

# Specification for Approval

Product Name:        36W Constant Current Driver

Product Model:        X6-036M052L

X6-036V052L

Rev:                    E.3

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Prepared By	Checked By	Approved By

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Produce Name:            36W Constant Current Driver

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

Prepared By	Checked By	Approved By



**Product Feature:**

- Input voltage range: 90~305Vac;
- Constant current design;
- Output current adjustable by Built-in potentiometer;
- THD<10%;
- 3-in-1 dimmable: 0~10Vdc, PWM , Resistor;
- Output and Dimming Signal Isolating, Dim to off;
- Standby power<0.5W;
- Surge protection:4KV line-line, 6KV line-earth;
- Protections: OVP, SCP;
- IP67 design for indoor and outdoor applications;
- 5 years warranty.

**Application**

- Suitable for LED roadway lighting, industrial lighting, etc.

**DESCRIPTION**

The X6-36W is constant-current output IP67 LED driver that operates from 90-305Vac input with excellent power factor and low THD. It is created for industrial lights, tunnel and street lights. The high efficiency of these drivers and compact metal case enable them to run cooler, significantly improving reliability and extending product life. To ensure trouble-free operation, protection is provided against input surge, output over voltage and short circuit protection.

**Models**

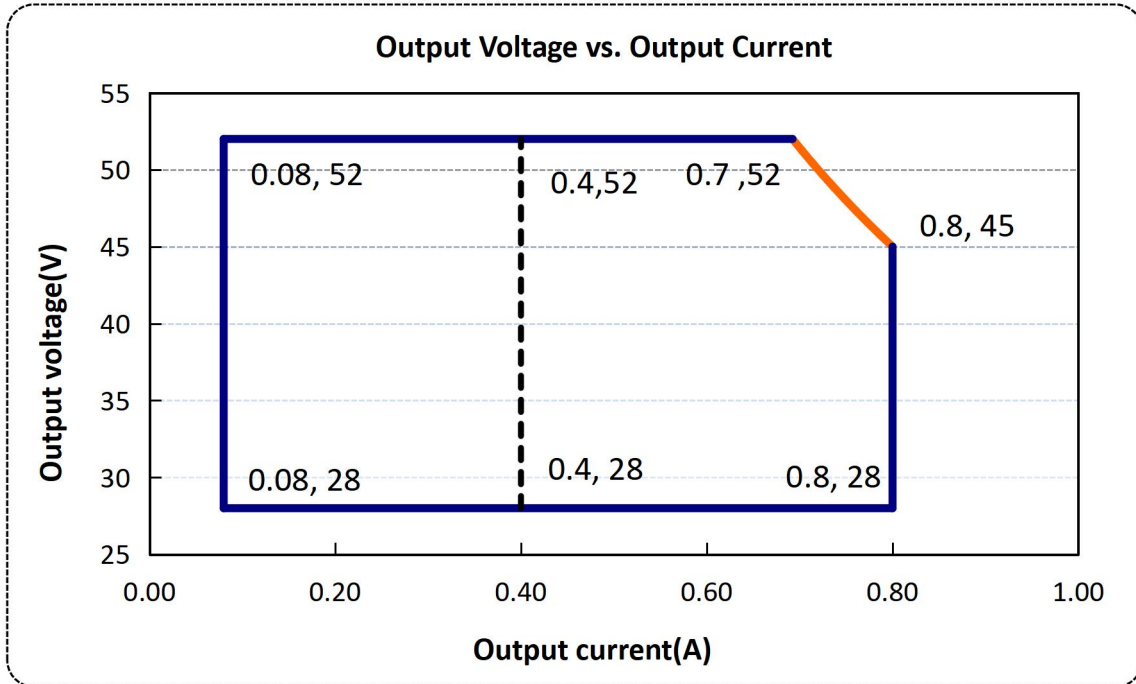
Model Number	Input voltage range (Vac)	Max Output Power (W)	Output Voltage Range (Vdc)	Default output current (A)	Output current adjust range(A)	Typical Efficiency	Typical THD	Typical PF
								230Vac
X6-036Y052L	90-305	36	28-52	0.8	0.4-0.8	88%	5%	0.96

**Notes:**

1. Y=V means no dimmable, Y=M means 0-10V/PWM dimming.  
Model -A means forward dimming, and model -B means reverse dimming
2. All specifications are measured at 25°C ambient temperature, input voltage 230Vac/50Hz, and the typical value tested by full load, if no specific note.

