Description

P6H-360W series is specially designed for Horticulture Lighting and industrial lighting applications. It is constant current LED driver that operates from 200-415Vac with 0-10V and PWM dimming function. This Rectangle integrated structure enables it to have a better heat dissipation cooler, significantly improving reliability and extending product life. To ensure trouble free operation, protection is provided against input surge, output over voltage, short circuit, and over temperature. The better thermal design and high efficiency enables the driver to operating with high reliability, and extending product lifetime. Over all protection is provided against lightening surge, output over voltage, short circuit, and over temperature, to ensure low failure rate.

Product Features

- Input voltage / Full range: 180~457Vac;
- Constant current design;
- Efficiency up to 96%;
- 3-in-1 dimmable: 0~10Vdc / PWM/ Timer;
- Adjustable Output Current (AOC) with programmer;
- Dim-to-off; No glow after Dim-to-off;
- Surge protection: DM 4KV, CM 6KV;
- Auxiliary power supply; 12V/0.2A;
- Multiple protection: Input UVP, Output SCP/OVP/ OTP;
- 5years warranty;

Application

Horticultural Lighting
Linear Lighting
Industrial Lighting.

Models

Model Number	Input Voltage Range(Vac)	Max Output Power(W)	Output Voltage Range(Vdc)	Full Power Output Current Range(A)	Default Current(A)	Eff.(Typ.)	PF(Typ.)	THD(Typ.)
P6H-360M390A12	180~457	360	200-390	0.92-1.20	0.990	94.5%	0.99	5%

NOTES:

[1]. M means 0-10V/PWM dimming.

[2]. A12 means Auxiliary source.

[3]. All specifications are measured at 25℃ ambient temperature, input voltage 220Vac, and the typical value tested by full load, if no specific note.

Input Specifications

Parameter	Min	Typ.	Max	Notes
Input Voltage Typ.	200Vac	220/277/347/400Vac	415Vac	
Input Voltage Range	180Vac	-	457Vac	
Input Frequency AC	47Hz	50/60Hz	63Hz	
Max Input Current	-	-	2A	200Vac&Full Load
Max Input Power	-	-	400W	200Vac&Full Load
Leakage Current	-	-	0.70mA	IEC 60598-1;240Vac/60Hz
Leakage Current			0.75MIU	UL8750
Inrush Current	-	0.12A^2S	0.23A^2S	400Vac, full load,50%~50% peak pulse duration
Inrush Current	-	7.5A	12A	400Vac&Full Load, Cold Start
Standby Power Consumption	-	-	0.5W	230Vac&50Hz, Auxiliary Power Without Load,
Power Factor(PF)	0.96	0.98	-	200-220Vac, 50-60Hz, 100% Load
Power Factor(PF)	0.95	0.97	-	277-347Vac, 50-60Hz, 100% Load
Power Factor(PF)	0.95	0.96	-	400-415Vac, 50-60Hz, 100% Load
Power Factor(PF)	0.92	0.94	-	200-415Vac, 50-60Hz, 70%-100% Load
Total Harmonic Distortion(THD)	-	5%	10%	200-415Vac, 50-60Hz, 100% Load
Total Harmonic Distortion(THD)	-	8%	15%	200-415Vac, 50-60Hz, 70%-100% Load
MCB(B16)	-	5	-	220Vac

Output Specifications

Parameter	Min	Typ.	Max	Notes
Output Voltage Range	200Vdc	-	390Vdc	
Open Circuit Voltage	-	-	450Vdc	
Output Current Range	10%Imax	-	100%Imax	
Full Power Current Range	0.92A	-	1.20A	
Current Accuracy	-5% Iset	-	+5% Iset	Iset=0.92~1.2A
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%	200-415Vac &100% Load, Load is LED
Auxiliary source output voltage	11.4Vdc	12Vdc	12.6Vdc	200-415Vac &100% Load
Output ripple & noise(mV)Vp-p	-170mV	-	+170mV	100% load, Measured by 20MHz bandwidth oscilloscope and the output paralleled a 0.1uF ceramic capacitor and a 47uF electrolytic capacitor
Auxiliary source output current	-	-	200mA	
Line Regulation	-2%	-	+2%	25℃±10℃ ambient temperature, input voltage changes from 200Vac to 415Vac.
Load Regulation	-3%	-	+3%	25℃±10℃ambient temperature, Input Voltage 400Vac, load changes from 80% to 100%.
Turn-on Delay Time	-	-	1.5s	200-415Vac &100% Load. The soft-start function (boot time) can be set by software.

