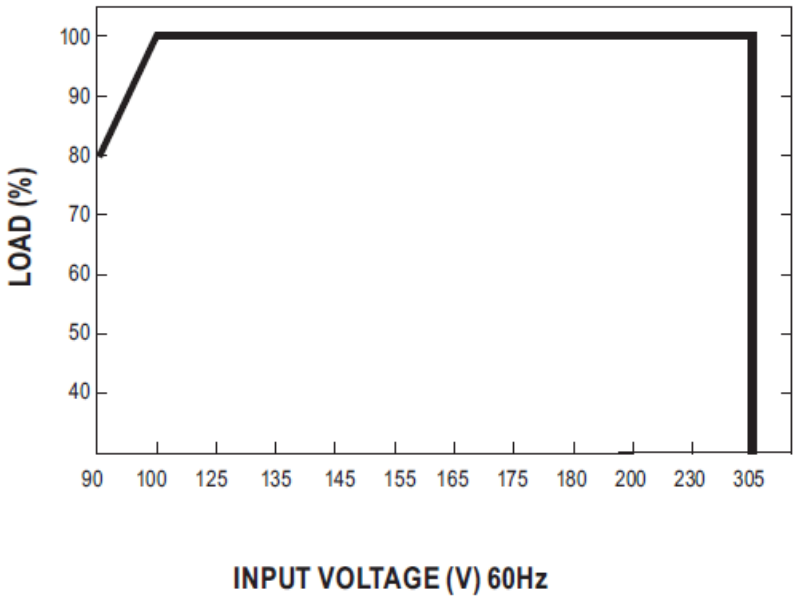
1. Min. dimming level is about 8% and the output current is not defined when 0%< Iout<8%.
2. The output current could drop down to 0% when dimming input is about 0kΩ 0Vdc, or 10V PWM signal with 0% duty cycle.