**OPERATING AREA I-V**

X6-036Y052L



Notes: 1.The area to the right of the dotted line is the adjustable range of the output current

2. The adjustable current range is on the right of the dotted line

**INPUT SPECIFICATIONS**

Parameter	Min.		Typ.		Max.		Notes
Input Voltage	90Vac		100-277Vac		305Vac		
Input Frequency	47Hz		50/60		63Hz		
Leakage Current	-		-		0.75mA		277Vac/60Hz
Input AC Current	-		-		0.5A		100-277Vac with full load
Inrush Current	-		-		0.15A <sup>2</sup> S		230Vac input with full load, Ta=25°C (cold start)
Power Factor	0.97		0.99		-		120Vac, 50-60Hz, full load
	0.95		0.96		-		230Vac, 50-60Hz, full load
	0.90		0.92		-		277Vac, 50-60Hz, full load
THD	-		5%		10%		100-240Vac 50-60Hz , 70%-100% load
	-				15%		277Vac, 50Hz/60Hz , 70%-100% load
Max. NO. of PSUs on Circuit Breaker	B10	16	B16	25	B25	39	230Vac 100% load
	C10	26	C16	41	C25	65	

**OUTPUT SPECIFICATIONS**

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-8%	-	+8%	
Output Current set range(A) X6-036Y052L	0.4	-	0.8	
Total Output Current Ripple(pk-pk)	-	150%	200%	20MHz BW, full load & LED Load, ripple is different with difference LED load.
Startup Overshoot Current	-	5%	10%	100~277Vac & full load, LED Load
No Load Output Voltage(V) X6-036Y052L	-	-	70	
Line Regulation	-3%	-	+3%	25°C±10°C ambient temperature, input voltage changes from 100Vac to 277Vac.
Load Regulation	-5%	-	+5%	25°C±10°C ambient temperature, 230Vac input, load changes from 60% to 100%.
Turn-on Delay Time	-	-	3S	120Vac, 100% load
	-	0.5S	1S	230Vac, 100% load
Standby Power	-	-	0.5W	@230Vac/50Hz, Dimming Off

**GENERAL SPECIFICATIONS**

Parameter	Min.	Typ.	Max.	Notes
Efficiency @120Vac X6-036Y052L	85%	87%		Measured at full load and 25°C ambient temperature
Efficiency @230Vac X6-036Y052L	86%	88%		Measured at full load and 25°C ambient temperature
Efficiency @277Vac X6-036Y052L	86%	88%		Measured at full load and 25°C ambient temperature
Dielectric Strength	Input-Output	-	3750Vac	5mA/60S
	Input-PE	-	2000Vac	
	Output- PE	-	1600Vac	
Grounding Resistance	-	-	0.1Ω	25A/60S at 25°C ambient temperature
Insulation Resistance	10MΩ	-	-	Input-Output, Input-PE, Output-PE, 500Vdc/60S/25°C/70%RH
MTBF	-	200000 Hours	-	230Vac/25°C, 80% load (MIL-HDBK-217F)
Lifetime	-	50000Hours	-	230Vac&100% load, 75°C case temperature, refer to lifetime VS Tc curve for details
Operating Temperature	-40°C		60°C	
Operating Case Temperature for Safety Tc_s	-40°C	-	+85°C	

Operating Case Temperature for Warranty Tc_w	-40°C	-	+75°C	5 Years Warranty Humidity: 10% to 95% RH
Storage Temperature	-40°C	-	+85°C	Humidity: 10% to 100% RH
Dimensions (L×W×H)mm	L119*W65*H34			
Net Weight	470±50g/PCS			
Package	L424mm*W354m*H146mm; 12PCS/Ctn, Gross Weight: 6.24Kg			

**Note:** All specifications are tested by Cree XLamp XP-G2 and typical measured at 230Vac and 25°C unless otherwise stated.

