



## Product Features

- Input voltage range: 108~305Vac;
- Constant power design, output current programming adjustable;
- 3-in-1 dimmable: 0~10Vdc, PWM, Timer dimming. Dim-to-off;
- Constant lumen output;
- Auxiliary power supply: 12V/200mA;
- Surge protection: 5KV line-line, 10KV line-earth;
- Protections: SCP, OVP, OTP;
- IP20 design for indoor and outdoor applications;
- Suitable for dry / damp / wet locations;
- 5 years warranty.

## Application

- Suitable for horticulture lighting, high power lighting, etc.

## DESCRIPTION

The P1-600W series is 600W outdoor offline programmable LED driver that operates in constant current with high PF value and universal input voltage range 108~305Vac model. Offline Monitored by dimming cable connected with an USB kit programming device, the fully programmed drivers offer all dimming, dim-to-off, constant lumen output options and a wide range of output current in a single driver, which deliver maximum flexibility with customized operating settings and intelligent control options for lighting manufacturers, as one driver can be programmed for many different luminaire designs. P1-600W provides built-in timer dimming schedules further increasing the energy savings and CO<sub>2</sub> reductions achieved with LED lighting. It also helps clients to improve the management of logistics and stock. The compact metal case and high efficiency enables the driver to operating with high reliability, and extending product lifetime. Overall protection is provided against lightening surge, output over voltage, short circuit, and over temperature, to ensure low failure rate.

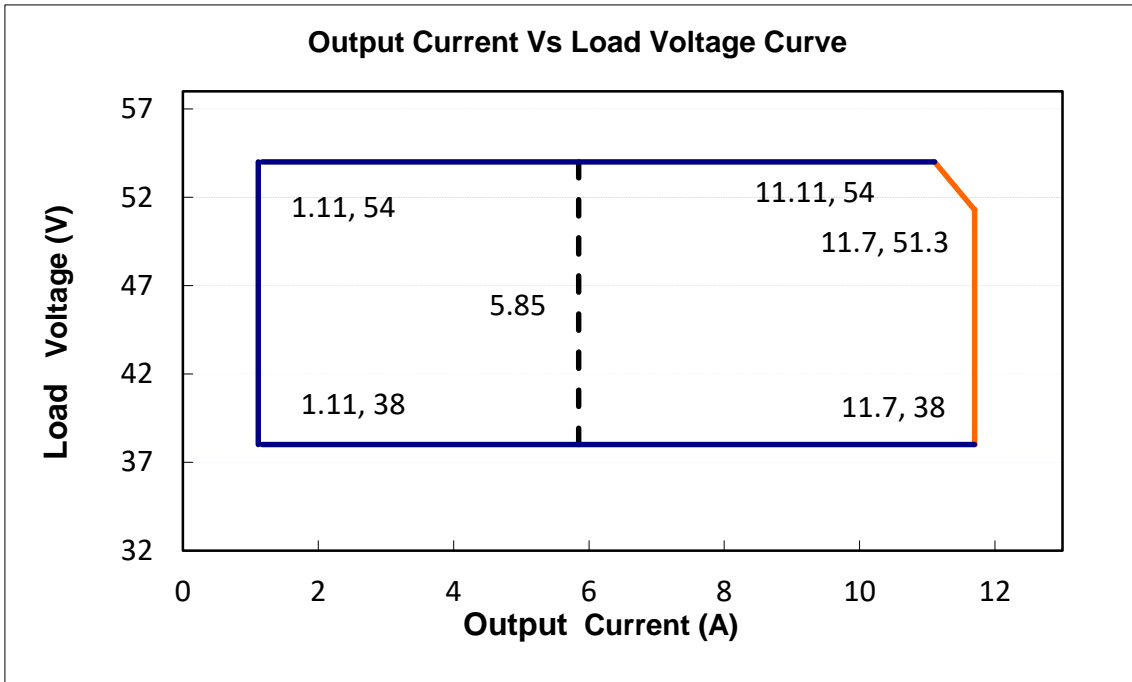
## MODELS

Model Number	Max Output Power (W)	Output Voltage Range (Vdc)	Full Power Output Voltage Range (Vdc)	Output Current Adjustable Range (A)	Default Output Current Setting(A)	Typical Efficiency	PF
P1-600M056A12RJ	600	38~54	51.3~54	1.11~11.7	51.3V/11.7A	94%@277	0.95@277

## Notes:

All specifications are measured at 25°C ambient temperature, input voltage 277Vac, and the typical value tested by full load, if no specific note.

