

GLDP-060 series

60W Programmable Constant Power LED Driver with Dimming Function



Features:

- Constant power design with adjustable output current
- Output current adjustable via infrared controller or software interface
- Built-in active PFC function
- Universal AC input / Full range
- Protections: Short Circuit / Over Voltage / Over Temperature
- Cooling by free air convection
- Surge immunity: Differential Mode - 5kV, Common Mode - 10kV
- Dimming 3 in 1 (2-10V, PWM, Time dimming) function for M version
- IP67 design for indoor and outdoor applications

Application:

- LED street / tunnel lighting
- Industrial lighting
- Flood lighting
- Grow lights



© MODEL INFORMATION

Model Number	Output Power [W]	Output Current adjustable range [A]		Output Voltage Range [V]		Default Spec		Efficiency typ. [%]	No load max. Output Voltage [V]
		min	max	min	max	Voltage [V]	Current [A]		
GLDP-060X045 (X = M, R)	59.85	0.36	1.8	20	45	36	1.67	86%	60
GLDP-060X080 (X = M, R)	60	0.21	1.05	45	80	57	1.05	87%	100
GLDP-060X180 (X = M, R)	60.2	0.14	0.7	80	180	86	0.7	87%	200

© APPROVAL MARKS and SYMBOLS

GLDP-060X045 (X = M, R)							IP67 SELV	tc: 85°C ta: 60°C		
GLDP-060X080 (X = M, R)							IP67 SELV	tc: 85°C ta: 60°C		
GLDP-060X180 (X = M, R)							IP67	tc: 85°C ta: 60°C		

© MODEL ENCODING

GLDP	-	60	X	Y
Series name		Rated Output Power [W]	R - no dimming M - 2-10V, PWM dimming	045 - max output voltage is 45V 080 - max output voltage is 80V 180 - max output voltage is 180V

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© ELECTRICAL SPECIFICATION

MODEL	GLDP-060X045	GLDP-060X080	GLDP-060X180
OUTPUT			
VOLTAGE RANGE	20 ÷ 45VDC	45 ÷ 80VDC	80 ÷ 180VDC
NO LOAD VOLTAGE (MAX.)	60VDC	100VDC	200VDC
CURRENT ADJUSTMENT RANGE	0.36 ÷ 1.80A	0.21 ÷ 1.05A	0.14 ÷ 0.7A
RATED POWER	59.85W	60W	60.2W
FACTORY CURRENT / VOLTAGE	1.67A / 36VDC	1.05A / 57VDC	0.7A / 86VDC
CURRENT ACCURACY	± 5.0%		
LINE REGULATION (FROM 115VAC TO 305VAC)	± 1.0%		
LOAD REGULATION (FROM 50% TO 100% LOAD)	± 3.0%		
CURRENT RIPPLE FOR LED LOAD (PEAK TO PEAK)	< 20% I _{OUT}		
SETUP TIME	< 3s / 230VAC at full load		

INPUT			
VOLTAGE RANGE	90 ÷ 305VAC		
FREQUENCY RANGE	47 ÷ 63Hz		
EFFICIENCY AT 100% LOAD (TYP.)	86% / U _{OUT} = 33VDC	87% / U _{OUT} = 57VDC	87% / U _{OUT} = 86VDC
	86% / U _{OUT} = 45VDC	87% / U _{OUT} = 80VDC	86% / U _{OUT} = 180VDC
Refer to Efficiency vs. Output Voltage Curve			
AC CURRENT (MAX.)	0.9A		
INRUSH CURRENT (MAX.)	75A / 230VAC		
STANDBY POWER CONSUMPTION	< 6W		
LEAKAGE CURRENT (MAX.)	0.75mA / 230VAC		
POWER FACTOR (TYP.)	0.96 / 230VAC at full load		
THD	< 20% / 230VAC at 100% load		

PROTECTIONS			
SHORT CIRCUIT	Type: hiccup mode, auto-recovery.		
OVER VOLTAGE	60 ± 2VDC	100 ± 2VDC	200 ± 5VDC
	Type: shut off output voltage, restart on to recovery.		
OVER TEMPERATURE	Temperature of enclosure > 85°C		
	Type: Output current is limited in 30% (typ.)		