OUTPUT LOAD vs TEMPERATURE



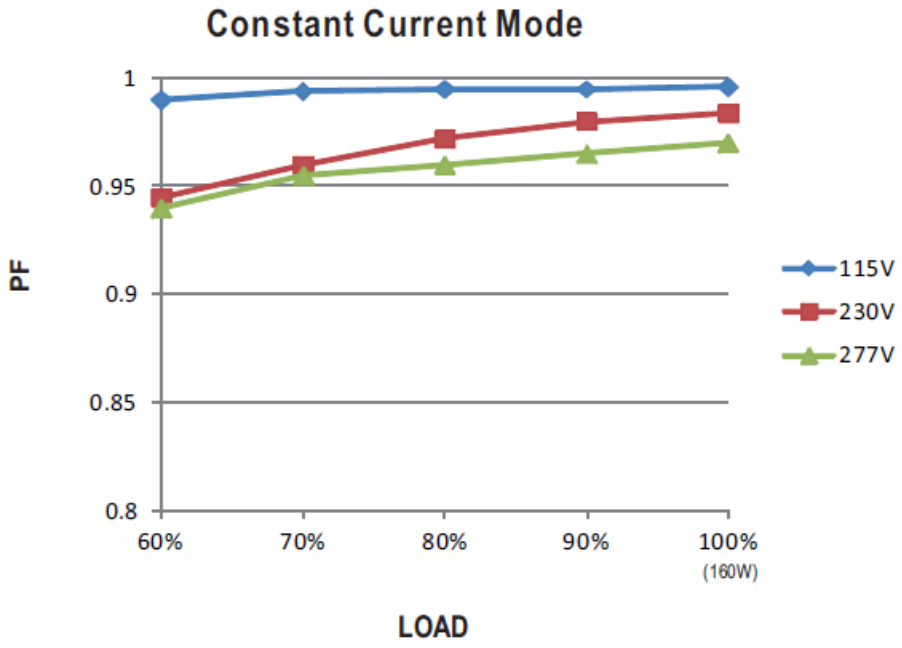


STATIC CHARACTERISTIC



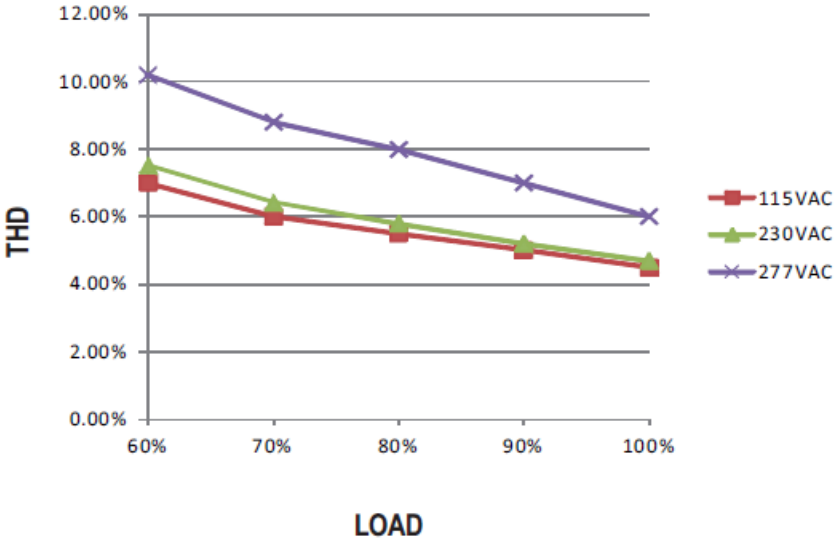
POWER FACTOR (PF) CHARACTERISTIC

Tcase at 65°C



TOTAL HARMONIC DISTORTION (THD)