OPERATING AREA I-V



INPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	108Vac	120-277Vac	305Vac	
Input Frequency	47Hz	50/60	63Hz	
Leakage Current	-	-	0.75mA	277Vac/60Hz
Input AC Current	-	-	5.97A	120-277Vac & full load
Inrush Current	-	-	37A	277Vac & full load
			9.8A <sup>2</sup> S	277Vac & full load
Standby Power Consumption	-	-	1.5W	Dim to off, AUX. Power no load
Power Factor	-	0.98	-	120Vac, 50Hz, full load
		0.95	-	277Vac, 50Hz, full load
THD	-	-	20%	120Vac, 50-60Hz, 60%-100% load
			20%	277Vac, 50-60Hz, 60%-100% load

### OUTPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Output Current Setting Range (A)	10% I <sub>max</sub>	-	100%I <sub>max</sub>	
Output Current Tolerance(%)	-5	-	5	
Output Current Setting Range (A)	1.11	-	11.7	
No Load Output Voltage (V)	-	-	58	
Total Output Current Ripple(pk-pk)	-	±5%	10%	20MHz BW, full load& LED load, the ripple would be tiny different under different LED load.
Startup Overshoot Current (%)	-	-	20	120~277Vac &100% Load, load is LED
Line Regulation (%)	-1	-	1	25°C±10°C ambient temperature, input voltage changes from 108Vac to305Vac.
Load Regulation (%)	-3	-	3	25°C±10°Cambient temperature, Input Voltage 230Vac, load changes from 38-54V.
AUX. Power output voltage (V)	11.4	12	12.6	
AUX. Power output current(mA)	0	200	-	
Turn-on Delay Time (S)	-	-	3	120Vac, 100%load,10-90%Vo
	-	-	2	230Vac, 100%load,10-90%Vo

### GENERAL SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Efficiency @120Vac I <sub>o</sub> =11.7A	91%	92%	-	Measured at full load and 25°Cambient temperature
Efficiency @277Vac I <sub>o</sub> =11.7A	93%	94%	-	
Dielectric Strength	Input-Output	-	3750Vac	Max 5mA/60S
	Input-PE	-	1600Vac	
	Output-PE	-	1600Vac	
Grounding Resistance (Ω)	-	-	0.1	25A/60S, under 25°C±10°Cambient temperature
Insulation Resistance (MΩ)	100	-	-	Input-Output, Input-PE, Output-PE, 500Vdc/60S/25°C/70%RH
MTBF (Hr)	-	500000	-	Telcordia SR-332,100% load, & Ta = 25°C
Lifetime (Hr)	-	50000	-	75°C case temperature, refer to lifetime curve for details
Ambient Temperature (°C)	-20		+50	
Operating Case Temperature for Safety T <sub>c_s</sub> (°C)	-20	-	+90	
Operating Ambient Temperature for Warranty T <sub>a_s</sub> (°C)	-20	-	+90	5 years warranty case temperature Humidity: 10% to 95% RH
Storage Temperature (°C)	-40	-	+85	Humidity: 10% to 95% RH
Working elevation (m)	-50	-	4000	

Dimensions (L*W*H)mm	L356*W106*H50mm;	
Net Weight	3300±300g/PCS	
Package	L490xW500xH185 6PCS/Ctn, Gross Weight:20.4Kg	

### DIMMING

Parameter	Min.	Typ.	Max.	Notes
0~10V Absolute Maximum Voltage on the Vdim (+) Pin (V)	-	10	-	
0~10V Source Current on Vdim(+)Pin (mA)	-	0.2	0.4	
Dimming On Vol. (V)	0.6	0.7	0.8	Io_min. = 10 +/- 3% of Io_max.
Dimming Off Vol. (V)	0.3	0.4	0.5	
Dimming Output Range	10% I <sub>max</sub>	-	100% I <sub>max</sub>	
Recommended Dimming Range for 0-10V (V)	0	-	10	
PWM_in High Level (V)	9.7	-	10.5	
PWM_in Low Level (V)	0	-	0.3	
PWM_in Frequency Range	300Hz		3KHz	
PWM_in Duty Cycle	1%	-	99%	
Knob Dimming Tolerance	-8% I <sub>max</sub>		+8% I <sub>max</sub>	
Knob Dimming Level	0%, 25%, 50%, 100%			

### SAFTY STANDARDS

Safety Category	Country / Territory	Standards	Approved
CCC	China	GB19510.1, GB19510.14	
CE	Europe	EN61347-1, EN61347-2-13	√
		EN62493	√
		EN62384	√
CB	CB Countries	IEC61347-1, IEC61347-2-13	√
UL	USA	UL 8750	√
CUL	Canada	CSA C22.2 No.250.13	