General Specifications

Parameter	Min	Typ	Max	Notes
Efficiency@220Vac Efficiency@277Vac Efficiency@400Vac	93.5% 94.5% 95%	94.5% 95.5% 96%	- - -	Measured at full load and 25℃ambient temperature 12V No Load,100% Load (Efficiency will be about 1.5% lower if measured immediately after startup.)
Mean Time Between Failure	-	200Khours	-	25℃±10℃ambient temperature, 220Vac,80% load (MIL-HDBK-SR-332)
Lifetime	-	50Khours	-	Tc=75℃, 220Vac&100% load
Operating Temperature	-40℃	-	+50℃	200-415Vac&100% load
Operating Tc for Safety Tc_s	-40℃	-	+90℃	
Operating Tc for Warranty Tc_w	-40℃	-	+75℃	5 years warranty case temperature Humidity: 10% to 95% RH No condensation
Storage Temperature	-40℃	-	+85℃	Humidity: 10% to 100% RH
Altitude	-60m		4000m	
Input Under voltage Protection	130Vac	150Vac	170Vac	Reduce power until turn off output when the input voltage falls below protection voltage.
Over Temperature Protection	90	100℃	110℃	When the over temperature protection is activated, the output power decreases
Short Circuit Protection	-	-	-	self-recovery
Dimensions (L*W*H)mm	340*42.5*36mm			
Net Weight	1070±50g/PCS			
Package	523*336*183mm; 12PCS/ctn, Gross Weight: 15Kg			

Dimming

Parameter	Min	Typ	Max	Notes
Absolute Maximum Voltage	-	10V	15V	On the Vdim (+) Pin
Source Current on Vdim (+)Pin		200uA	400uA	
Dimming Range	10% I_{set}	-	100% I_{set}	I_{set}=0.92~1.20A
Suggest Dimming Input 0-5V	0V	-	5V	10V Optional
Turn-on Voltage	0.3V	0.35V	0.4V	error±0.05V，12V No Load
Turn-off Voltage	0.2V	0.25V	0.3V	error±0.05V，12V No Load
PWM_in High Level	4.7V	-	5.3V	10V PWM Optional
PWM_in Low Level	0V	-	0.3V	
PWM_in Frequency Range	350Hz	-	3KHz	
PWM_in Duty Cycle	1%	-	99%	
Turn-on Duty Cycle	6%	7%	8%	error±1%，12V No Load
Turn-Off Duty Cycle	4%	5%	6%	error±1%，12V No Load
Timer Dimming				3 types, which is set by software
Output lumen Compensation				Constant lumen output function

Safety Specification

Parameter	CCC	CE	UL	
Dielectric Strength (Input-Dim/Aux)	-	3700Vac	1850Vac	60s，Current not exceeding 5mA
Dielectric Strength (Input-Ground)	-	1850Vac	1850Vac	60s，Current not exceeding 5mA
Dielectric Strength (Output-Ground)	-	1900Vac	2000Vac	60s，Current not exceeding 5mA
Dielectric Strength (Output-Dim)	-	3800Vac	2200Vac	60s，Current not exceeding 5mA
Dielectric Strength (Dim-Ground)	-	500Vac	500Vac	60s，Current not exceeding 5mA
Grounding Resistance	≤0.1Ω			25℃±10℃, pass 25A Current, 60s.
Insulation Resistance	≥10MΩ			Input-PE, Output-PE, 500Vdc/60s/25℃/70%RH