### DIMMING

Parameter		Min.	Typ.	Max.	Notes
0~10V Absolute Maximum Voltage on the Vdim (+) Pin		-	10V	-	
0~10V Source Current on Vdim(+)Pin		-	100uA	200uA	
Dimming Output Range	X6-036M052 L	10% I <sub>max</sub>	-	100% I <sub>max</sub>	I <sub>max</sub> =0.8A
Recommended Dimming Range for 0-10V		0V	-	10V	Default 0-10V/PWM dimming
PWM_in High Level		9.7V		10.3V	
PWM_in Low Level		0V		0.3V	
PWM_in Frequency Range		300Hz		2KHz	
PWM_in Duty Cycle		1%		99%	

### SAFETY STANDARDS

Safety Category	Country / Territory	Standards	Whether have Certification
CCC	China	GB19510.1, GB19510.14	√
CE	Europe	EN61347-1, EN61347-2-13	√
		EN62493	√
ENEC		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	

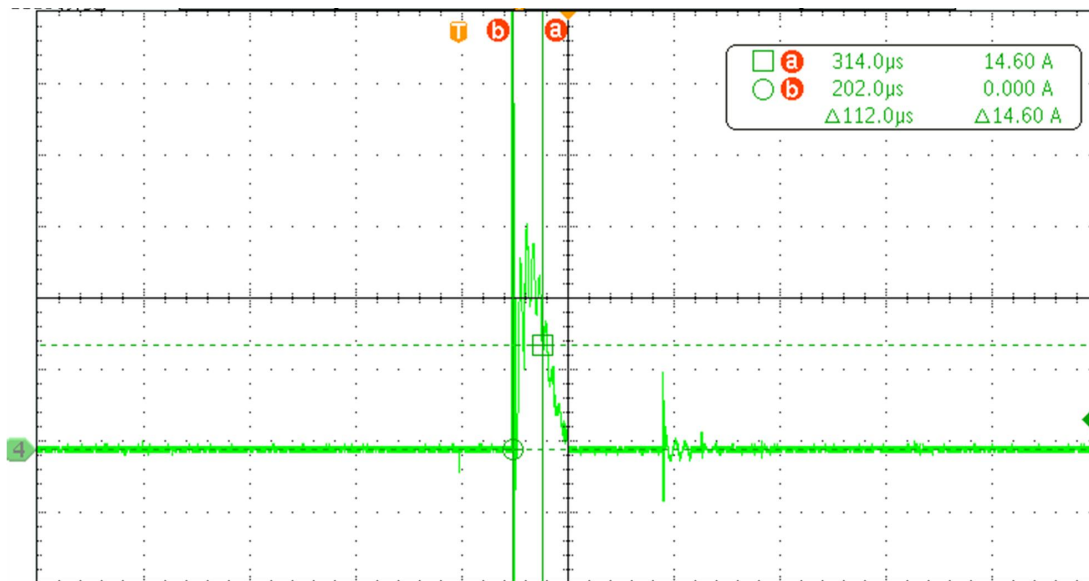
### EMC COMPLIANCE

EMC Category	Country / Territory	Standards	Whether have Certification
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	

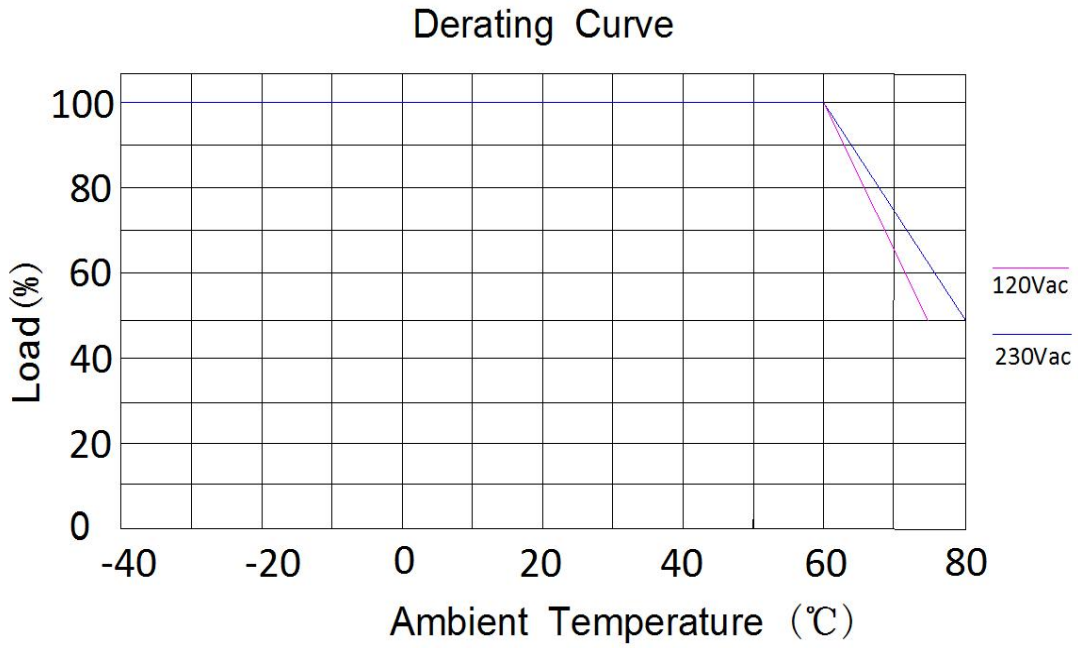
### NOTE:

This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

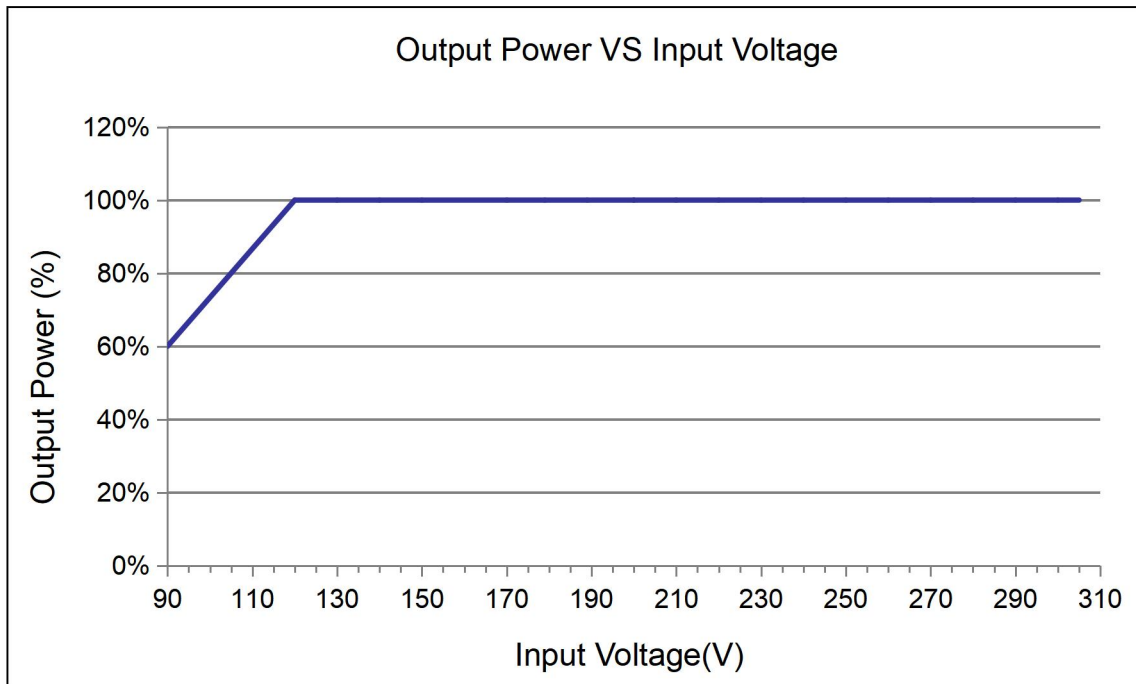
### INRUSH CURRENT WAVEFORM



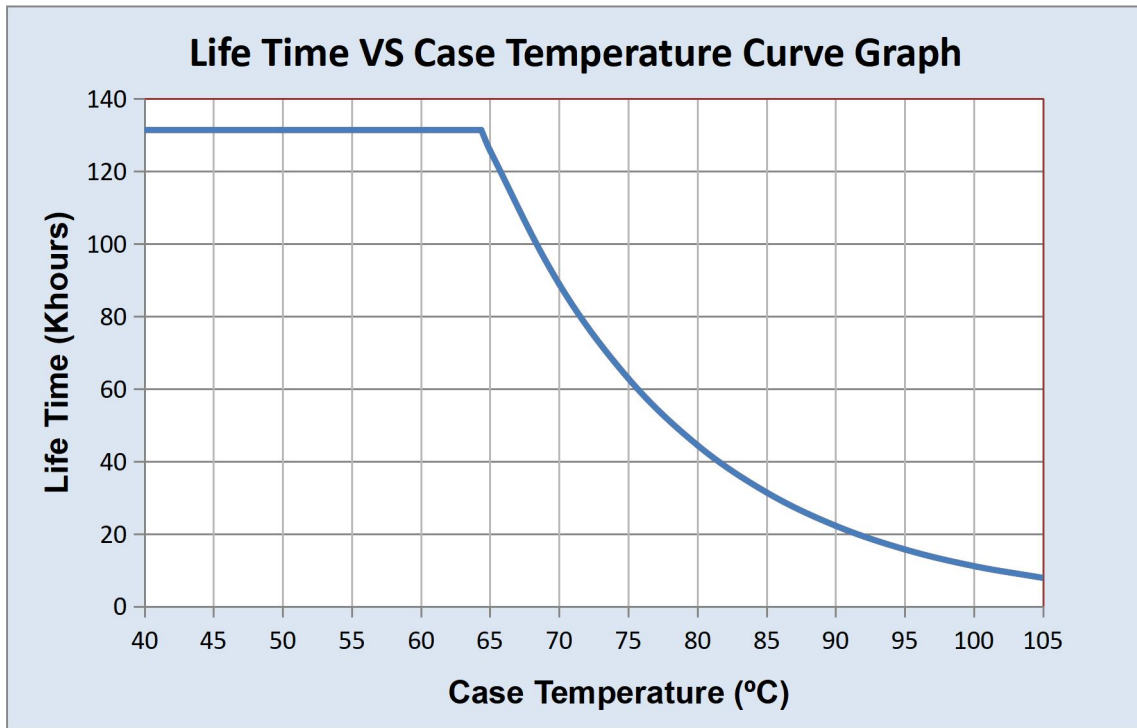
### DERATING CURVE



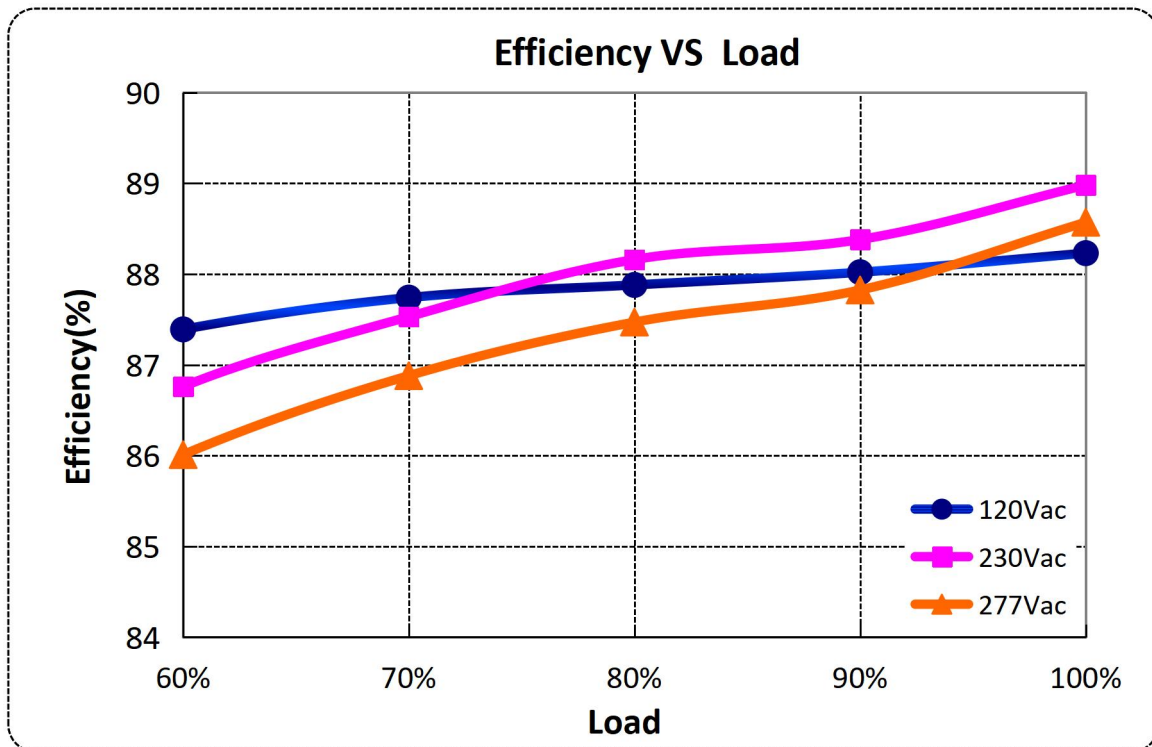
### OUTPUT POWER VS INPUT VOLTAGE



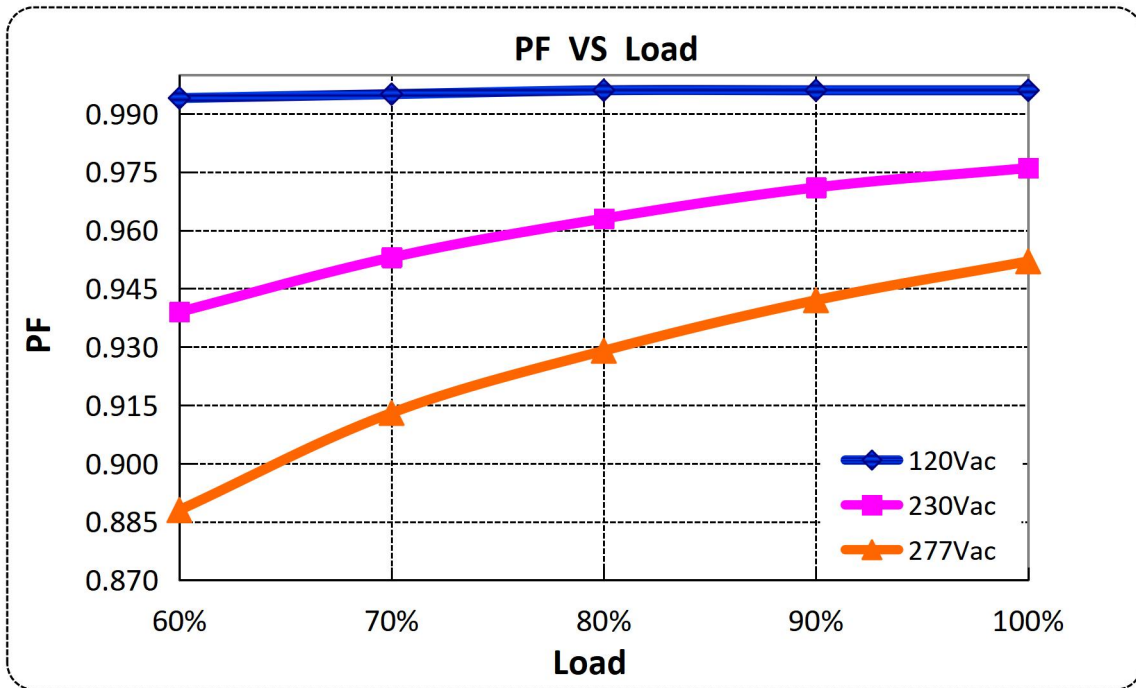
### LIFETIME VS CASE TEMPERATURE



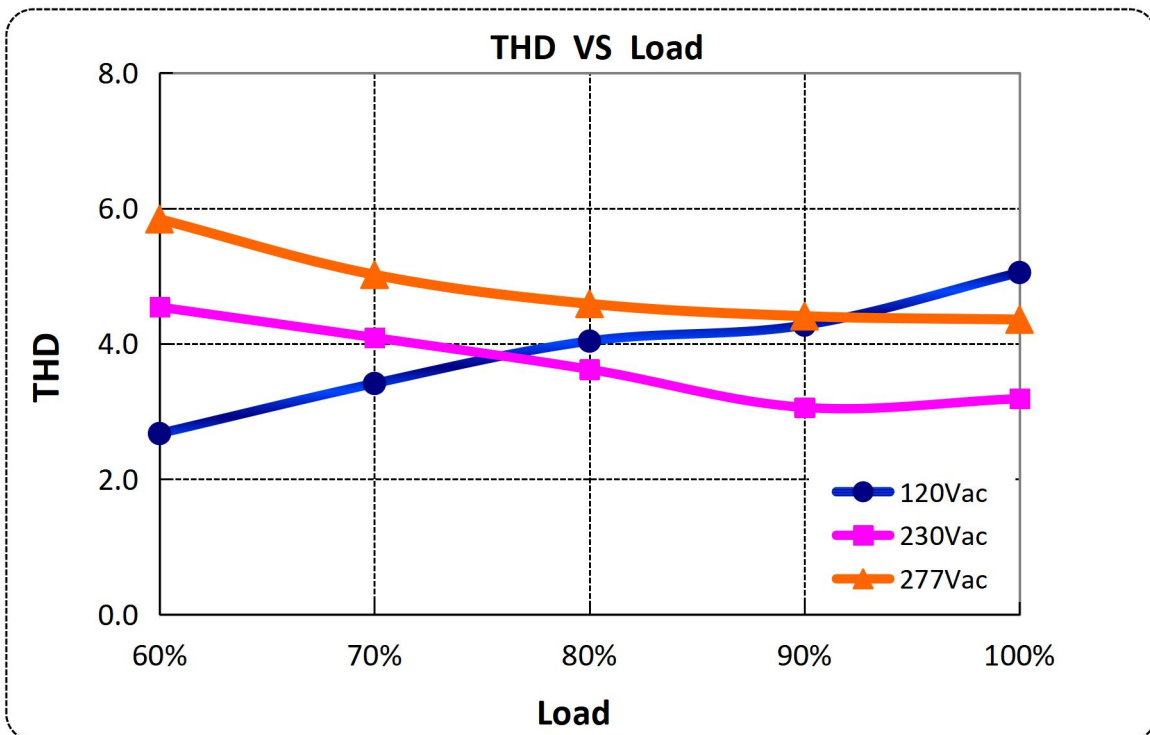
