

Product Features



- Input voltage range: 249~528Vac;
- 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;
- IP67 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 P1H-320W series is 320W outdoor offline programmable LED driver that operates in constant current with high PF value and universal input voltage range 249~528Vac 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. P1H provides built-in timer dimming schedules further increasing the energy savings and CO₂ 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 [1]	Max Output Power (W)	Output Voltage Range (Vdc)	Full Power Output Voltage Range (Vdc)	Output Current Adjustable Range (A) [2]	Default Output Current Setting(A)	Typical Efficiency [3]	PF
P1H-320M056A12	320	38-54	51.2-54	0.625-6.25	51.2V/6.25A	94%	0.95@480

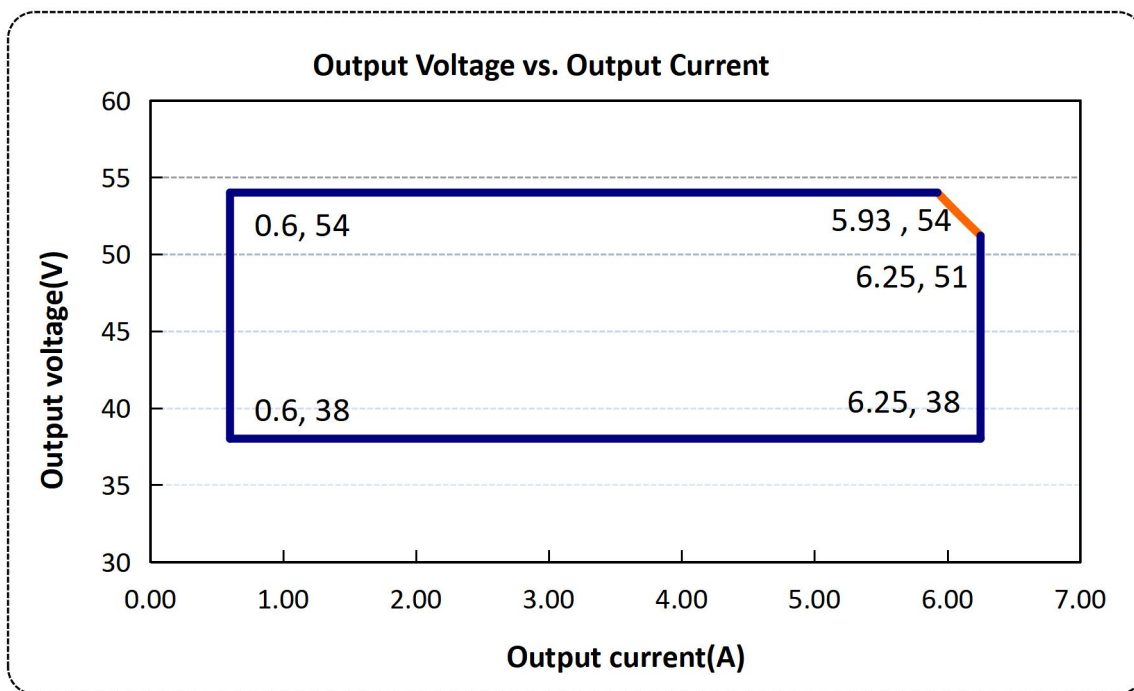
Notes:

[1]. A12 means the driver with 12V/200mA auxiliary power supply.

[2]. Output current adjustable range with constant power at max output power.

