



Product Features:

- Input voltage range: 277~480Vac;
- Constant power design, output current programming adjustable;
- 3-in-1 dimmable: 0-10Vdc, PWM, Timer dimming, Dim-to-off;
- Constant lumen output, daily log;
- Output and Dimming Signal Isolating;
- Auxiliary power supply: 12V/250mA;
- Surge protection: 6KV line-line, 10KV line-earth;
- Protections: SCP, OVP, OTP, OPP;
- 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-680W series is 680W outdoor offline programmable LED driver that operates in constant current with high PF value and universal input voltage range 277~480Vac 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-680W 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)	Full Power Current Adjustable Range (A) [2]	Default Output Current Setting(A)	Typical Efficiency [3]	PF
P1H-680M305A12P	680	153-305	240-305	2.23-2.84	2.4	95%	0.95

Notes:

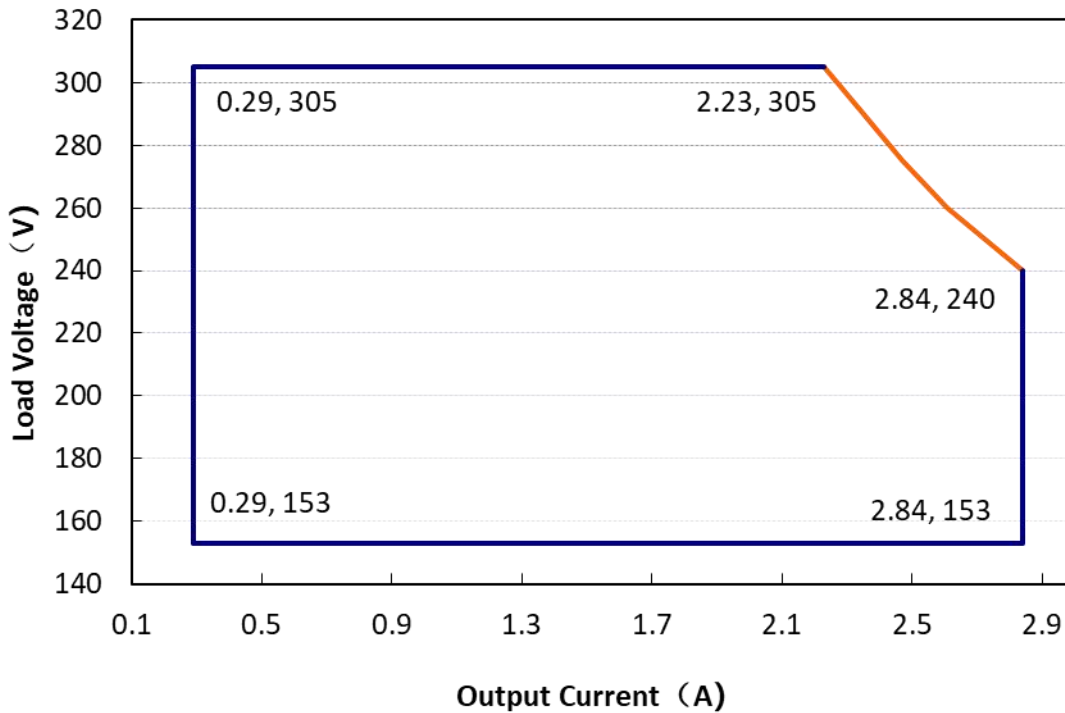
[1]. A12 means the driver with 12V/250mA auxiliary power supply.

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

[3]. All specifications are measured at 25°C ambient temperature, input voltage 480Vac, and the typical value tested by full load, if no specific note.