### EFFICIENCY VS LOAD



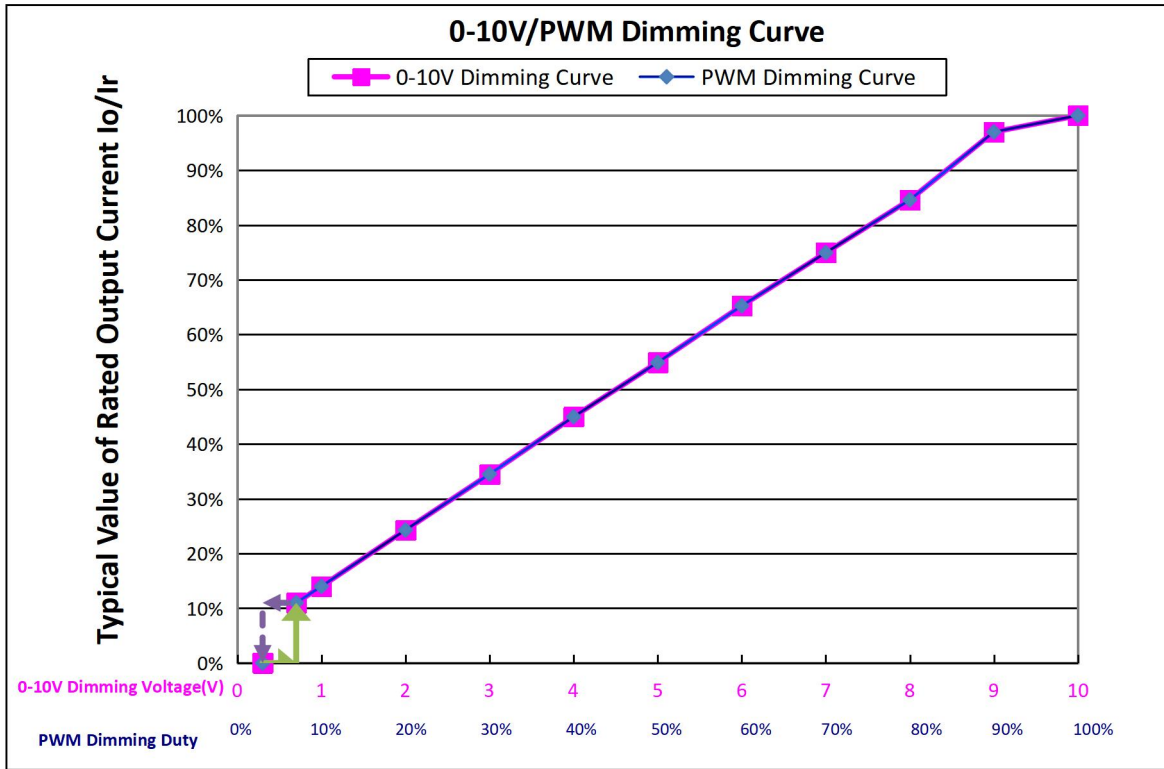
### POWER FACTOR VS LOAD



### TOTAL HARMONIC DISTORTION



**0-10V/PWM DIMMING CURVE**



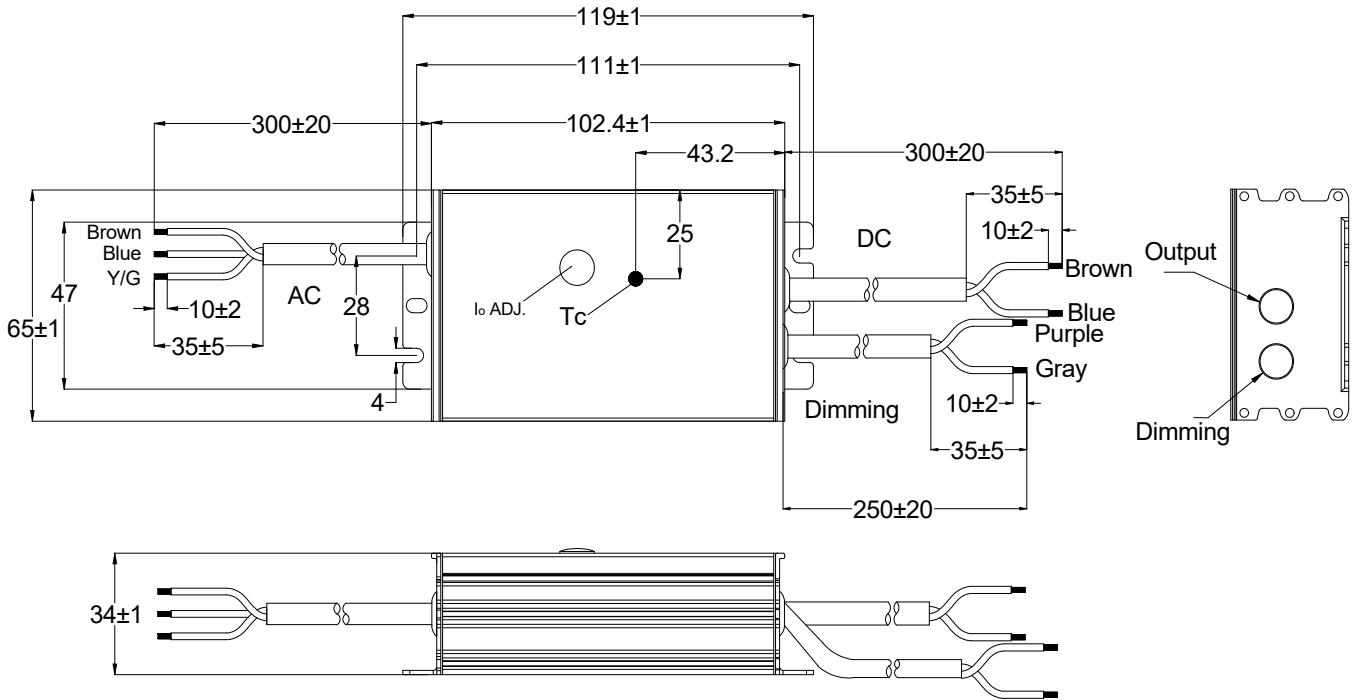
**NOTE:** Dimming off mode is to reduce the output voltage. After dimming off, the power output still has residual voltage. The opening voltage of the lamp should be higher than the residual voltage.