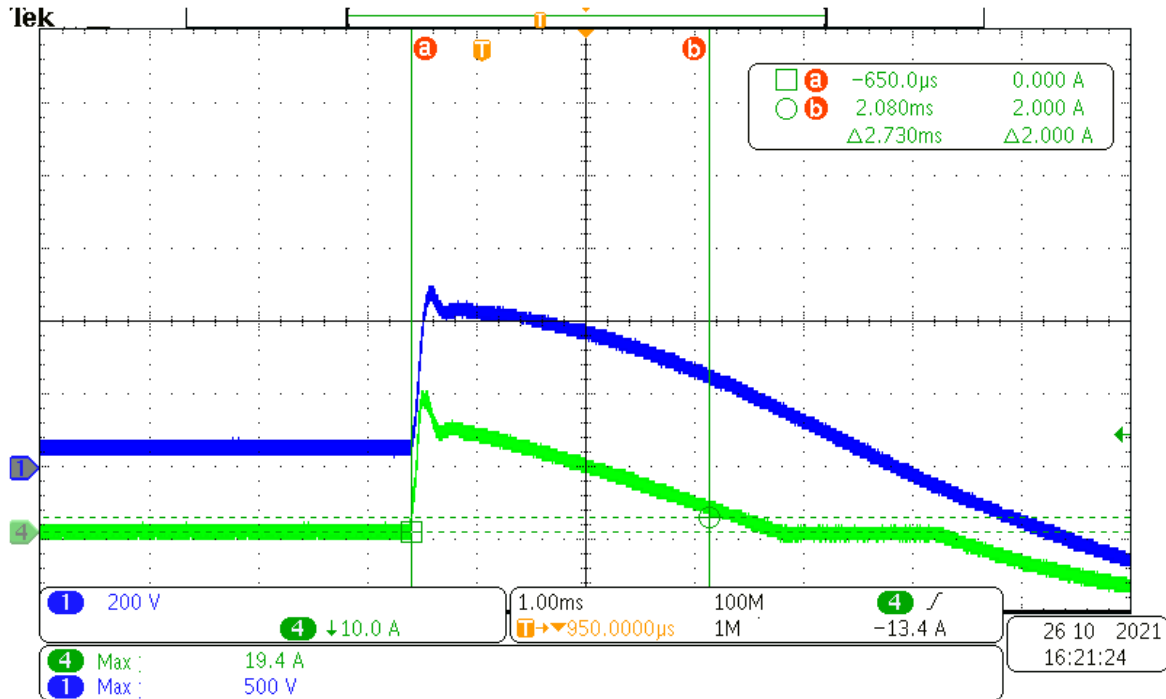
### SAFTY STANDARDS

Safety Category	Country / Territory	Standards	Approved
CCC	China	GB/T 17743, GB 17625.1	
CE	Europe	EN 55015	Class B
		EN 61000-3-2, EN 61000-3-3	Class C
		EN61000-4-2,3,4,5,6,11	Class B
		EN 61547	
FCC	USA	FCC part 15	Class B

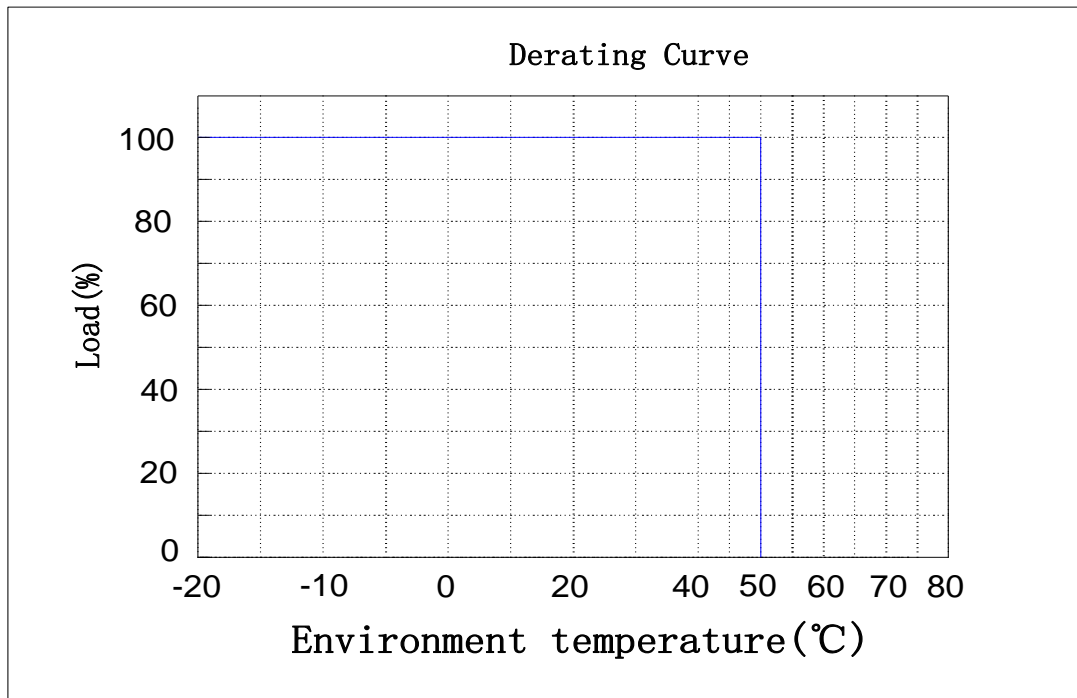
### NOTE:

This LED driver meets the EMI specifications above, but as a component of a luminaire, end customer need to identify the EMI performance of a luminaire including LED driver, other devices connected to the driver and on the luminaire itself.