Safety Compliance

Safety Category	Standards	Approved	Notes
CCC	GB/T 19510.213, GB/T 19510.1		
CE	EN61347-1, EN61347-2-13	√	
CE	EN62493	√	
ENEC	EN62384	√	
CB	IEC61347-1, IEC61347-2-13	√	
BIS	IS 15885(PART 2/SEC 13)		
UL	UL 8750	√	
CUL	CSA C22.2 No.250.13	√	
KC	K61347-1, K61347-2-13		
PSE	J61347-1, J61347-2-13		
SAA	AS/NZS IEC 61347.2.13		
	AS/NZS 61347.1		

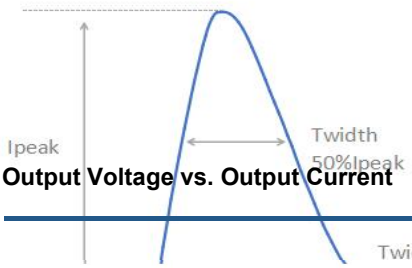
EMC Compliance

EMC Category	Standards	Approved	Notes
CCC	GB/T 17743, GB 17625.1		
CE	EN 55015	√	
CE	EN 61000-3-2, EN 61000-3-3	√	
CE	EN61000-4-2,3,4,5,6,11	√	
CE	EN 61547	√	
KC	K61547		
KC	K00015		
PSE	J55015		
FCC	FCC part 15	√	
Surge Shock Immunity			
Ringing Wave			

RoHS

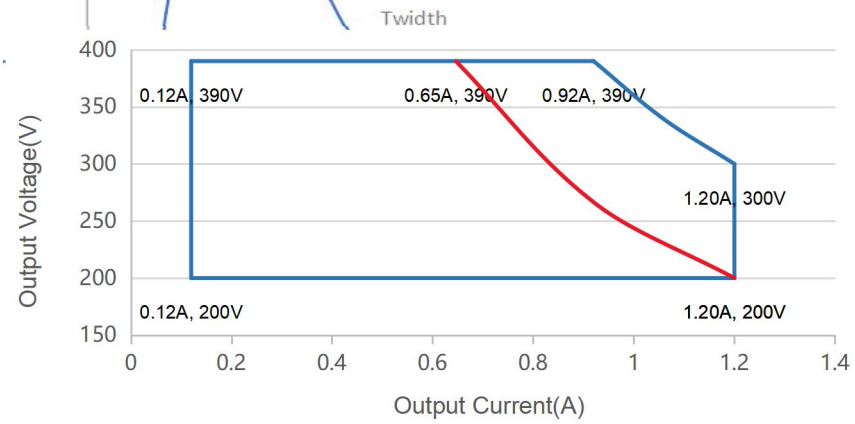
Our products comply with reference to RoHS Directive (EU) 2015/863 amending 2011/65/EU.

Inrush Current

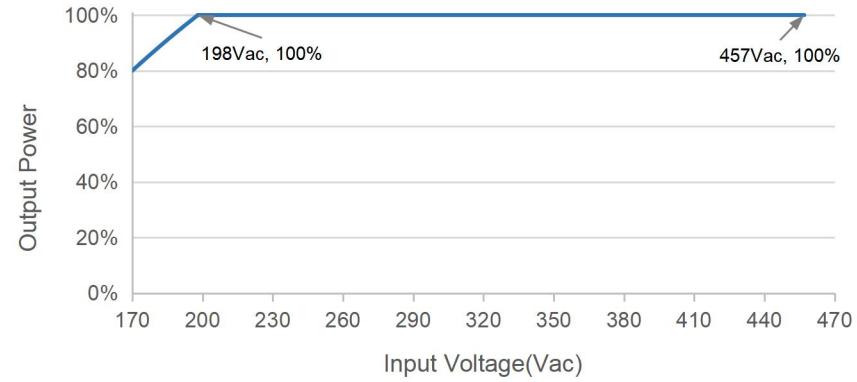


Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
220Vac	2.96A	3.68ms	2.58ms
277Vac	3.10A	3.64ms	2.64ms
347Vac	4.60A	2.72ms	1.56ms
400Vac	5.36A	3.76ms	2.60ms