[3]. All specifications are measured at 25℃ ambient temperature, input voltage 480Vac, 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	249Vac	277-480Vac	528Vac	
Input Frequency	47Hz	50/60	63Hz	
Leakage Current	-	-	0.75mA	480Vac/50Hz
Input AC Current	-	-	1.41A	277-480Vac & full load
Inrush Current (Cold start)	-	-	56A	400Vac & full load
			18 A ² S	400Vac & full load
			68A	480Vac & full load
Standby Power Consumption		1.5w		Dim to off, AUX. Power no load 480 Vac
Power Factor	0.97	0.99	-	277Vac, 50-60Hz, full load
	0.93	0.95		480Vac, 50-60Hz, full load
THD	-		20%	277Vac, 50-60Hz, 50%-100% load
	-	-	20%	480Vac, 50-60Hz, 70%-100% load

OUTPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Output Current Setting Range (A)	10% I _{max}	-	100% I _{max}	
Output Current Tolerance(%)	-5	-	5	
Output Current Setting Range (A)	0.625	-	6.25	The 'M type' adjustable lout range: 10%-100% I _{max} .
No Load Output Voltage (V)	-	-	60	
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	277~480Vac &100% Load, load is LED
Line Regulation (%)	-1	-	1	25°C±10°C ambient temperature, input voltage changes from 277Vac to480Vac.
Load Regulation (%)	-3	-	3	25°C±10°C ambient temperature, Input Voltage 480Vac, load changes from 60% to 100%.
AUX. Power output voltage (V)	11.4	12	12.6	Only for A12 version
AUX. Power output current(mA)	0		200	
Turn-on Delay Time (S)	-	-	3	277Vac, 100%load,10-90%Vo
	-	-	2	480Vac, 100%load,10-90%Vo

GENERAL SPECIFICATIONS

Parameter		Min.	Typ.	Max.	Notes
Efficiency @277Vac I _o =6.25A		91%	92%	-	Measured at full load and 25°C ambient temperature
Efficiency @480Vac I _o =6.25A		92%	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°C ambient temperature
Insulation Resistance (MΩ)		10	-	-	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	-	277-480Vac&100% load, 75°C case temperature, refer to lifetime curve for details
Ambient Temperature (°C)		-20		+50	Reference derating curve
Operating Case Temperature for Safety T _{c_s} (°C)		-20	-	+90	TA 50°C Max load,Input 277-480Vac
Operating Case Temperature for Warranty T _{c_s} (°C)		-20	-	+75	5 years warranty case temperature Humidity: 10% to 95% RH
Storage Temperature (°C)		-40	-	+85	Humidity: 10% to 95% RH
Working elevation		0m	-	3000m	

Dimensions (L*W*H)mm	L285*W85*H50mm;	
Net Weight	2000±100g/PCS	
Package	L590mm*W445mm*H185mm; 10PCS/Ctn, Gross Weight:20 Kg	

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 Output Range(A)	P1H-320M056A12	10%	-	100% I _{max}	I _{max} =6.25A
	P1H-320M056A12	0.625		6.25	
Recommended Dimming Range for 0-10V (V)		0	-	10	Default(0-10V/ PWM) Dimming
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%	