WORKING ENVIRONMENT			
WORKING TEMPERATURE	-40°C ÷ 60°C (Refer to Derating Curve)		
WORKING HUMIDITY	20 ÷ 95% RH non-condensing		
STORAGE TEMPERATURE AND HUMIDITY	-40°C ÷ 85°C, 20 ÷ 95% RH non-condensing		
VIBRATION	10 to 500Hz sweep at constant acceleration 1G (depth 3.5mm) for 1 hour for each X, Y, Z axes		
DEGREE OF PROTECTION	[2]	IP67	

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SAFETY AND EMC REGULATIONS

SAFETY STANDARDS	CB	IEC61347-1; IEC61347-2-13
	CE	EN61347-1; EN61347-2-13
EMC STANDARDS	CE	EN55015; EN61000-3-2; EN61000-3-3; EN61547
WITHSTAND VOLTAGE	IN/OUT: 3.75kVAC; IN/GND: 1.6kVAC; OUT/GND: 1.6kVAC; 60s, current < 10mA	
GROUNDING RESISTANCE	< 0.1Ω (60s/25A)	
INSULATION RESISTANCE	IN/OUT, IN/GND, OUT/GND > 50MΩ (500VDC/60s)	

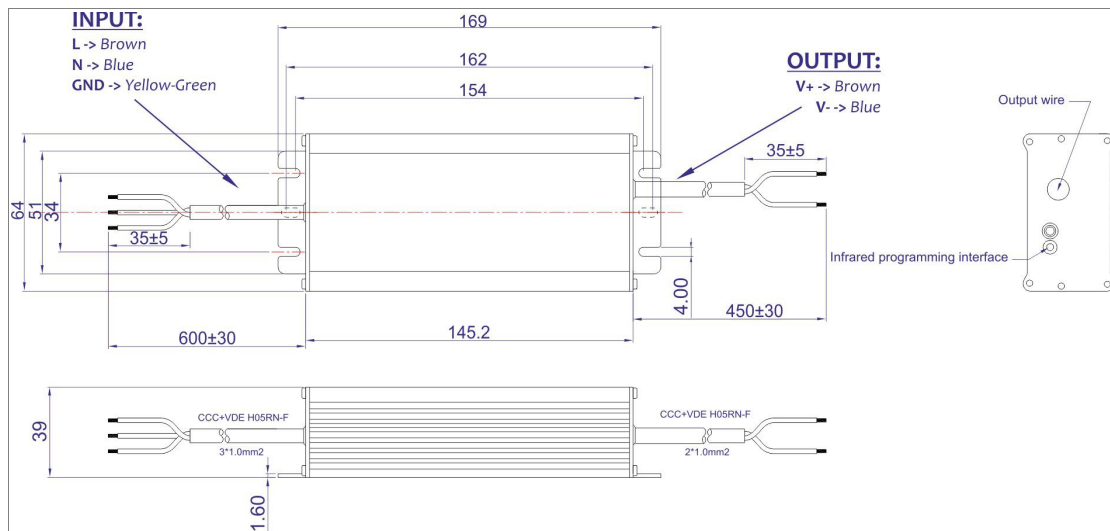
OTHERS

Input Wire	H05RN-F 3 x 1.0mm ² , length = 600 ± 30mm
Output Wire	H05RN-F 2 x 1.0mm ² , length = 450 ± 30mm
Dimming Wire (only for M model)	2 x 22AWG, length = 400 ± 30mm
MTBF	200 000h at 230VAC / 80% load and ta < 25°C
Life Time (min.)	50 000h at 230VAC / 100% load and tc < 45°C (Refer to Life Time vs. T _c Curve)
Dimensions (Length * Width x Height)	169 * 64 * 39mm
Weight	700 ± 50g

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
2. Suitable for indoor or outdoor use. Please avoid direct exposure to sunlight and immersion in water for over 30 minutes.
3. Power supply is considered as component not indented to apply by end-user. Power supply meets safety and EMC standards however the final equipment with power supply must be re-quality to comply with EMC and LVD Directives.