OPERATING AREA I-V

Output Current Vs Load Voltage Curve



INPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Input Voltage(Vac)	250	277~480	528	
Input Frequency(Hz)	47	50/60	63	
Leakage Current(mA)	-	-	0.75	480Vac/50Hz
Input AC Current(A)	-	-	3.0	277Vac & full load
Inrush Current(A)	-	-	50	480Vac & full load, Cold start, 25°C ambient temperature
Standby Power Consumption(W)	-	-	1.5	480Vac, Dim to off & AUX. Power no load
Power Factor	0.95	0.99	-	277Vac, 50-60Hz, 70%-100% load
	0.93	0.96	-	347Vac, 50-60Hz, 70%-100% load
	0.9	0.93	-	480Vac, 50-60Hz, 70%-100% load
THD(%)	-	8	15	277~347Vac, 50-60Hz, 70%-100% load
	-	10	20	347~480Vac, 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)	0.28	-	2.84	I _{max} (programmable I _o) : 2.84A I _{set-typ} (default I _o) : 2.4A
Full Power Current Adjustable Range (A)	2.23	-	2.84	Output voltage range:240-305Vdc
No Load Output Voltage(V)	-	-	330	
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 (%)	-	-	10	277~480Vac & 100% Load, load is LED
Line Regulation (%)	-3	-	3	25°C±10°C ambient temperature, input voltage changes from 277Vac to 480Vac.
Load Regulation (%)	-3	-	3	25°C±10°C ambient temperature, load changes from 60% to 100%.
Temperature Tolerance (%/°C)	-0.03	-	+0.03	T _c :0-90°C
AUX. Power output voltage (V)	11.4	12	12.6	
AUX. Power output current(mA)	0	250	300	
Turn-on Delay Time (mS)	-	-	500	277~480Vac, 100% load

GENERAL SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Efficiency @277Vac I _o =2.84A	93%	94.5%	-	Measured at full load and 25°C ambient temperature
Efficiency @480Vac I _o =2.84A	93.5%	95%	-	
Dielectric Strength	Input-Output	-	3750Vac	Max 5mA/60S
	Input-PE	-	1875Vac	
	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)	-	200000	-	Telcordia SR-332, 100% load, & T _a = 25°C
Lifetime (Hr)	-	50000	-	480Vac & 100% load, 75°C case temperature, refer to lifetime curve for details
Ambient Temperature (°C)	-40	-	+50	Reference derating curve
Operating Case Temperature for Safety T _{c_s} (°C)	-40	-	+90	

Operating Case Temperature for Warranty Tc_s (°C)	-40	-	+75	5 years warranty case temperature Humidity: 10% to 95% RH
Storage Temperature (°C)	-40	-	+85	Humidity: 10% to 95% RH
Output short circuit	-	-	10W	Recovers automatically after fault condition is removed.
Over temperature	-	90°C	95°C	Case temperature (Decreases output current when temperature rise, returning to normal after over temperature is removed.)
Working elevation	-50m	-	4000m	
Dimensions (L*W*H)mm	L341*W106*H50mm			
Net Weight	3.3±0.2kg/pcs			
Package	L490xW500xH185 6PCS/Ctn, Gross Weight:20Kg			

DIMMING

Parameter	Min.	Typ.	Max.	Notes
0~10V Absolute Maximum Voltage on the Vdim (+) Pin (V)	-	10	12	
0~10V Source Current on Vdim(+)Pin (mA)	-	0.2	0.3	
Dimming Output Range	10% I _{max}	-	100% I _{max}	I _{max} =2.84A
Recommended Dimming Range for 0-10V (V)	0	-	10.3	Default 0-10V/ PWM
PWM_in High Level (V)	9.7	-	10.3	
PWM_in Low Level (V)	0	-	0.3	
PWM_in Frequency Range (KHz)	0.3	-	2	
PWM_in Duty Cycle (%)	3	-	100	

SAFETY 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	√
BIS	India	IS 15885(PART 2/SEC 13)	
UL	USA	UL 8750	√
CUL	Canada	CSA C22.2 No.250.13	√
KC	South Korea	K61347-1, K61347-2-13	
PSE	Japan	J61347-1, J61347-2-13	
SAA	Australia	AS/NZS IEC 61347.2.13	
		AS/NZS 61347.1	