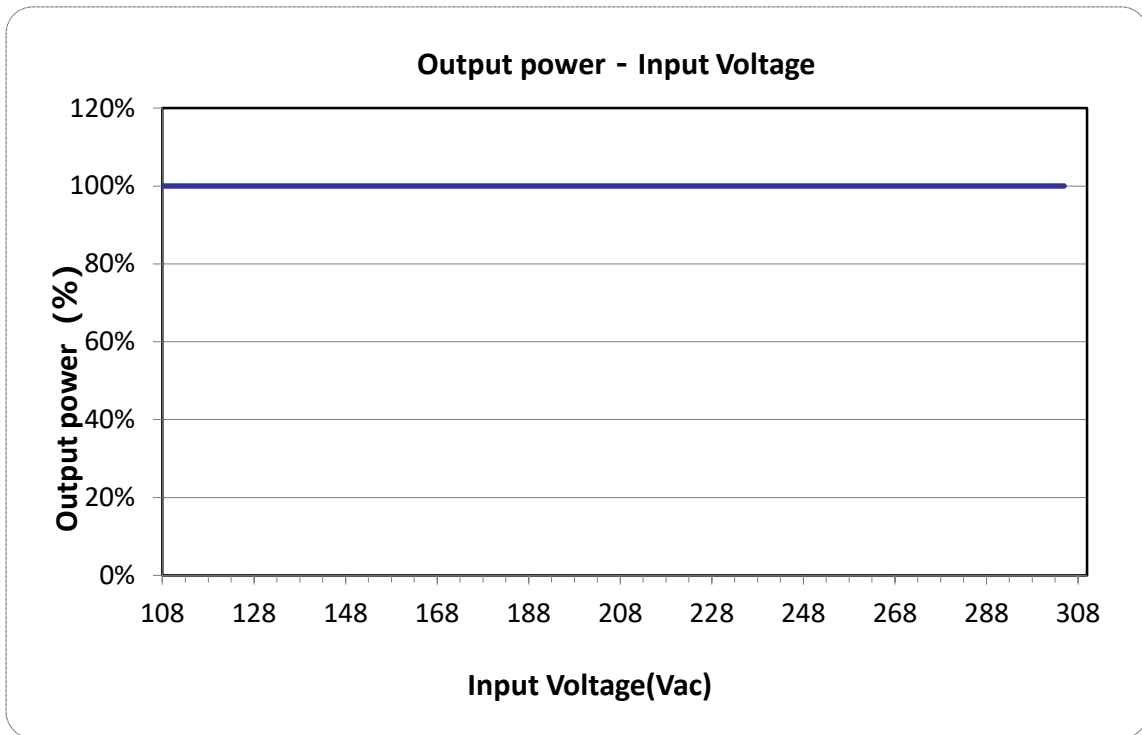
## INRUSH CURRENT WAVEFORM



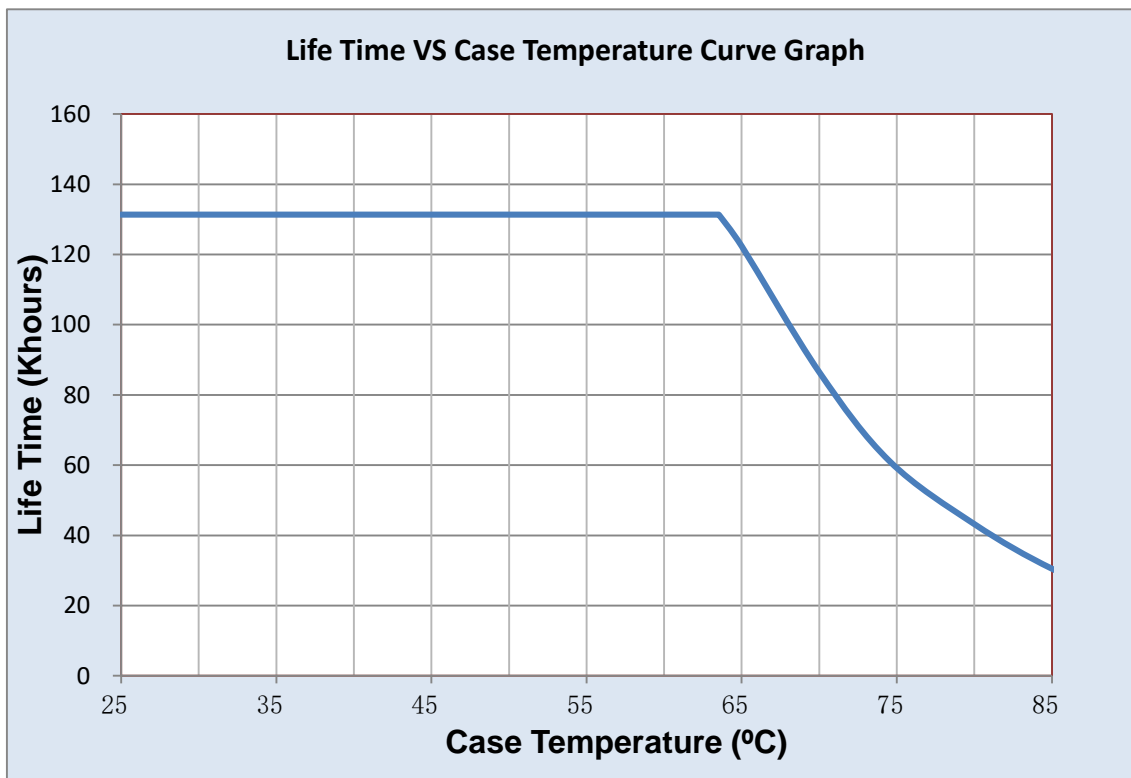
## DERATING CURVE



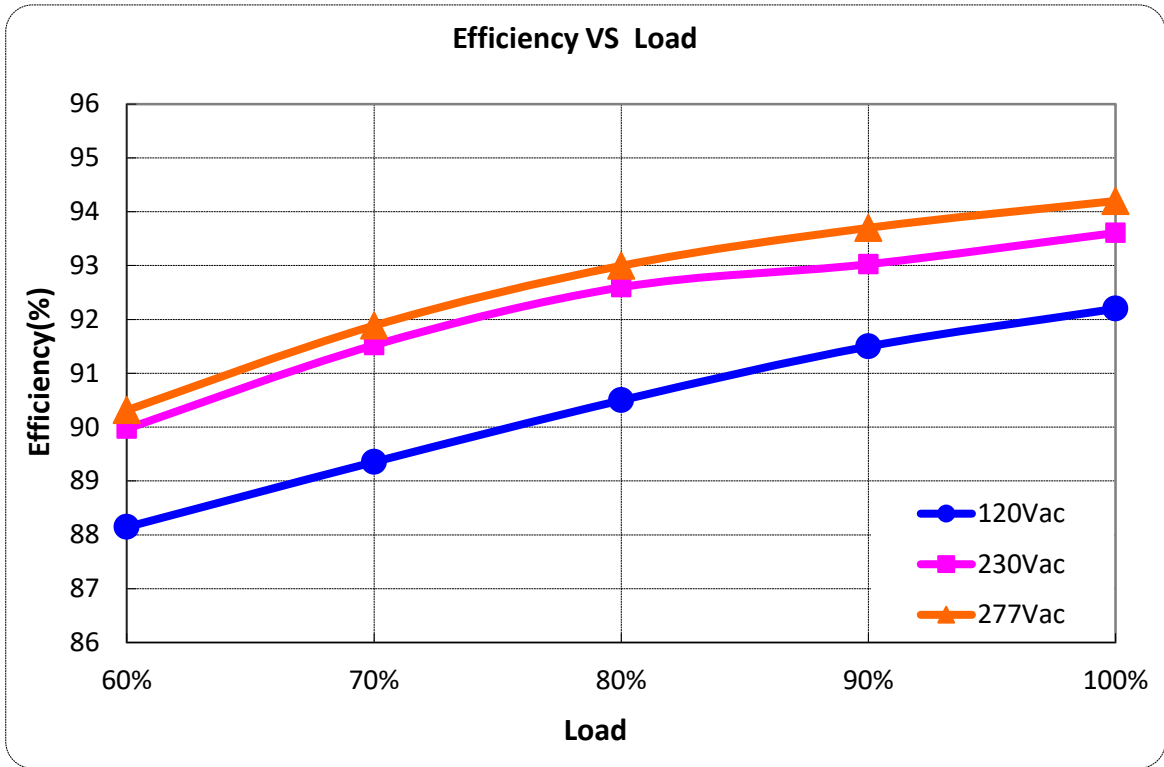