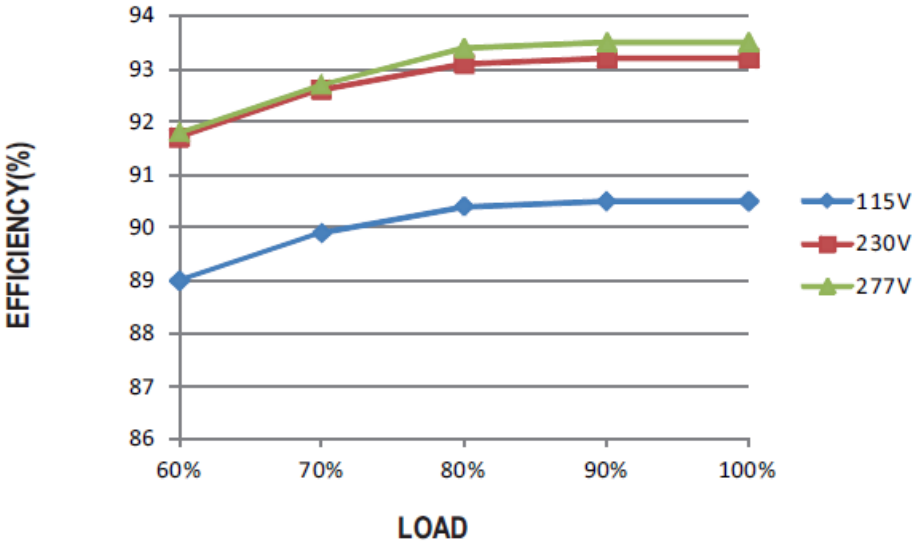
2850mA Model, Tcase at 65°C



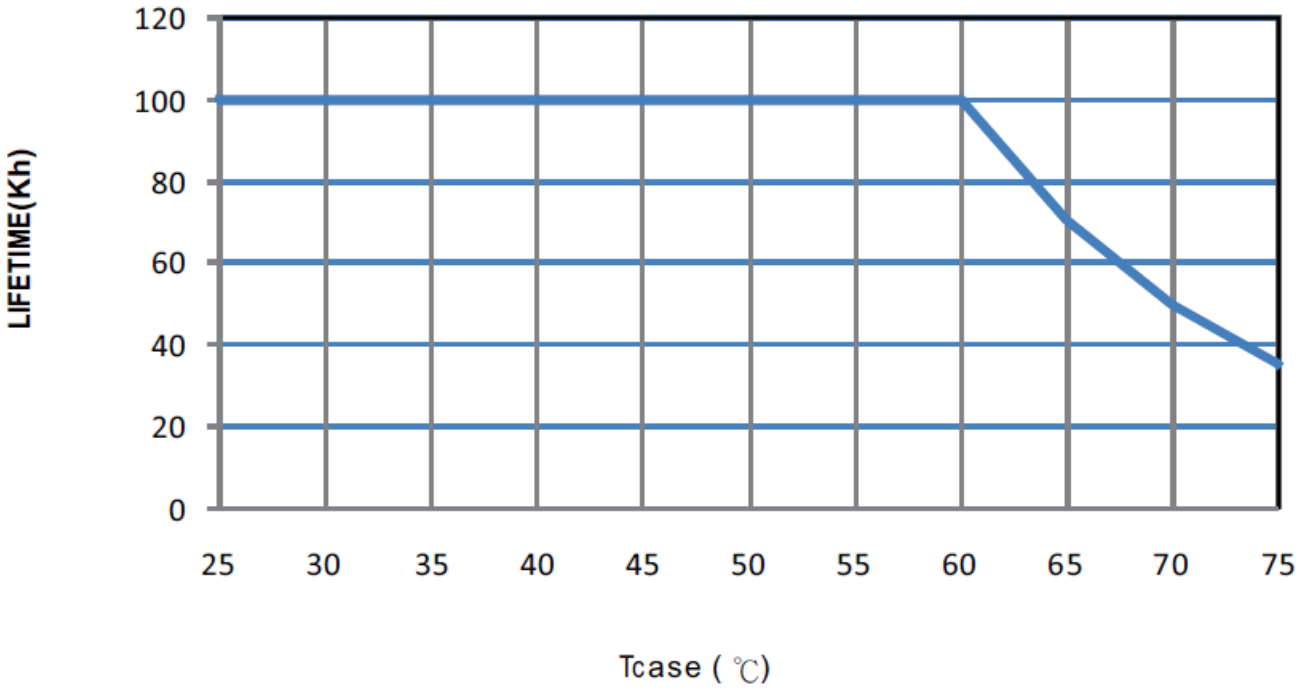
EFFICIENCY vs LOAD

XBG-160 series possess superior working efficiency that up to 93% can be reached in field applications.