© MECHANICAL SPECIFICATION

GLDP-060R type

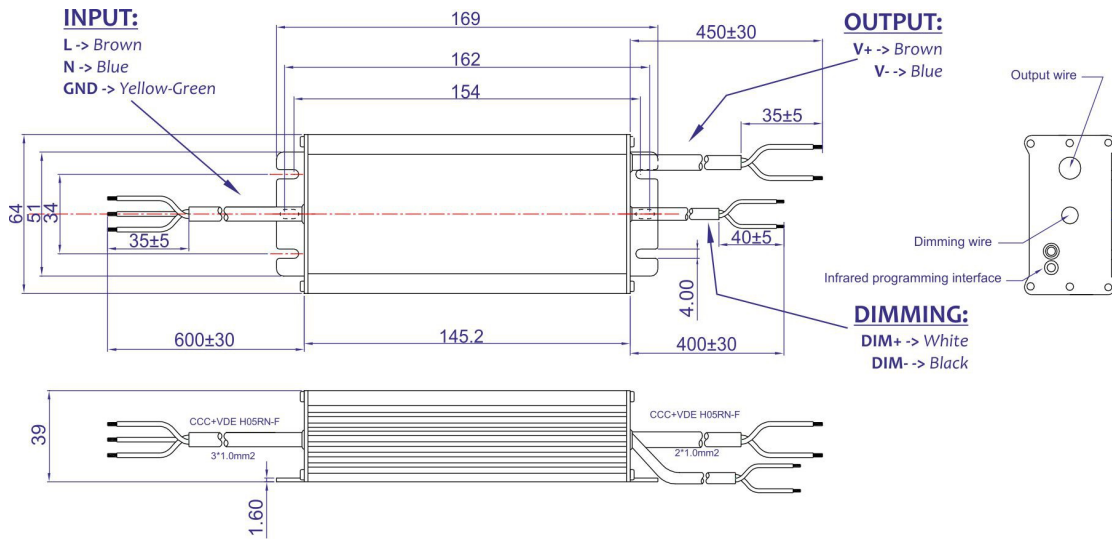


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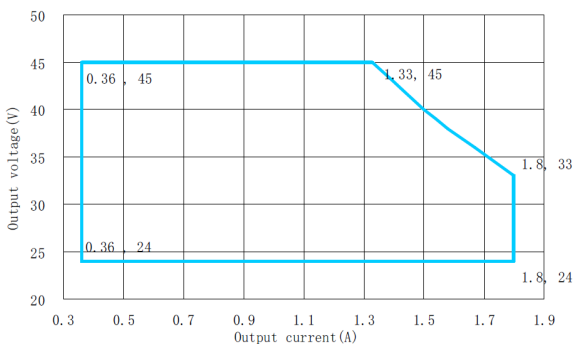