SAFETY STANDARDS

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

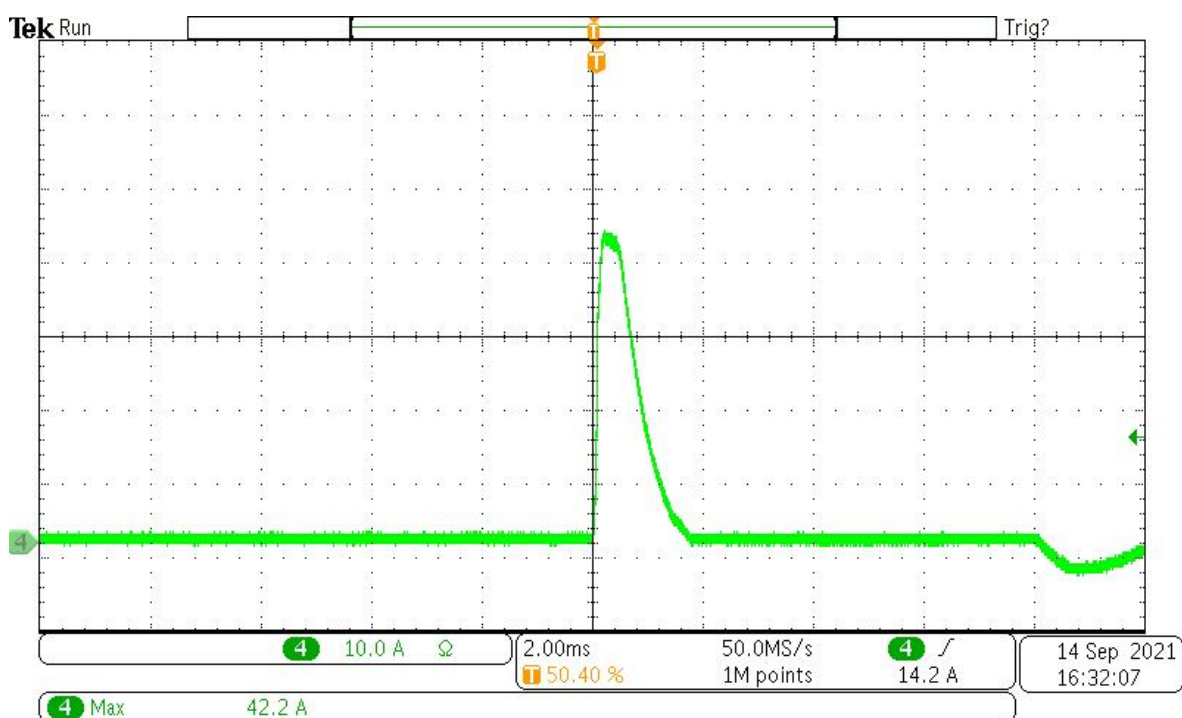
EMC STANDARDS

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

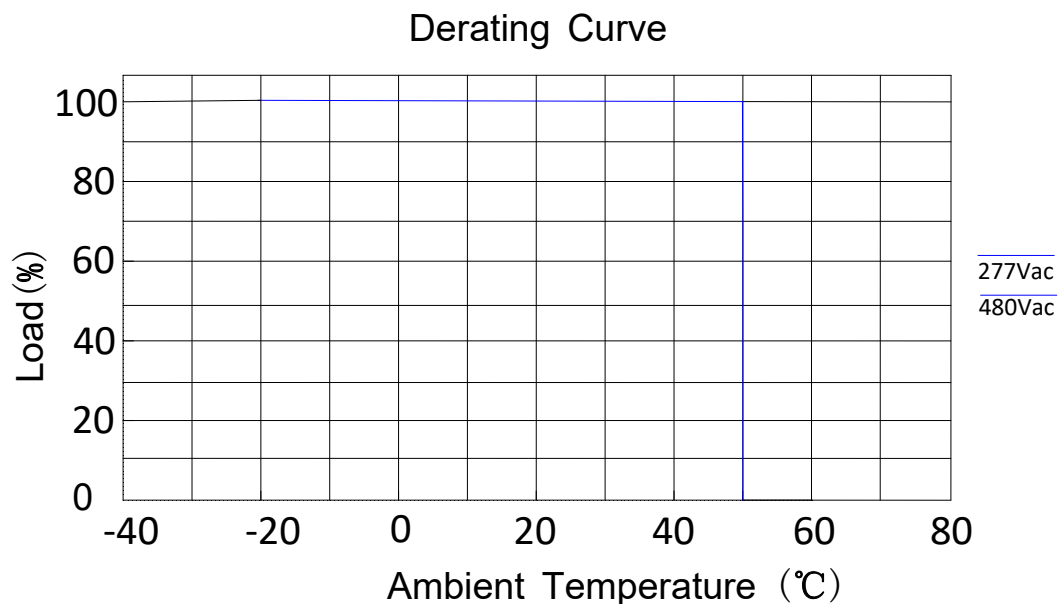
NOTE:

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.