**PROTECTIONS**

Parameter	Notes
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.
Output over Voltage Protection	Run into protection model when output voltage exceeds limit, and return to normal when the fault.

### MECHANICAL OUTLIN

#### X6-036M052L



Wire	Specification	Note
Input	CCC+VDE H05RN-F *3C L=300±20mm	CCC/CE
Output	CCC+VDE H05RN-F *2C L=300±20mm	CCC/CE
Dimming	UL 2733 22AWG *2C L=250±20mm	Y=M

### LABEL

92.00 mm

45.00 mm

**INPUT**

L (BROWN 棕)

G (Y/G 黄/绿)

N (BLUE 蓝)

Io adj.

**X6-036M052L**

LED DRIVER

LED 控制装置(恒流型, 内置防雷管)

**OUTPUT**

(BROWN 棕) Vo +

(BLUE 蓝) Vo -

(PURPLE 紫) DIM +

(GRAY 灰) DIM -

INPUT (输入)	100-240V~ 50/60Hz, 0.50A Max. PF:0.95 277V~ 50/60Hz, 0.25A Max (277V~ for North America only)	IP67	
OUTPUT (输出)	28-52V= 0.08-0.80A Max.(最大电压): 70V=	RoHS	<b>SELV</b>
	Max.Power(最大功率):36W		
tc: 85℃	ta: 60℃ Input: 100-240V~, 277V~		

MADE IN CHINA      SHENZHEN MOSO ELECTRONICS TECHNOLOGY CO., LTD

For LED module only      No. 1061, Songbai Road, Xili Town, Nanshan District, Shenzhen, CHINA

### CASE LABEL