## OUTPUT POWER VS INPUT VOLTAGE



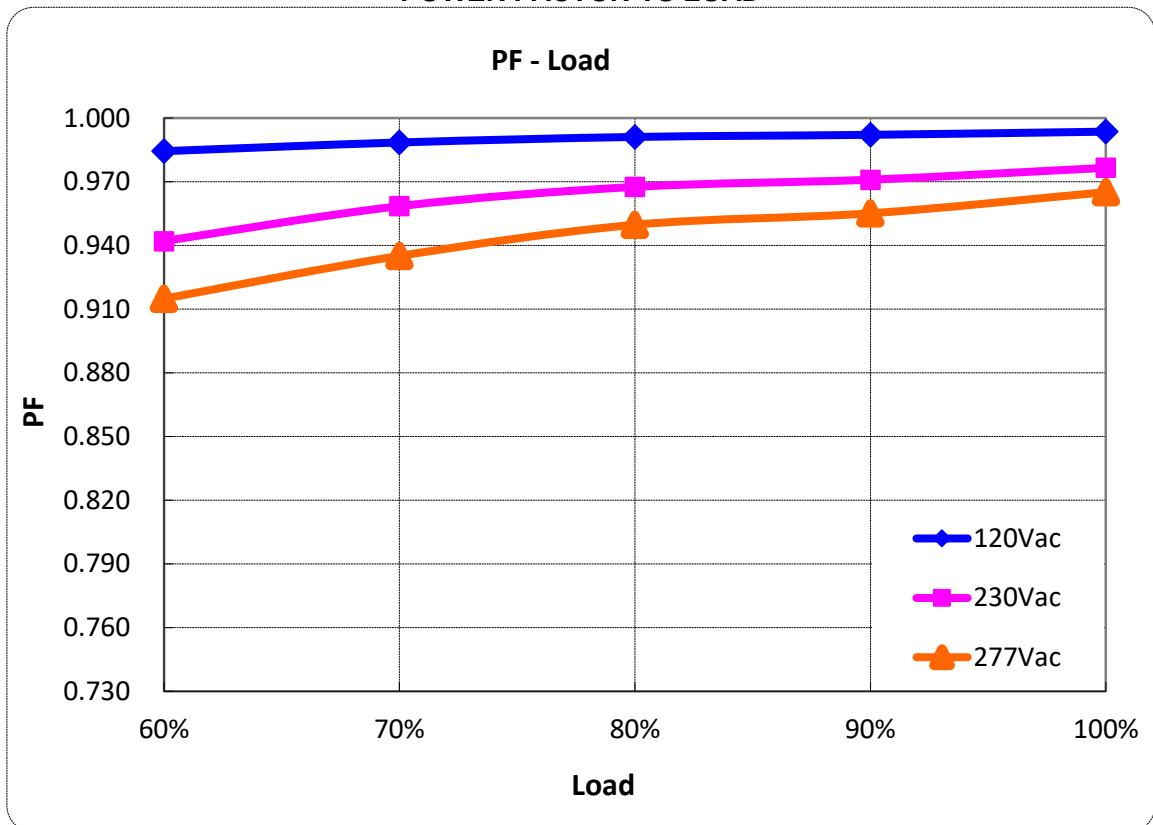
## LIFETIME VS CASE TEMPERATURE



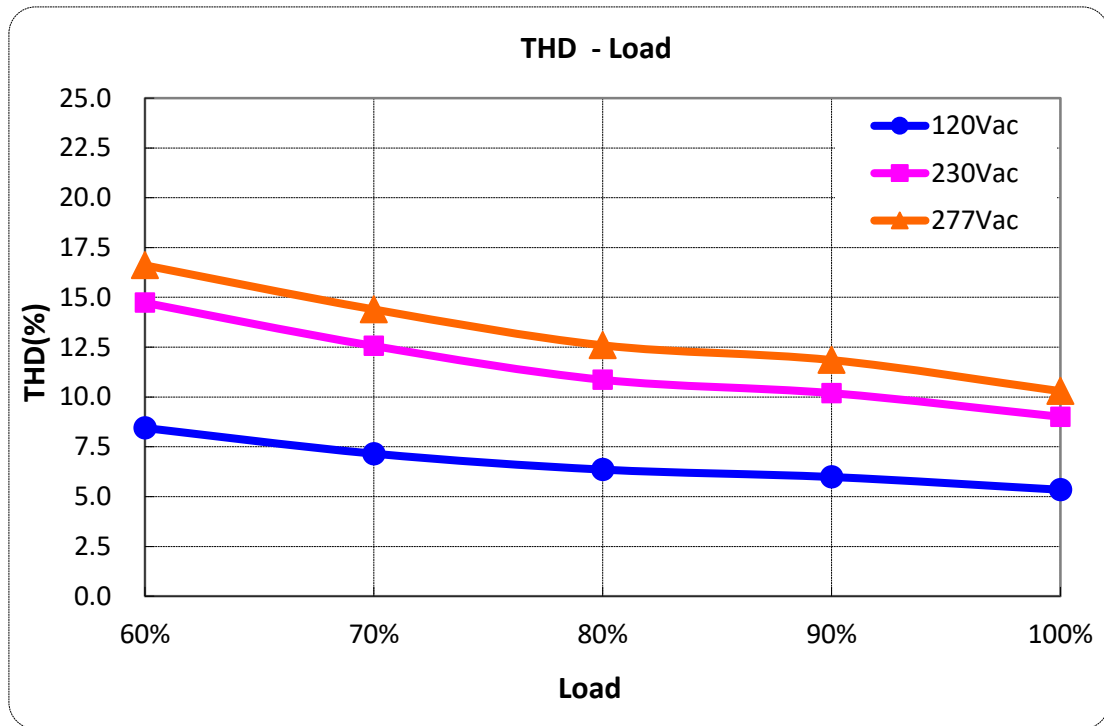