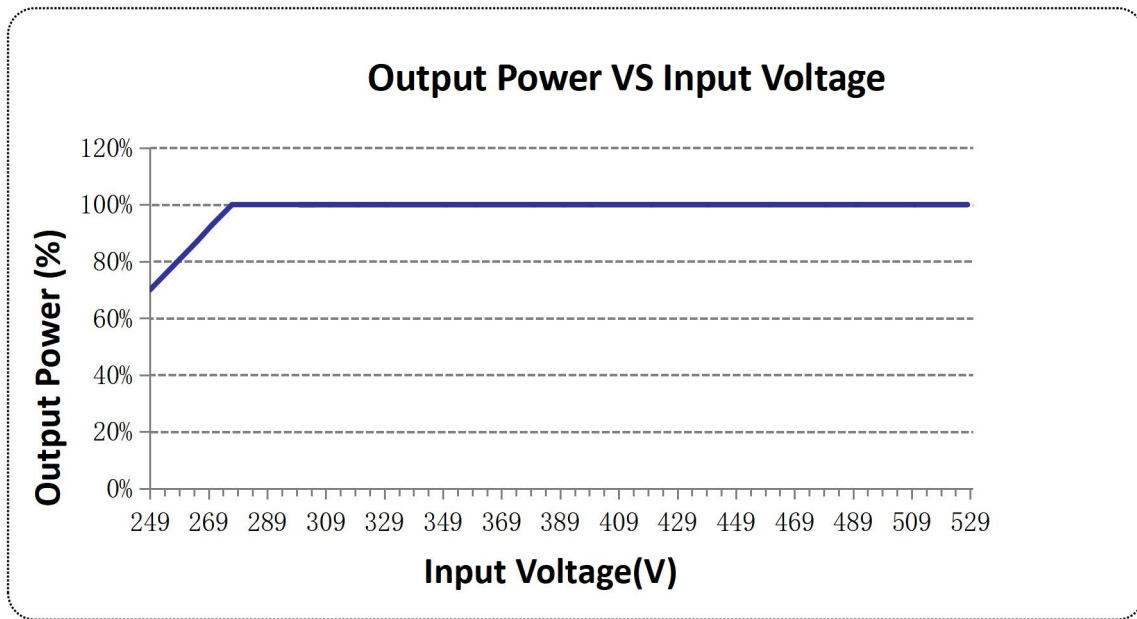
INRUSH CURRENT WAVEFORM



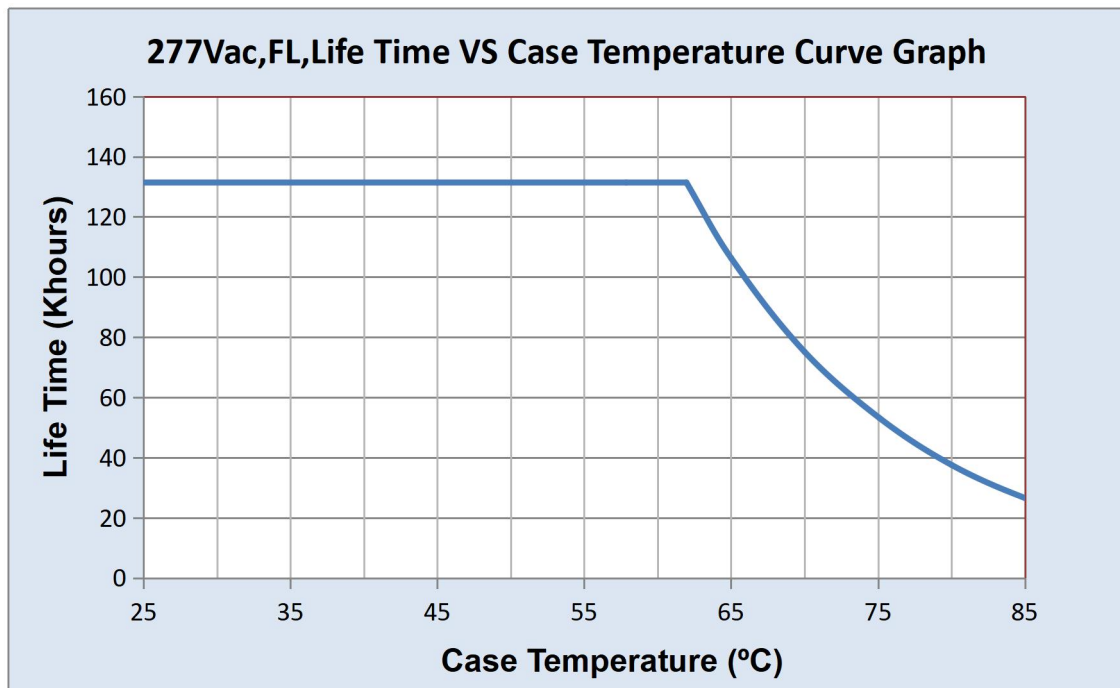
DERATING CURVE



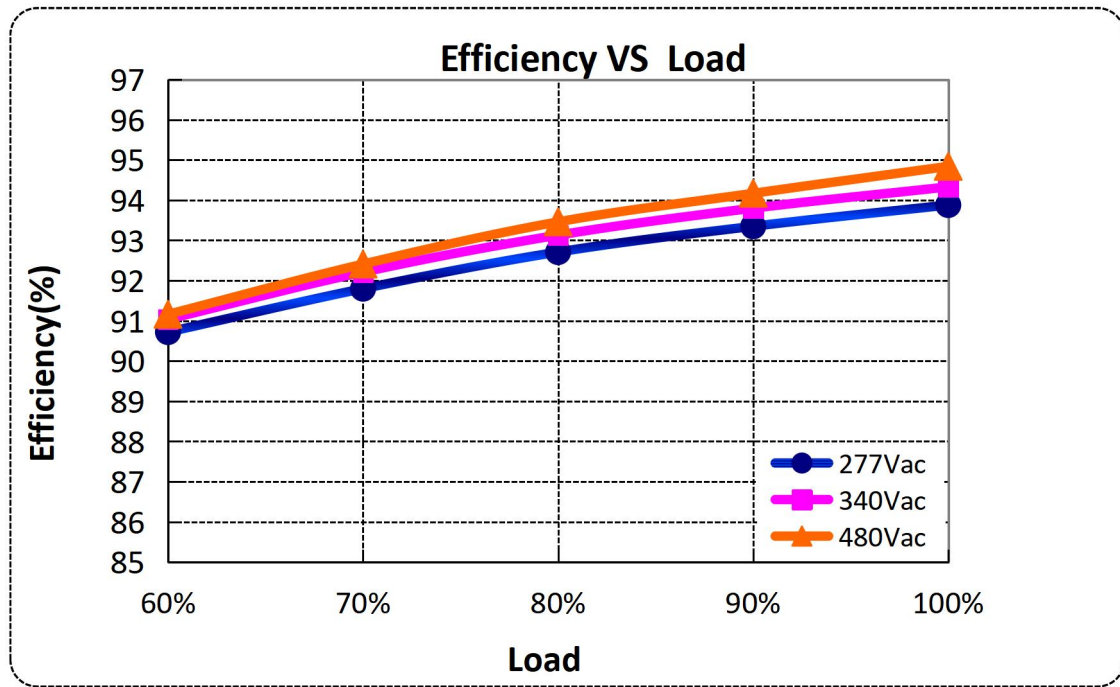
OUTPUT POWER VS INPUT VOLTAGE



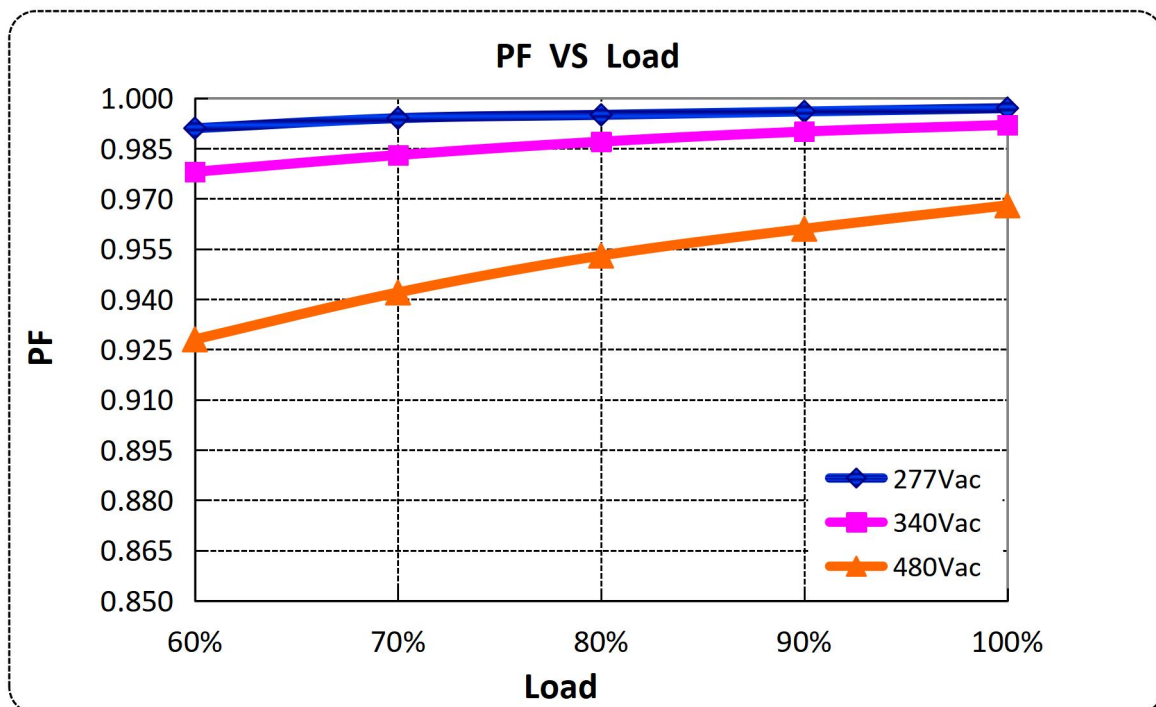
LIFETIME VS CASE TEMPERATURE