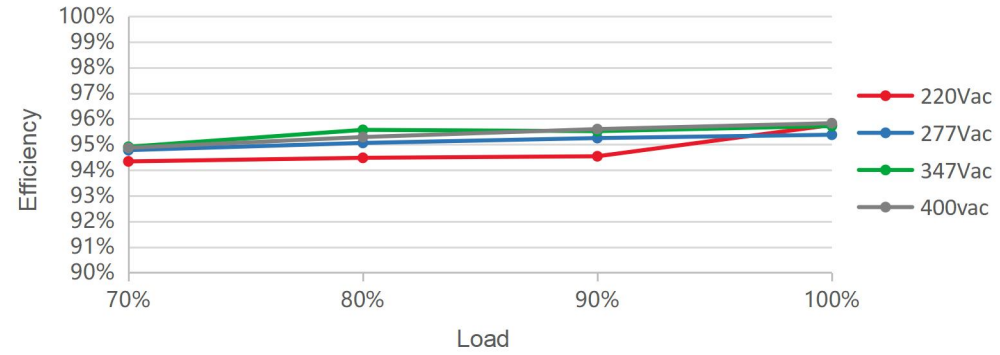
Output Voltage vs. Output Current



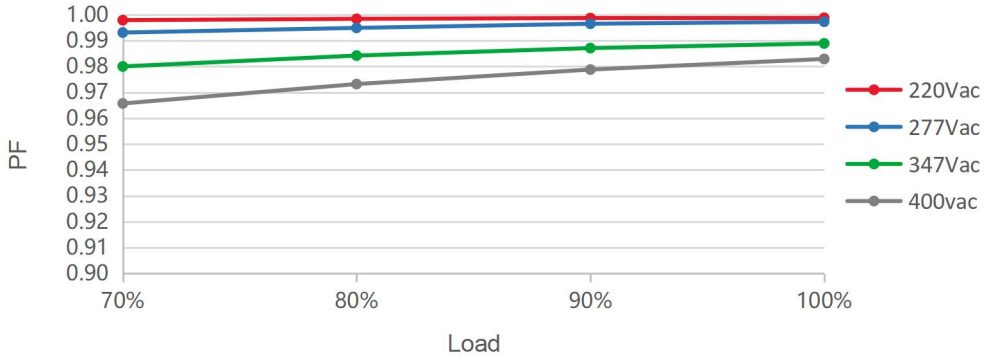
Output Power vs. Input Voltage



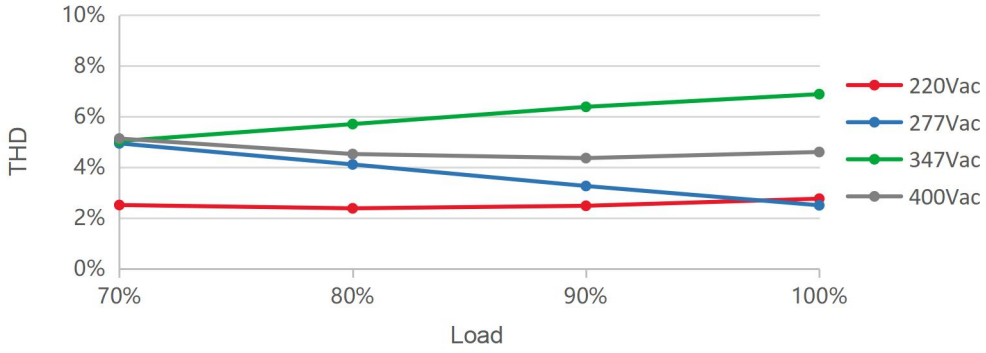
Efficiency vs. Load



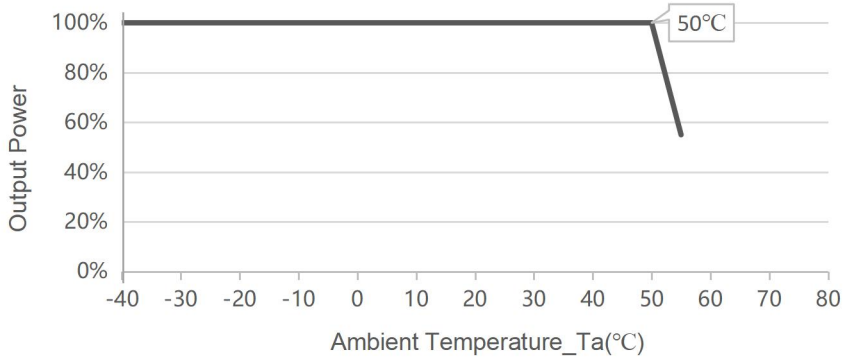
PF vs. Load



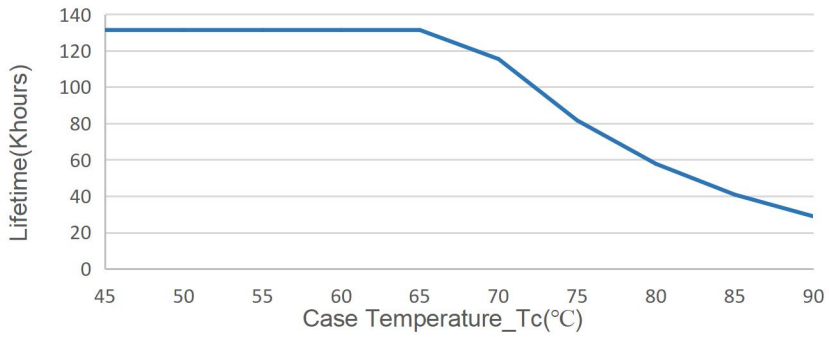
THD vs. Load