## EFFICIENCY VS LOAD



## POWER FACTOR VS LOAD

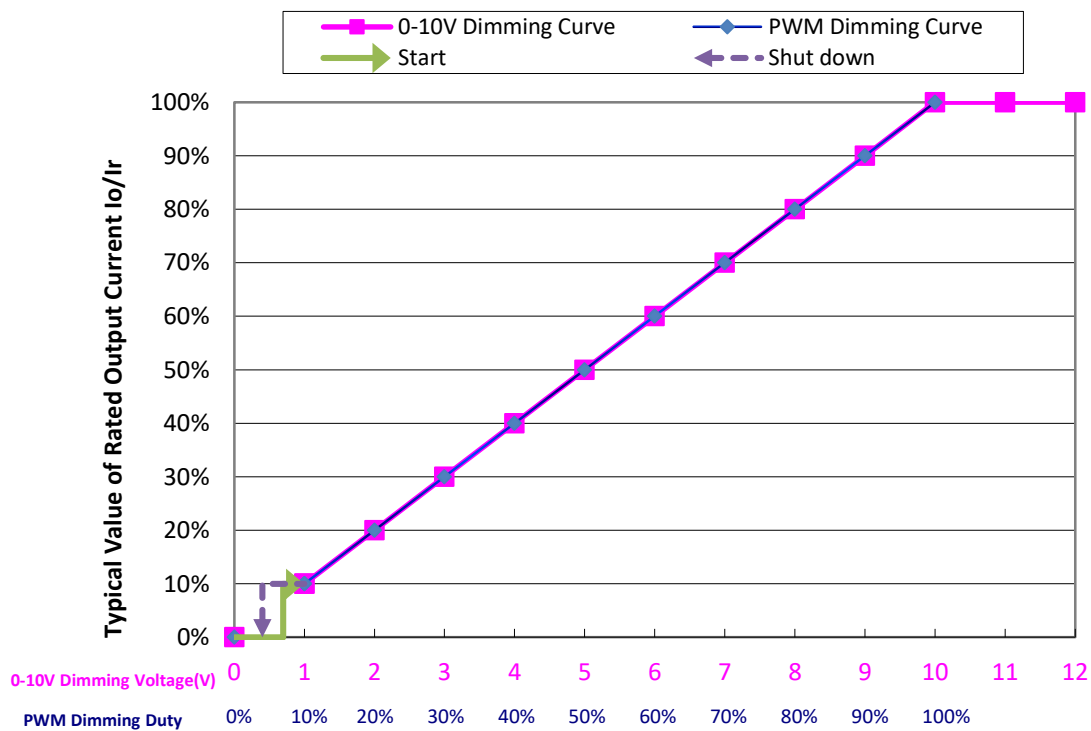


## TOTAL HARMONIC DISTORTION



## 0-10V/PWM