GLDP-060M type

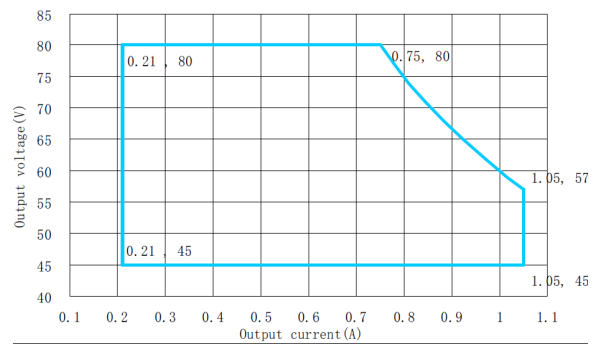


© Maximum Output Voltage vs. Output Current Curve

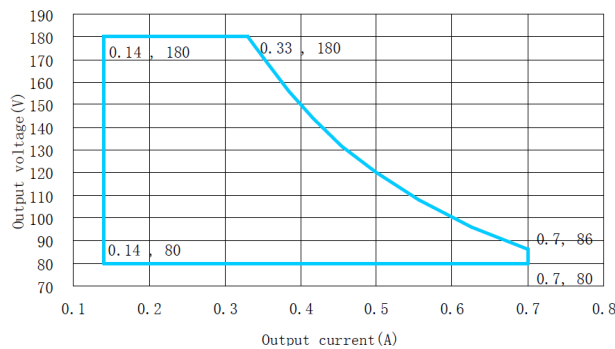
GLDP-060X045



GLDP-060X080



GLDP-060X180



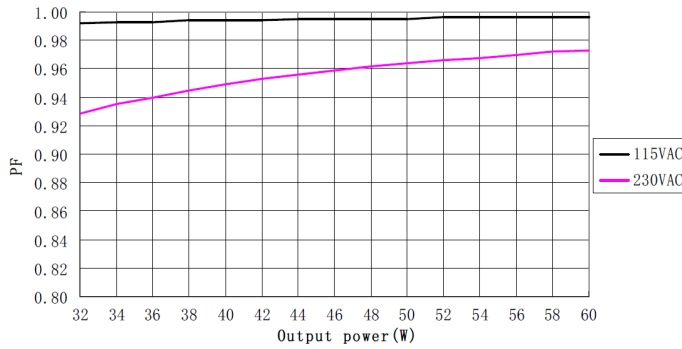
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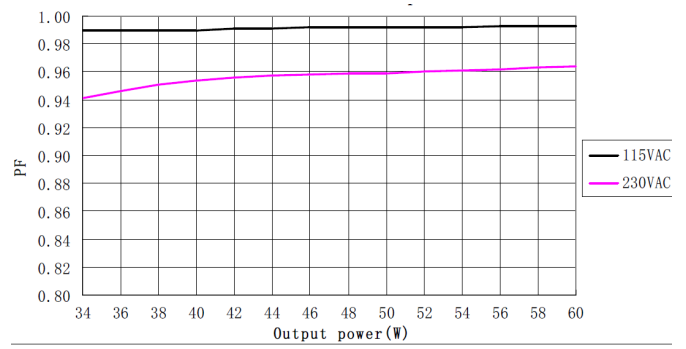