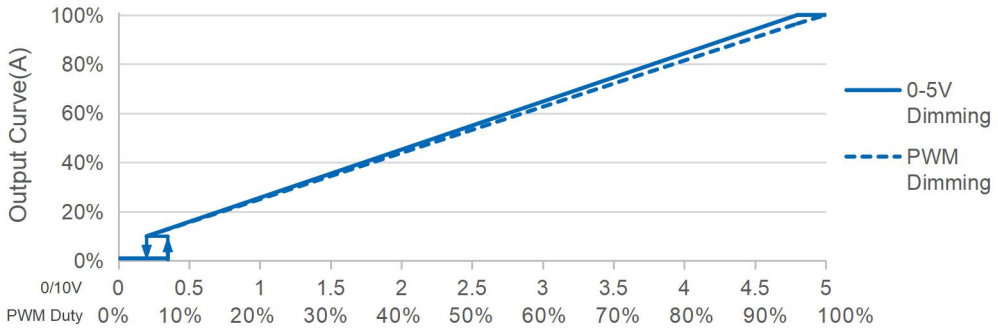
Output Power vs. Ambient Temperature



Lifetime vs. Case Temperature



0-10V/0-5V/10V PWM/5V PWM Dimming



Notes：Output off when dimming line is suspended

Programmer Adjustable Driver

User-friendly connection of programming without necessary to power on device(suitable for X6, X6S, X6I, X6E,P6H Series).