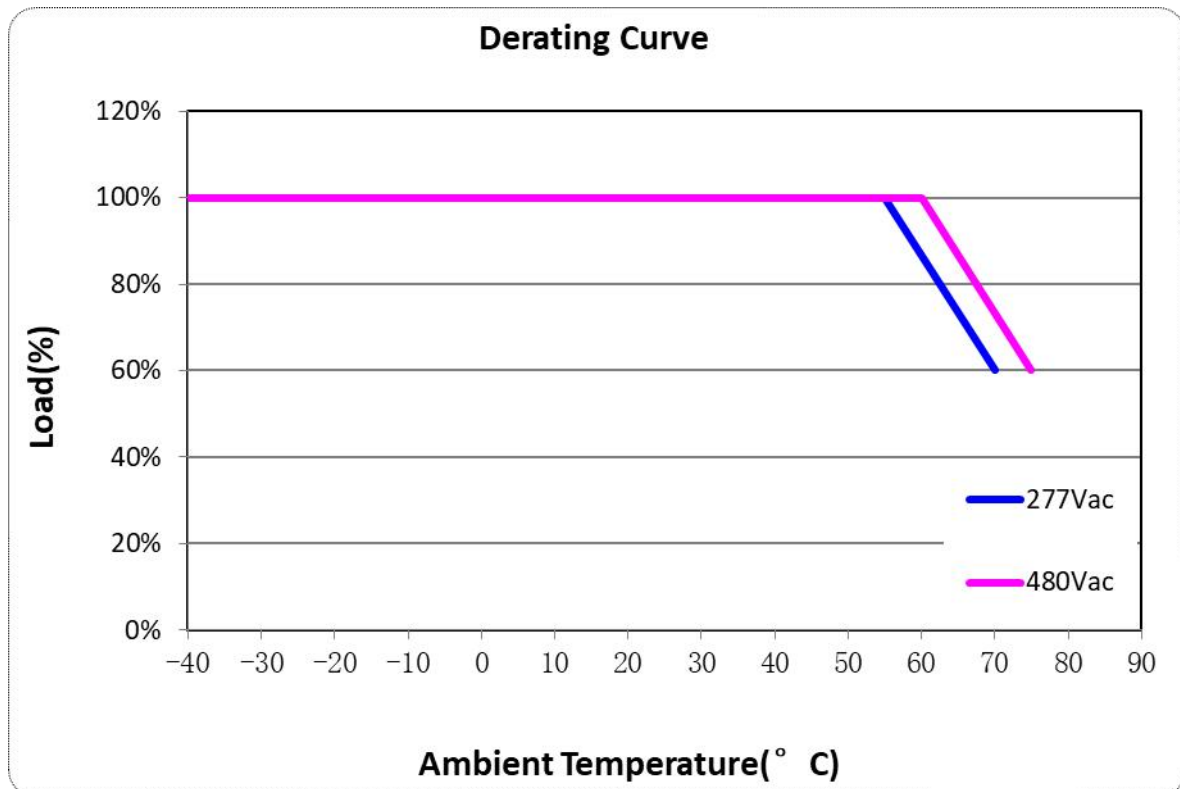
EMC Compliance

EMC 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	
KC	South Korea	K61547	
		K00015	
PSE	Japan	J55015	
FCC	USA	FCC part 15	

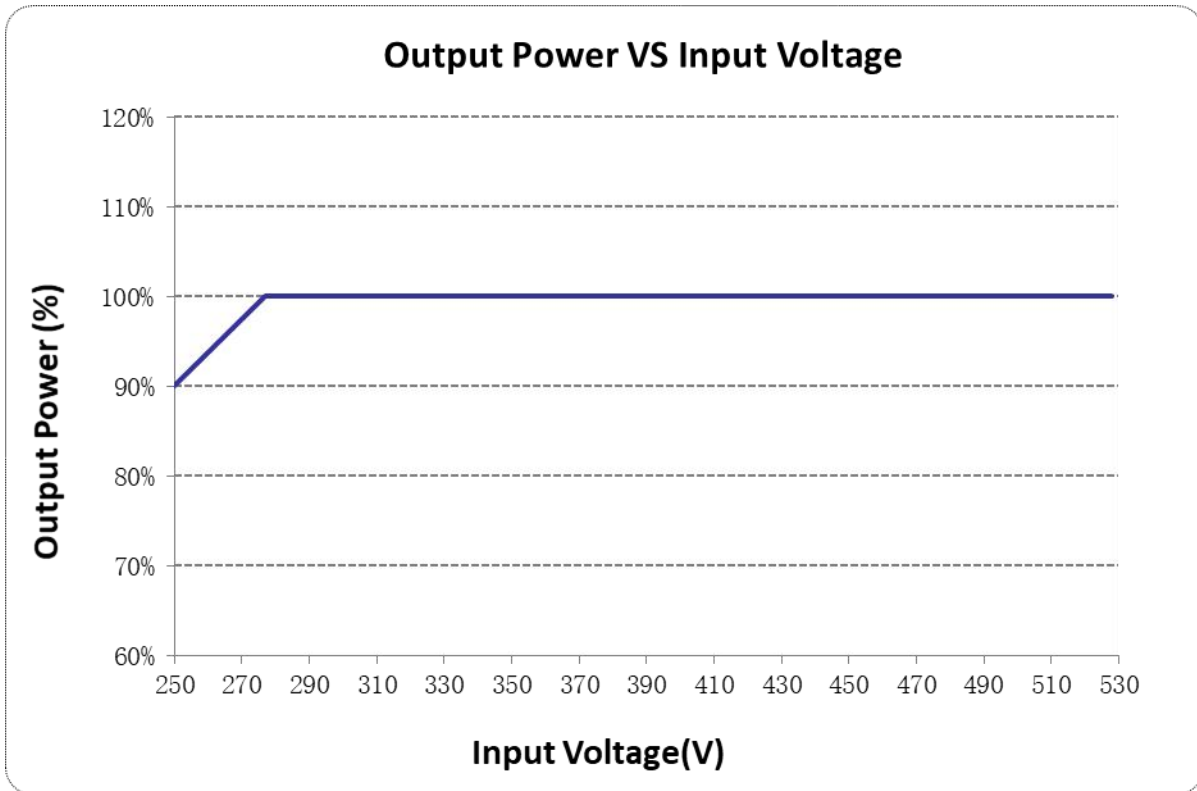
NOTE:

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.

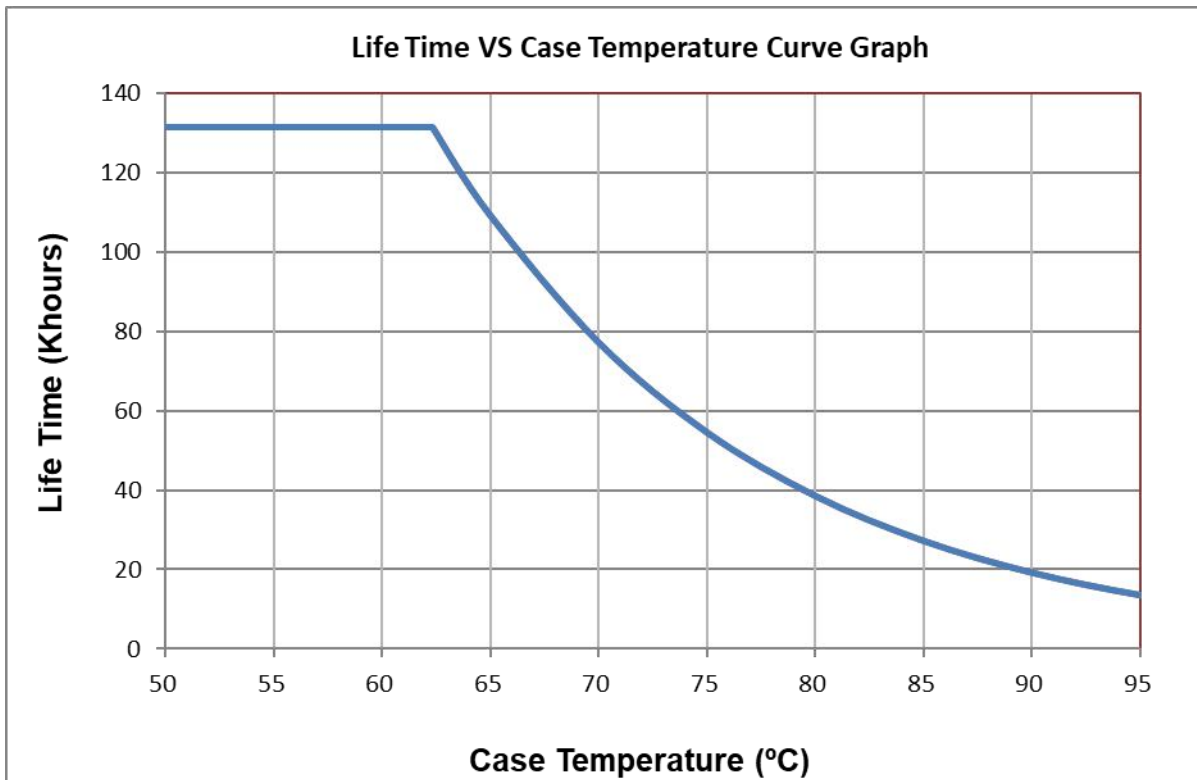
DERATING CURVE



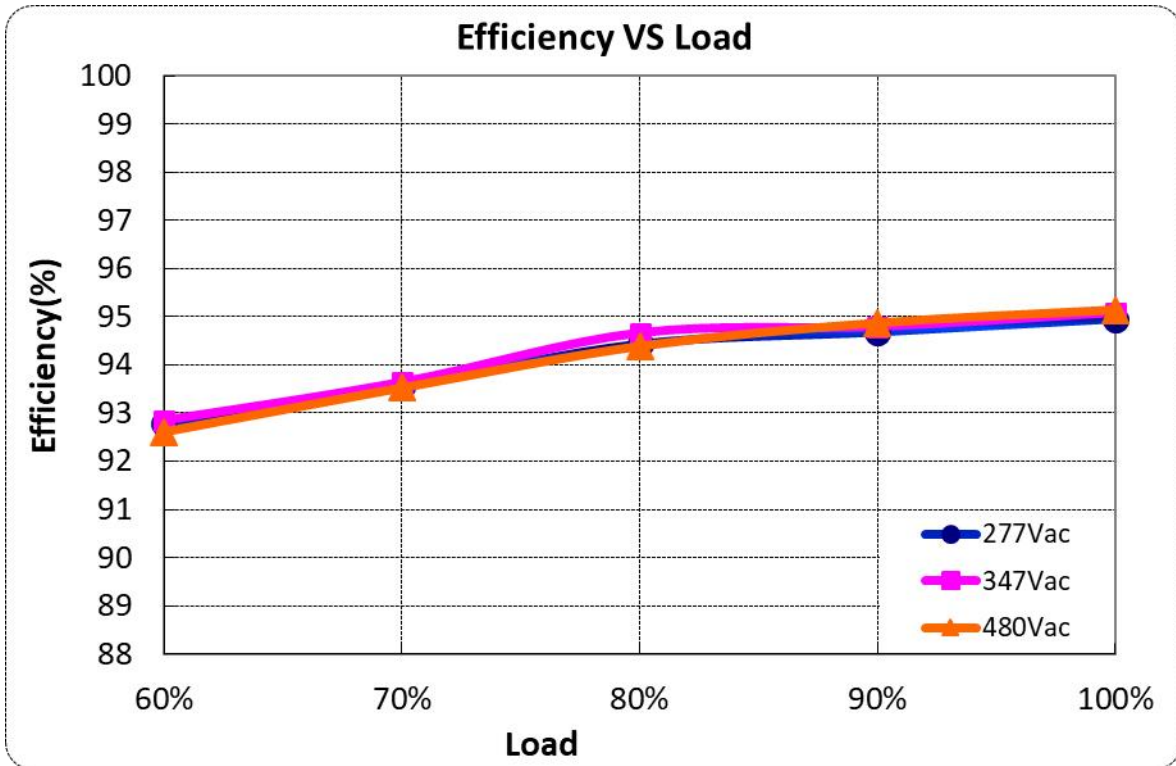
OUTPUT POWER VS INPUT VOLTAGE



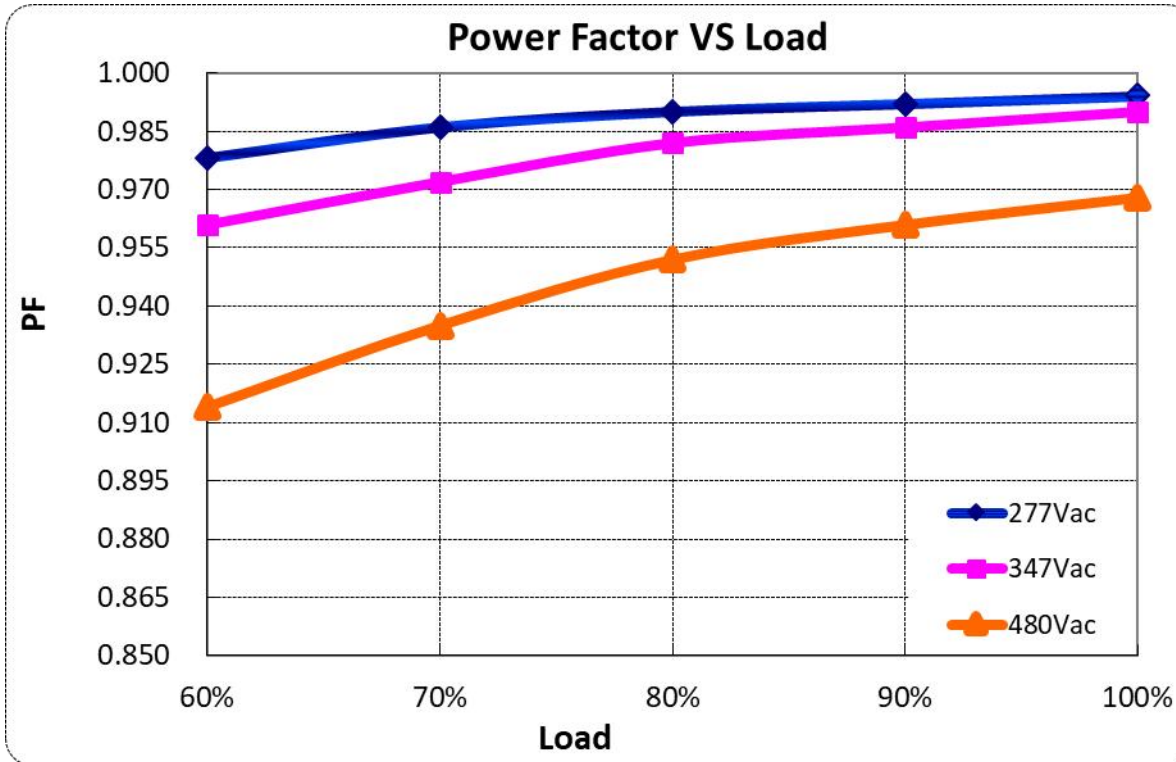
LIFETIME VS CASE TEMPERATURE



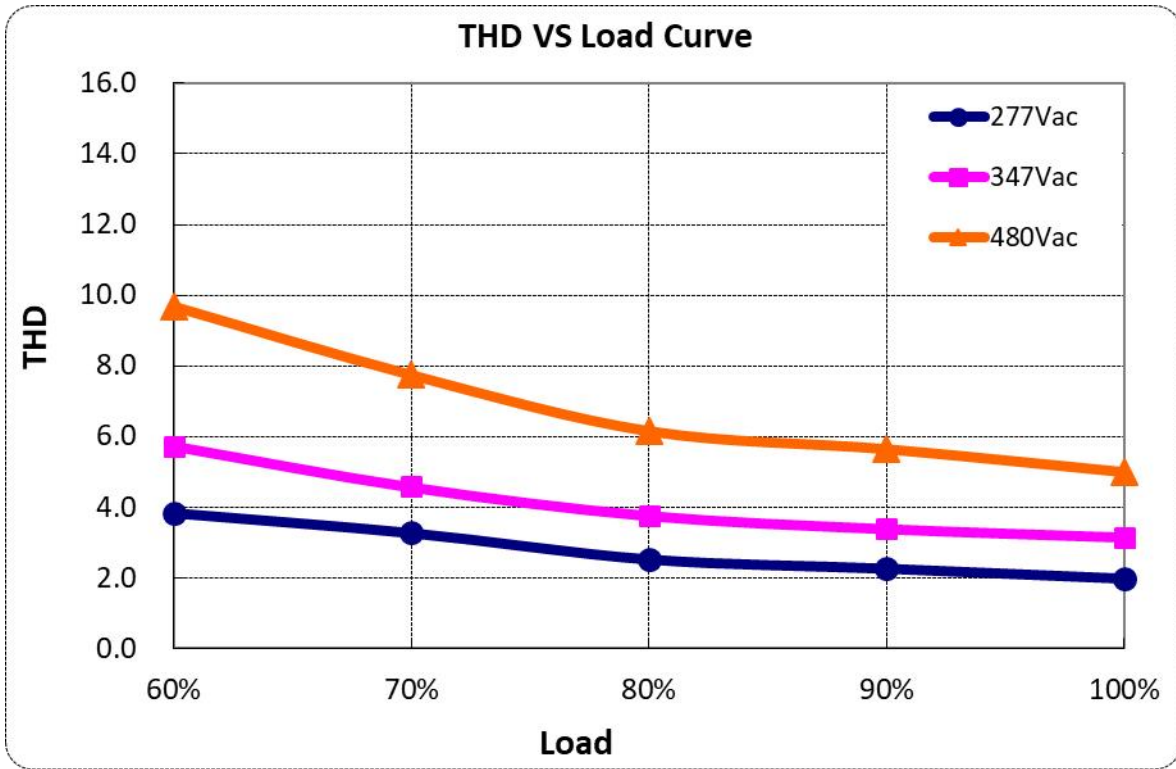
EFFICIENCY VS LOAD