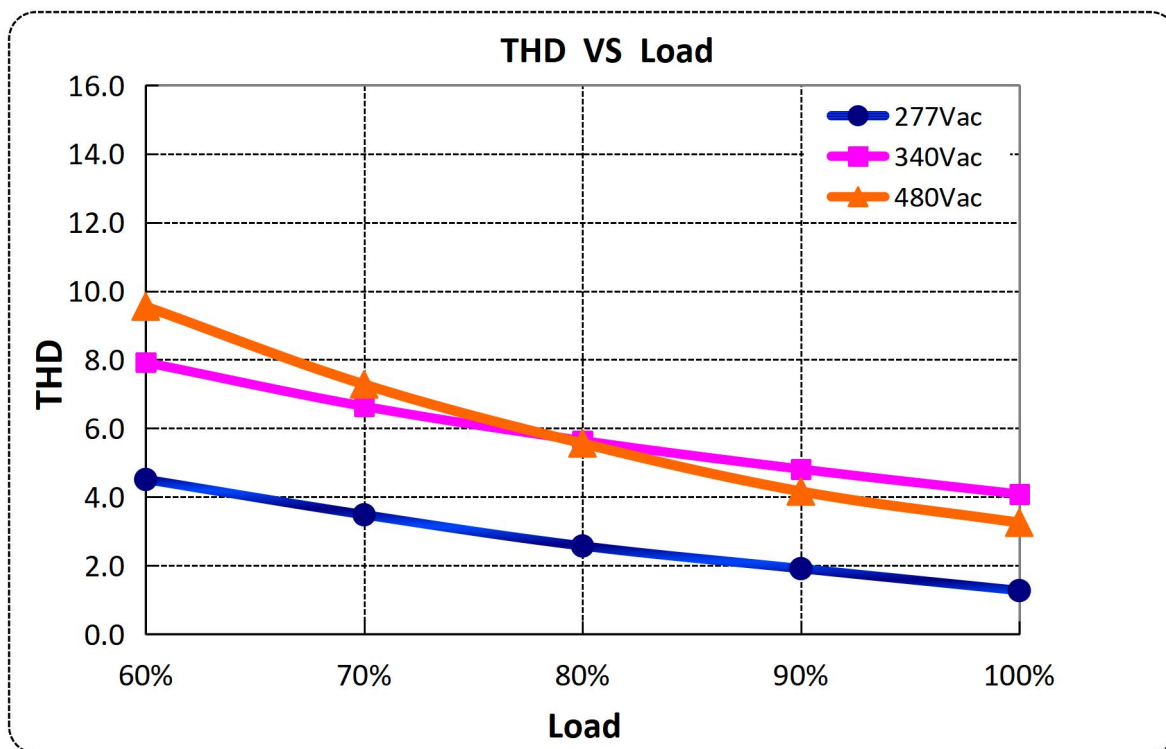
EFFICIENCY VS LOAD



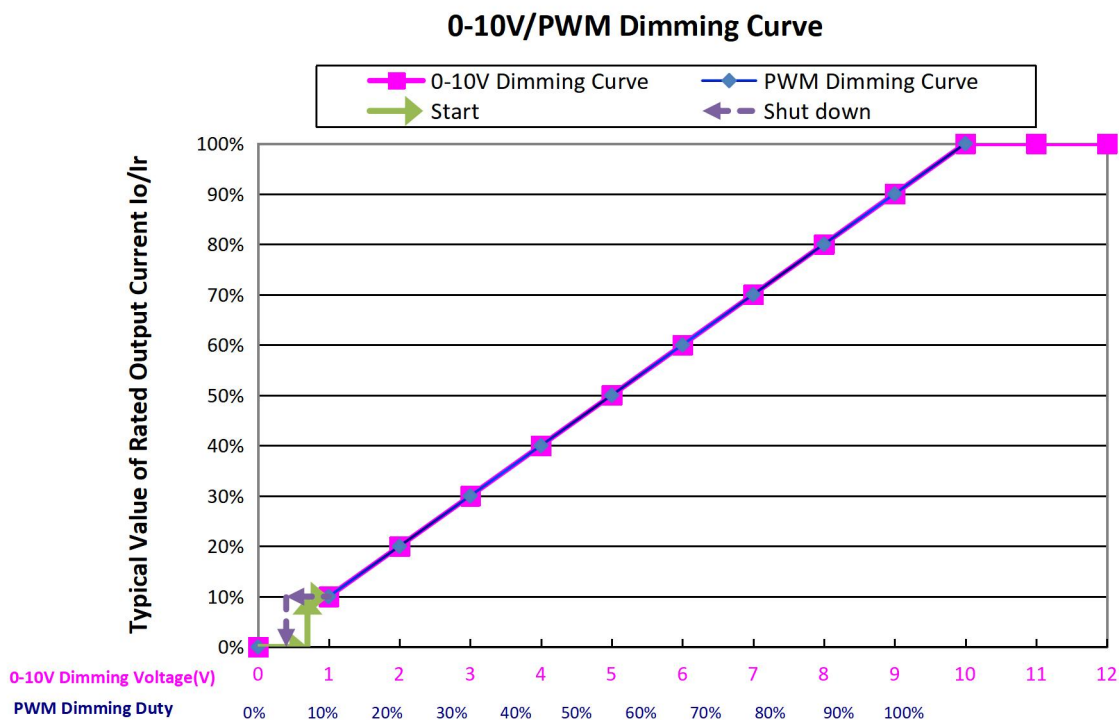
POWER FACTOR VS LOAD



TOTAL HARMONIC DISTORTION



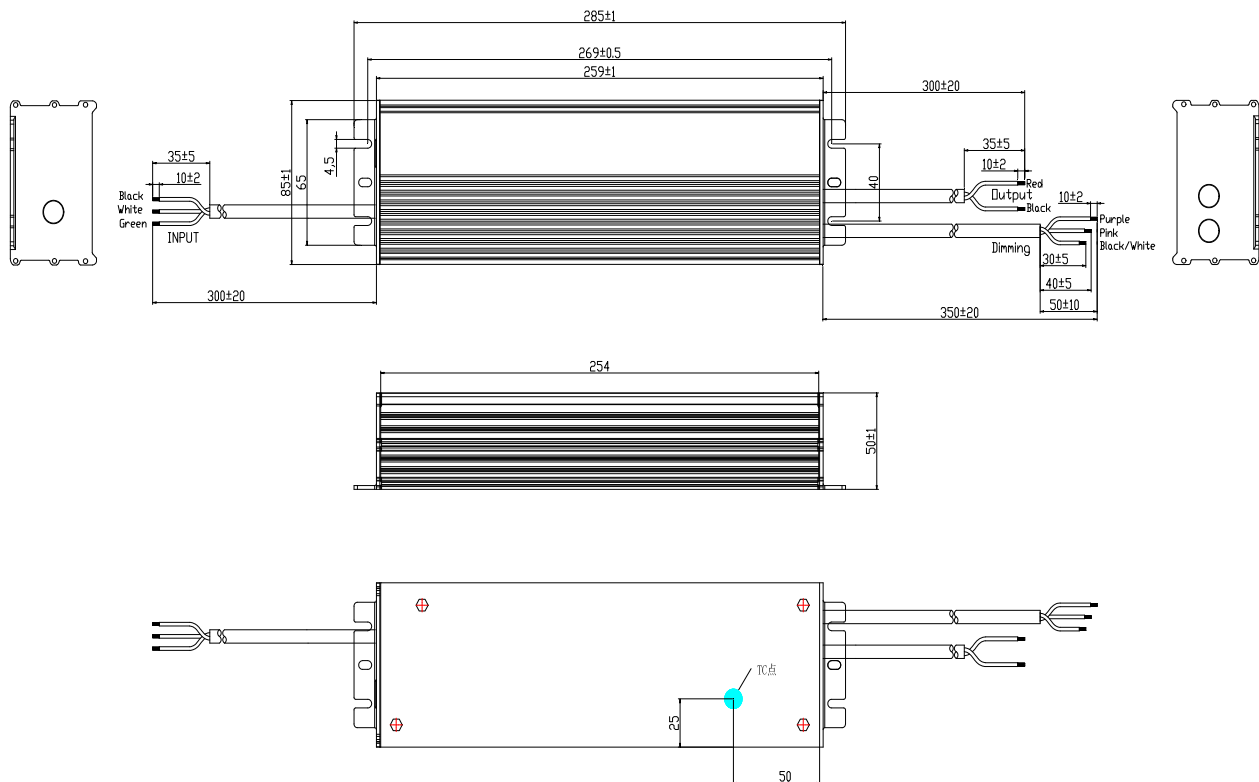
0-10V/PWM DIMMING



PROTECTIONS

Parameter	Notes
Over Temperature Protection	Turn off 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 is eliminated and restart the power supply

MECHANICAL OUTLINE



Wire	Specification	Note
Input	STW 18AWG*3C external diameter: 9.3mm L=300±20mm	UL
Output	SJTW 14AWG*2C external diameter: 8.7mm L=300±20mm	UL
Dimming	UL21996 22AWG*3C external diameter: 5.0mm L=350±20mm	Y=M

LABEL



REVISION HISTORY

[illegible]

Specification for Approval

Product Name: 320W Plant Lighting Off-line Programmable
Product Model: P1H-320M056A12 ☒
Sample Date: B.3

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

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Prepared By	Checked By	Approved By



Product Specification

Product Name: 320W Plant Lighting Off-line Programmable
Product Model: P1H-320M056A12 ☒
Rev. B.3

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