- 2850mA Model, Tcase at 65°C

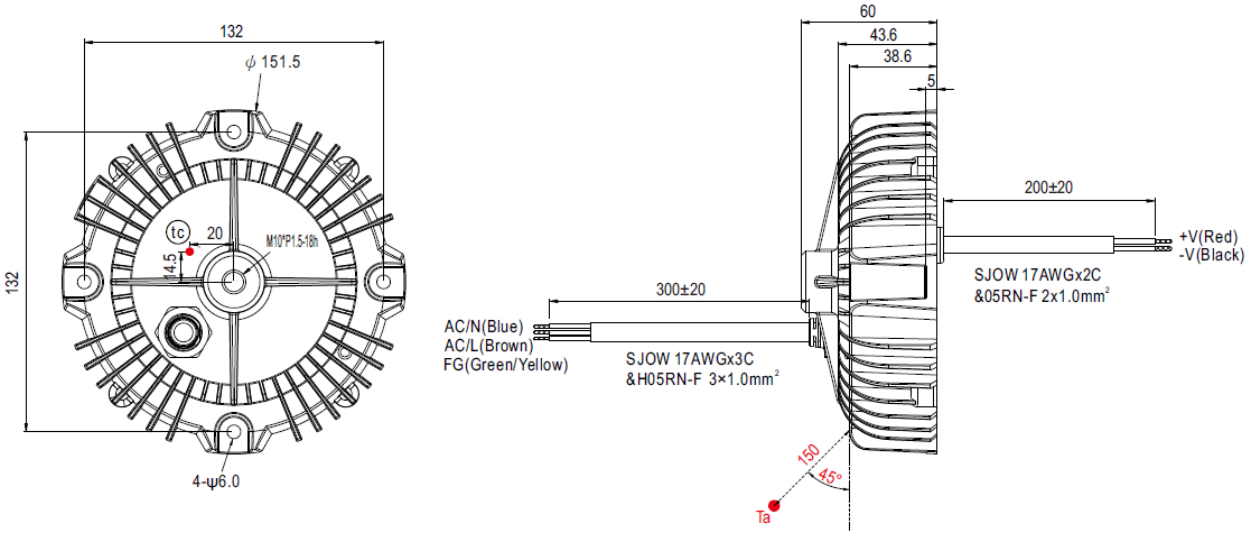


LIFETIME

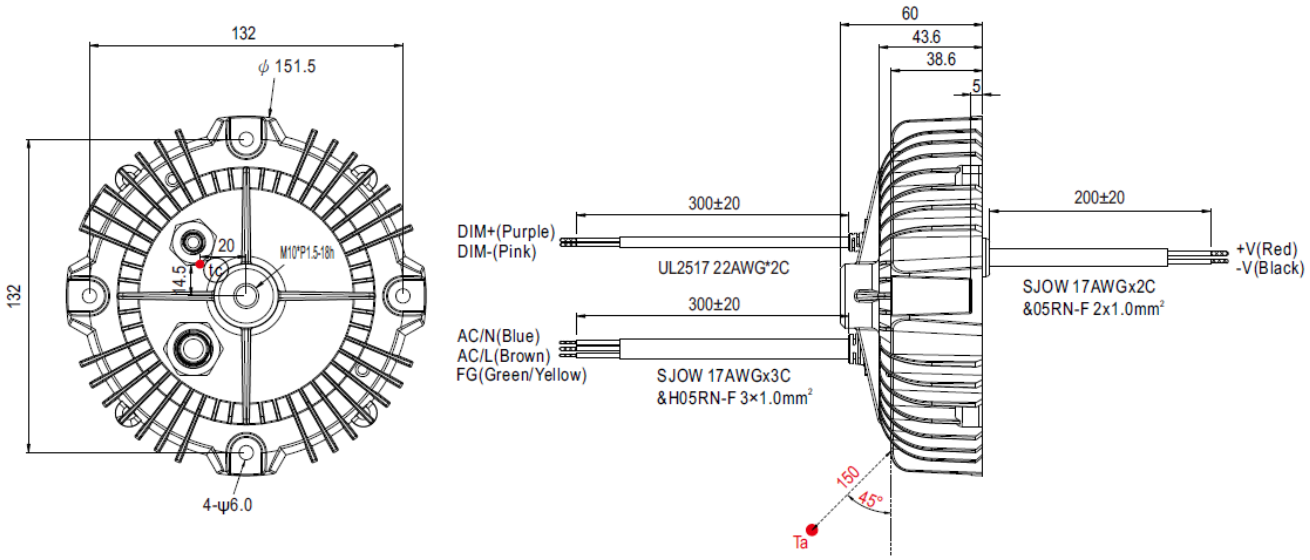


MECHANICAL SPECIFICATION

- A-Type(AC input with fixed cable)
  - Case No.271 Unit:mm

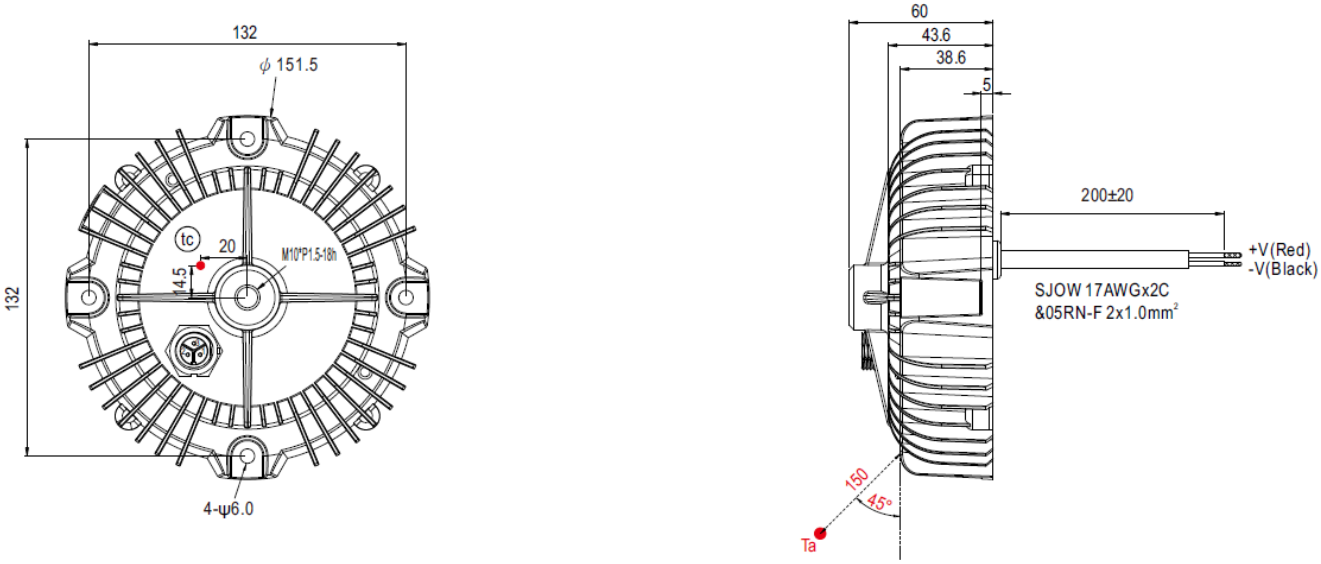


- AB-Type