© Power Factor vs. Output Power Curve

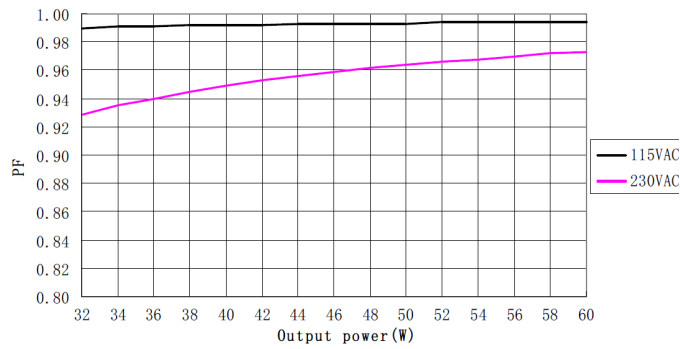
GLDP-060X045



GLDP-060X080

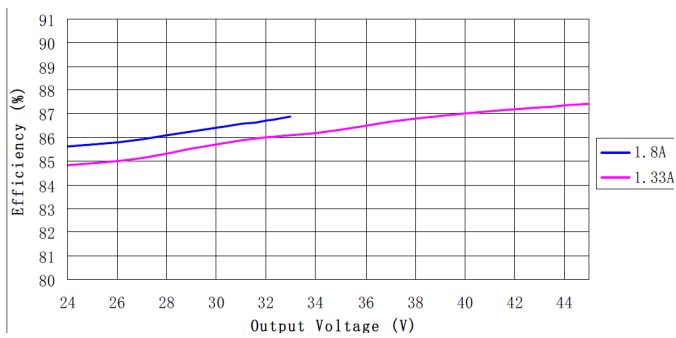


GLDP-060X180

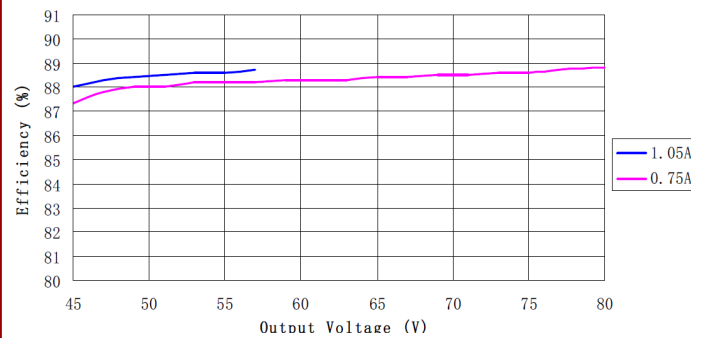


© Efficiency vs. Output Voltage Curve for 230VAC input

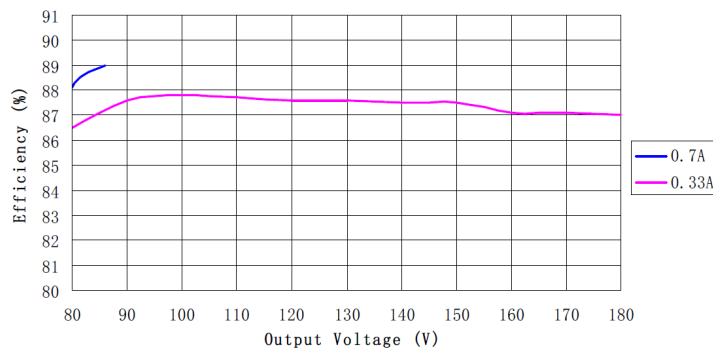
GLDP-060X045



GLDP-060X080



GLDP-060X180

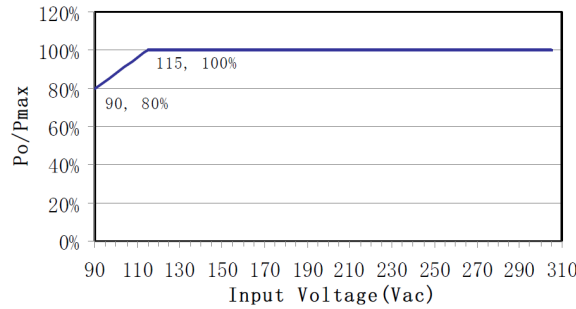


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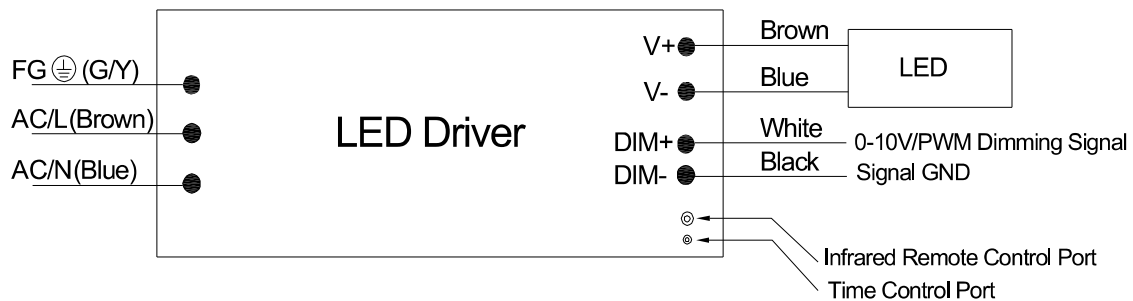
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© P_O/P_{MAX} vs. U_{IN} Voltage



© DEFINE OF INTERFACE



PWM Dimming

Frequency	250Hz ÷ 1kHz
High Voltage Level	9.7 ÷ 10.3V or 4.85 ÷ 5.15V
Low Voltage Level	0 ÷ 0.3V
Sink Current	< 2.0mA
Open Circuit of Dimming	100% output current
Linear Dimming Range	20% ÷ 100% I_r
Short Circuit of Dimming	20% I_r output current

0 – 10 Dimming

Dimming Signal Voltage	0 ÷ 10Vpp (±1%)
Sink Current	< 2.0mA
Open Circuit of Dimming	100% output current
Linear Dimming Range	20% ÷ 100% I_r
Short Circuit of Dimming	20% I_r output current