DIMMING

0-10V/PWM Dimming Curve



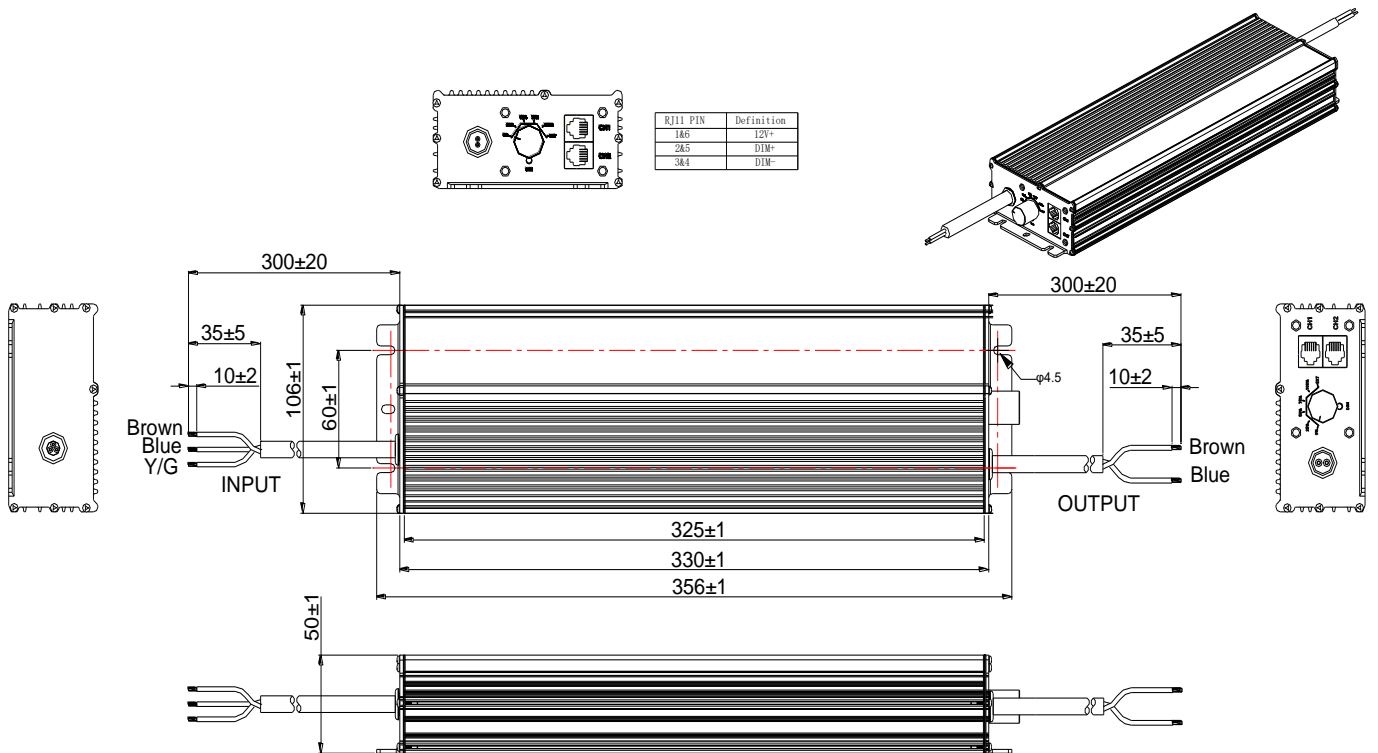
**NOTE: Dimming Off Voltage: 0.4V typical, Dimming On Voltage: 0.7V typical.**