POWER FACTOR VS LOAD

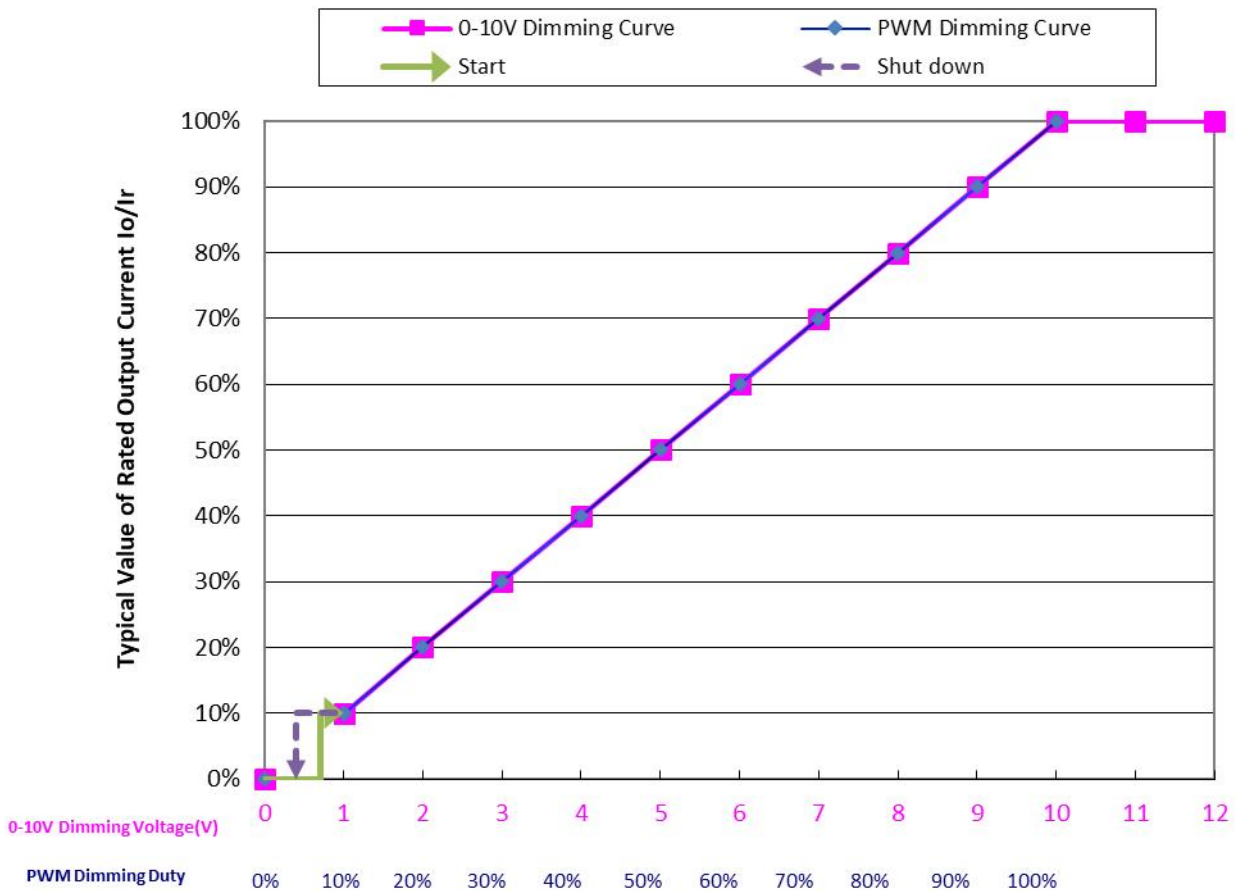


TOTAL HARMONIC DISTORTION



0-10V/PWM DIMMING

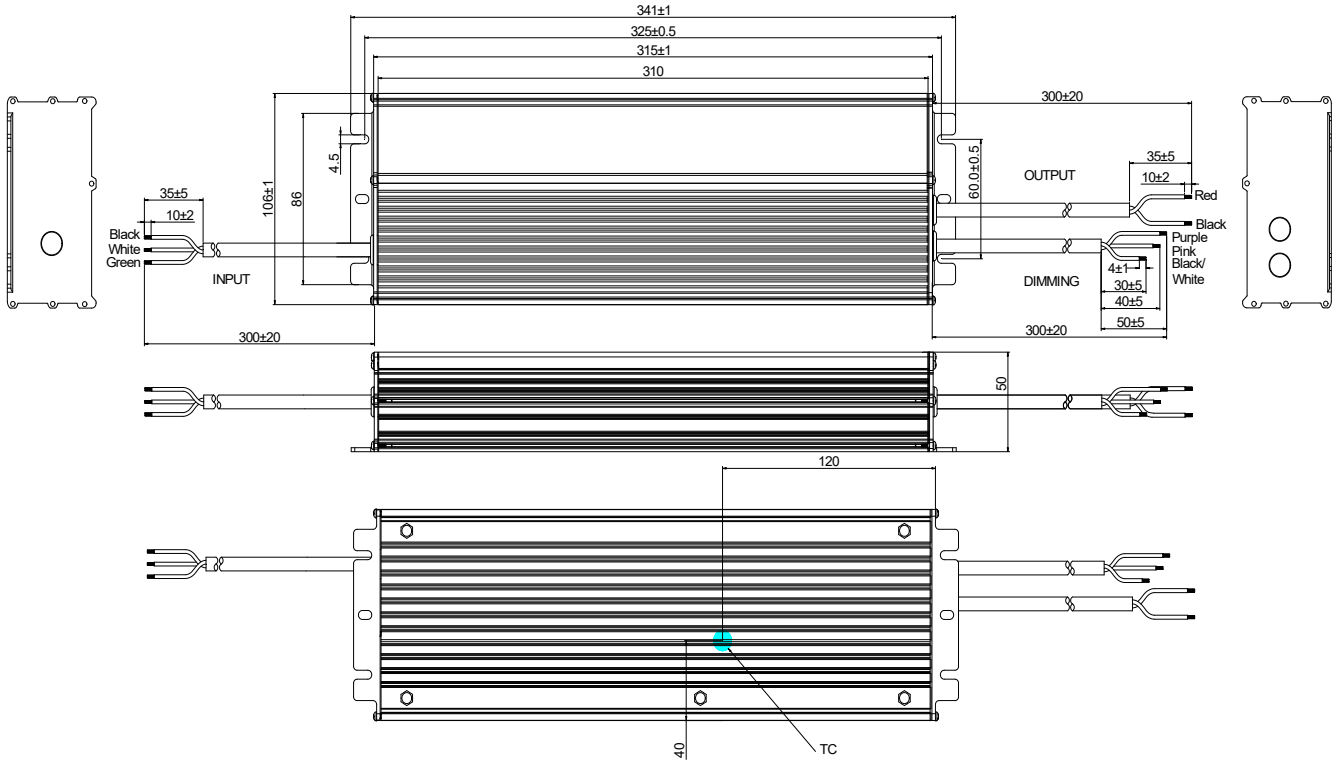
0-10V/PWM Dimming Curve



PROTECTIONS

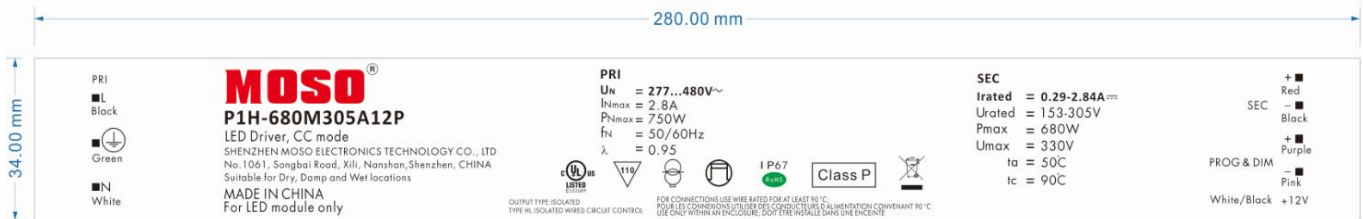
Items	Notes
Over temperature	The output power will be reduced when the case temperature exceeds 90°C, recovers automatically after the over-temperature is removed.
Output Short circuit	The output will be in locked working mode, recovers automatically after fault condition is removed
Over output voltage	Run into protection model when output voltage exceeds limit, recovers automatically after fault condition is removed.

MECHANICAL OUTLINE



Cable	Specification	Note
Input	STW 18AWG*3C external diameter: 9.3mm L=300±20mm	UL
Output	SJTW 18AWG*2C external diameter: 7.3mm L=300±20mm	UL
Diming	UL21996 22AWG*3C external diameter: 5.0mm L=300±20mm	Y=M

LABEL



Specification for approval

Product name: 680W Off-line Programmable Driver
Product Model: P1H-680M305A12P
Rev: A.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.		

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Prepared by	Checked by	Approved by

Product Specification

Product name: 680W Off-line Programmable Driver
Product Model: P1H-680M305A12P
Rev: A.2

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