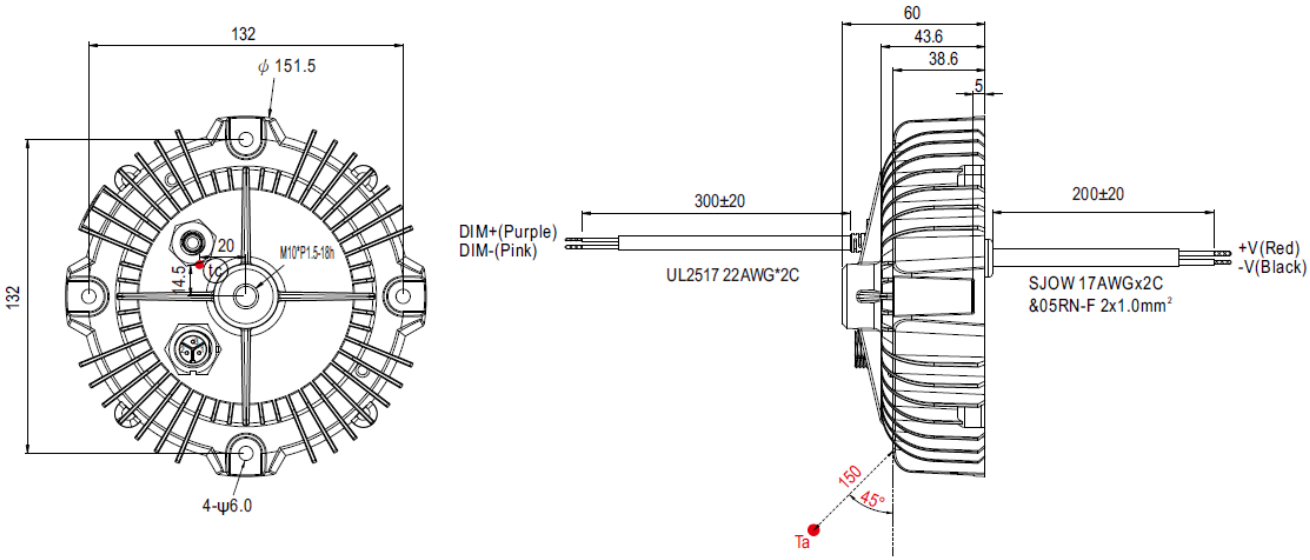


- **tc:** Max. Case Temperature.(case temperature measured point)
- **Ta:** Ambient Temperature measured point

- A-C-Type(AC input with connector)



- AB-C-Type



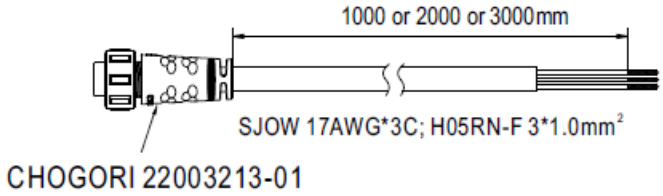
Terminal Pin No. Assignment(CHOGORI 22003515-01)