## PROTECTIONS

Parameter	Notes
Over Temperature Protection	Decreases output current, returning to normal after over temperature is removed.
Short Circuit Protection	Constant current mode and auto recovery. No damage will occur when any output is short circuited. The output shall return to normal when the fault condition is removed.
Over Voltage Protection	Run into protection model when output voltage exceeds limit, and return to normal when the fault condition is removed.

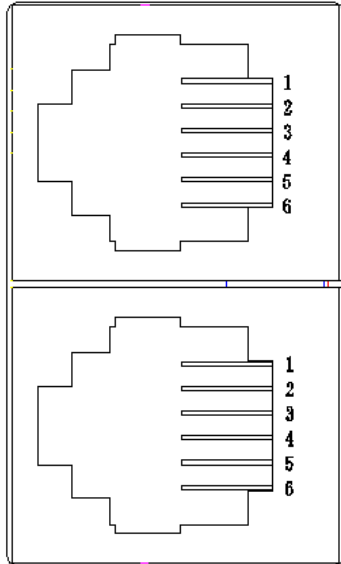
## MECHANICAL OUTLINE



Wire	Specification	Note
Input	CCC+CE H05RN-F *3C L=300±20mm	CCC/CE
Output	CCC+CE H07RN-F *2C L=300±20mm	CCC/CE

### RJ11 PORT & KNOB DIMMER DEFINITION

- 0 -10V dimming
- Relay signal, CH1 of the first machine receives the signal and transmits it to CH1 of the second machine through CH2, and so on
- Daisy Chain function
- Offline programming without AC power



RJ11 PIN	Definition
1&6	12V+
2&5	DIM+
3&4	DIM-

Knob Dimmer	Definition
OFF	DIM OFF
25%	25% loset
50%	50% loset
75%	75% loset
100%	100% loset
EXT	External Dimming

### LABEL





VERSION HISTORY

Version	Description of Change		Date	Notes
	Before	Now		
A.1	—	Datasheets Release	2023-04-18	
B.2		ECL202305012	2023-05-16	Chen hai yang



## Specification for Approval

Product Name: 600W Constant Current LED Driver

Product Model: P1-600M056A12RJ

Rev. B.2

Sample Date: -

CUSTOMER AUTHORIZED SIGNATURE		
Tested By	Checked By	Approved By
(Company seal)Return one copy to MOSO with approved signature and company seal.		

XiLi Songbai Road 1061, Nanshan  
Address: District, Shenzhen City, Guangdong Province, P.R.China Post Code: 518108  
TEL: 0755-27657000 FAX: 0755-27657908  
E-mail: info@mosopower.com Web site: http://www.mosopower.com

Prepared By	Checked By	Approved By

## Product Specification

Product Name: 600W Constant Current LED driver

Product Model: P1-600M056A12RJ

Rev. B.2

XiLi Songbai Road 1061, Nanshan  
Address: District, Shenzhen City, Guangdong Province, P.R.China Post Code: 518108  
TEL: 0755-27657000 FAX: 0755-27657908  
E-mail: info@mosopower.com Web site: http://www.mosopower.com

Prepared By	Checked By	Approved By