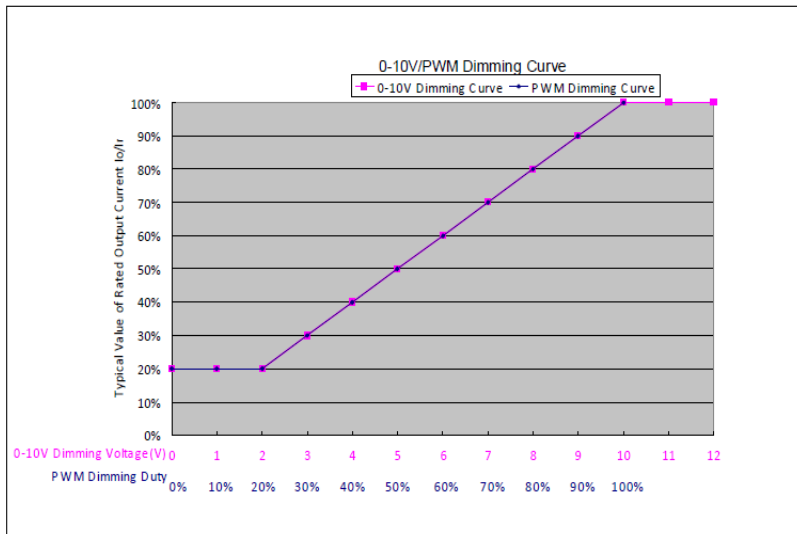
1. When connect external dimmer to LED driver, for the external driver, the maximum sink current should >70uA, maximum output current should >2mA..
2. I_r is maximum output current.
3. PWM dimming mode: detect outside PWM duty, change the output current depend the PWM duty, change the output current depending on proportion.
4. 0-10V dimming mode: detect outside voltage level of 0-10V dimming signal, change the output current depend the voltage level; change the output current depending on proportion
5. At two in one dimming mode, the maximum revolution definition is 1% at PWM mode, when voltage level of PWM is less than 10V, 99% duty is 100% I_r output, 100% duty is process as 0-10V dimming signal.
6. Can setting to 0-5V dimming by programmer.

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© DIMMING CURVE

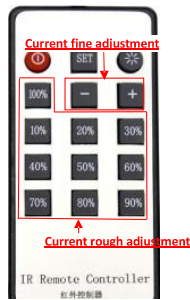


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© PROGRAMMING GUIDE

- Configure Iout with IR controller.

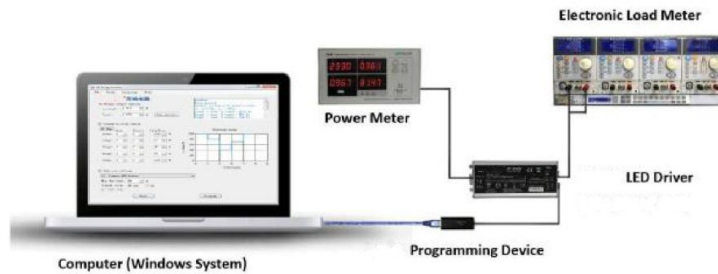


IR remote controller

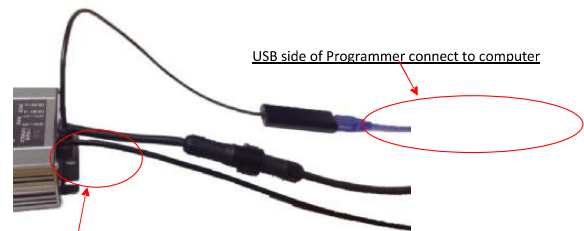
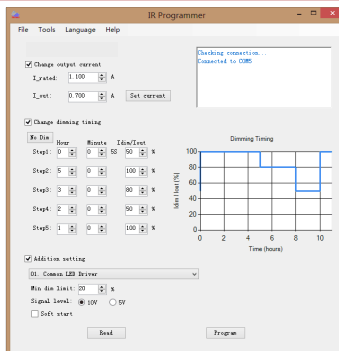


Insert the signal terminal into the bigger hole at the driver output side

- Software and programming device.



- Software for changing the dimming signal level or start-up model.



IR side of programmer connect to power supply