Pin No.	Assignment	Drawing
1	AC/L	
2	AC/N	
3	FG ⏚	

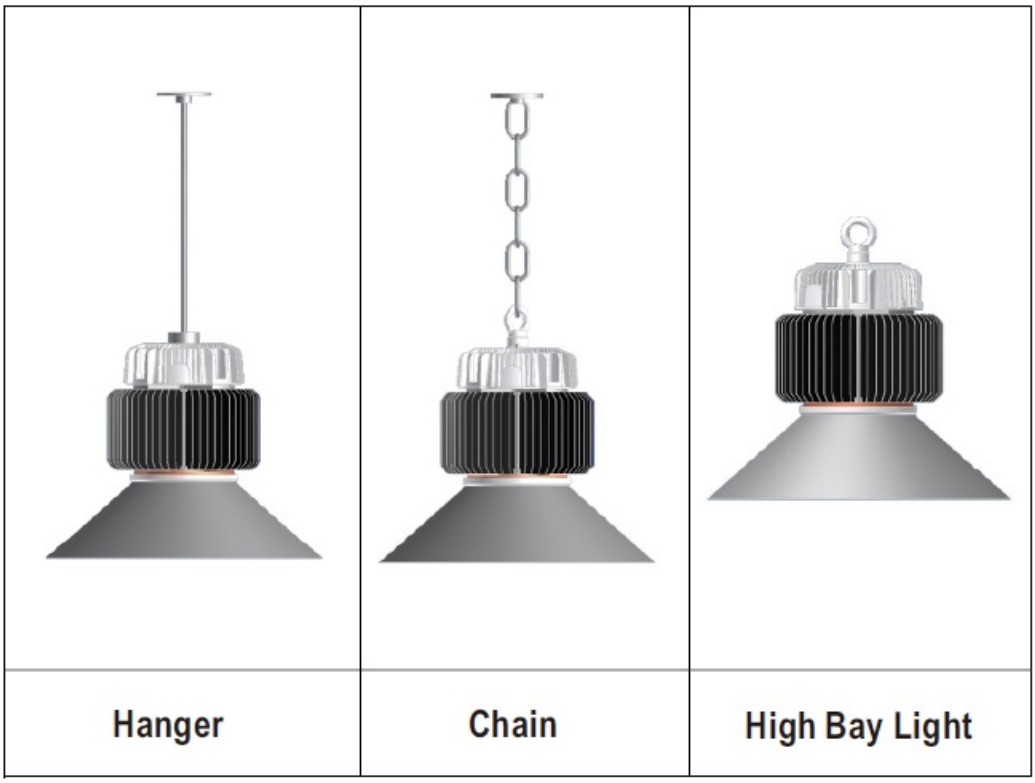
- **tc:** Max. Case Temperature. (case temperature m
- **Ta:** Ambient Temperature measured point

AC input cable is optional and needs an extra charge

Item	Order Code	Note
100cm	F61-XBG-AC-CABLE-100	In Stock
200cm	F61-XBG-AC-CABLE-200	By Request
300cm	F61-XBG-AC-CABLE-300	By Request



INSTALLATIONS



Caution

- Please inspect the appearance of the driver if the package is damaged. There should not be any cracks.

- Please do not drop or bump the driver.
- All screws including the suspension screw should be paired with a spring washer and locked tight.
- The entire luminaire, including the driver, should be limited to 10 kg or less.
- The luminaire should be cautiously protected from damage due to shock throughout packaging and transportation.
- Please thoroughly follow the preceding cautionary notes to prevent the luminaire from falling, leading to injuries.

INSTALLATION MANUAL
Please refer to: **http://www.meanwell.com/manual.html**.

Documents / Resources

	**MW 160W Constant Power Mode LED Driver** [pdf] Owner's Manual XBG-160- -, XBG-160 160W Constant Power Mode LED Driver, XBG-160, 160W Constant Power Mode LED Driver, Constant Power Mode LED Driver, Power Mode LED Driver, Mode LED Driver, LED Driver, Driver

References

- **User Manual**