Programming mode I

Visual Intelligent Programming

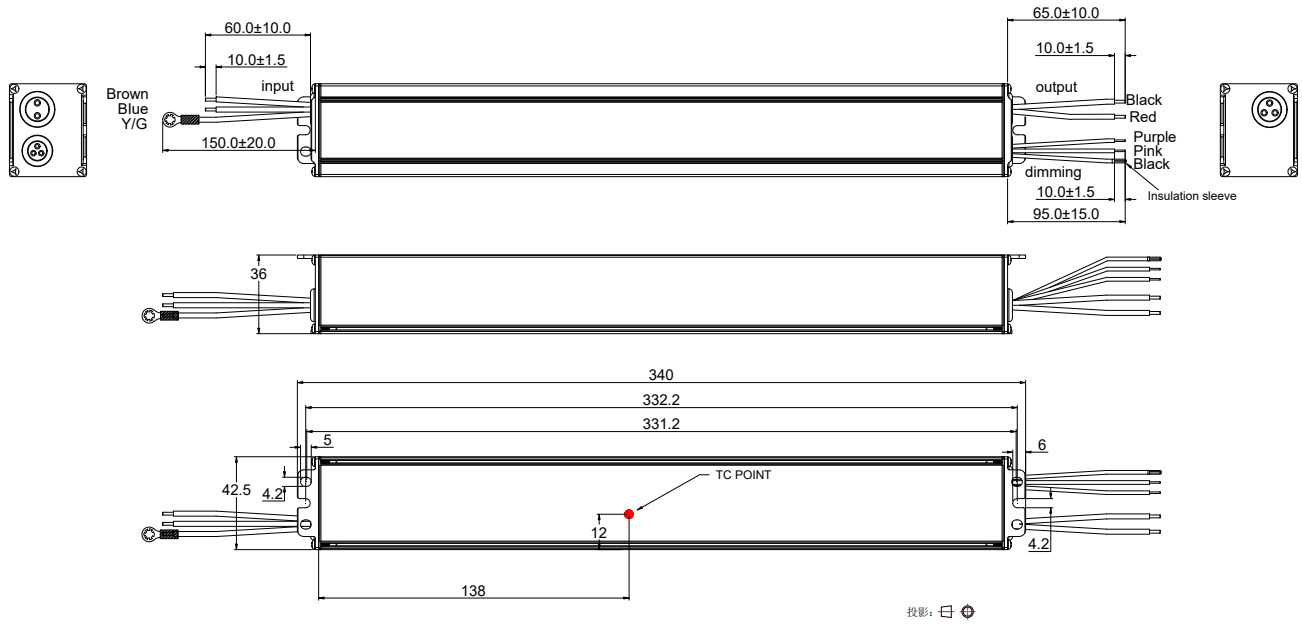
1. Set the output parameters through the control signal line 0-3.3V/0-5V/0-9V/0-10V optional.
2. Timer dimming. Set the timer control function, support up to 7 segments;
3. Set output CLO;
4. Read the recorded system parameters; Record the working time working temperature, and software version information of the LED driver.
5. Configure the driving parameters. After setting is completed, then click the configured parameters to complete programming.
6. Download it to the offline programmer.

Programming mode 2

Instructions of one touch programmer:

1. Open the software interface and download the program to the offline programmer;
2. Connect the dimming wire with the programmer, press the programmer Button, the programmer will give you a subtle reminder “(Beep) ” to tell you the installation completed.

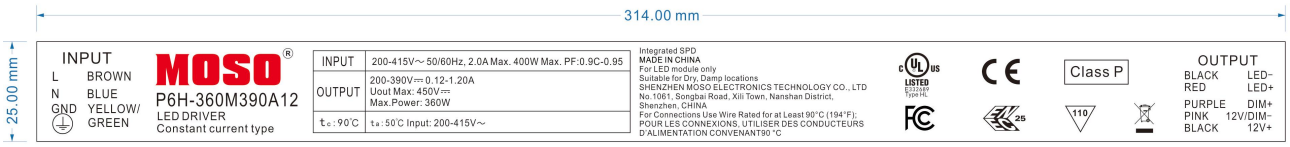
Mechanical Outline



Connections

Input	UL 1015 18AWG L,N : L=60±10mm，Tin-dip length 10mm，G: L=150±20mm，Serrated terminal	UL
Output	UL 1015 18AWG LED+: L=65±10mm，Tin-dip length 10mm, LED-: L=65±10mm，Tin-dip length 10mm,	UL
Dimming	UL 1015 22AWG DIM+: L=95±15mm，Tin-dip length 10mm, DIM-: L=95±15mm，Tin-dip length 10mm, 12V: L=95±15mm，Tin-dip length 10mm	UL

Label



Version

A.1	First release	2025-01-02

Specification for Approval

Product Name: 360W Non-isolate LED Driver

Product Model: P6H-360M390A12

Rev : A.1

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Web Site: http://www.mosopower.com

Prepared By	Checked By	Approved By

Specification for Approval

Product Name: 360W Non-isolate LED Driver

Product Model: P6H-360M390A12

Rev : A.1

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