MOSO®
Stock Code: 002660

Product Specification

Product Name: 40W Constant Current LED Driver

Product Model: A5-040M058A12

Version: B.3

Address: XiLi Songbai Road 1061, Nanshan District, Shenzhen City, Guangdong Province, P.R.China

TEL: 0755-27657000

FAX: 0755-27657908

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Website: http://www.mosopower.com

Prepared By	Checked By	Approved By

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Specification for Approval

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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.		

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Description

The input voltage range of the A5-40W series is 90-264Vac, and the output current is adjustable. This series of products is specially designed for explosion-proof lamps and high bay lamps. Support 0-10V/PWM/resistance dimming, dim to off. With high efficiency and simple metal shell design, the product has excellent heat dissipation performance, which effectively improves product reliability and extends life.In order to ensure trouble-free operation of the product, this series has lightning protection, output overvoltage protection, short circuit protection and over temperature protection to ensure high product reliability

Product Features

- Input voltage：90~264Vac；
- Design plan：Isolated constant current design；
- Dimming：0-10V/PWM/Resistor，dim to off；
- Current adjustment：by potentiometer;
- Auxiliary power supply：12V/0.2A;
- Protection：OCP, OVP, OTP
- Surge protection: DM 4KV，CM 6KV；
- IP rate：IP65；
- Warranty：5 years

Application

Explosion-proof lighting

Industry lighting

Models

Model	Input voltage range(Vac)	Max Po (W)	Vout (V)	Iout(A)	Default Iout(A)	Typical Efficiency	PF	THD
A5-040M058A1	100-240Vac	40	30-58	0.60~0.87	0.70	87%	0.97	10%

Note: 1. All specifications are measured at 25℃ ambient temperature, input voltage 220Vac, and the typical value tested by full load, if no specific note；

2. Over-power use is strictly prohibited, otherwise the warranty will be invalid.

Input Specifications

Parameter	Min	Typ.	Max	Notes
Input Voltage Range	90Vac	-	264Vac	
Rated input voltage	100Vac	-	240Vac	Refer to Output Power vs. Input Voltage curve
Input Frequency AC	47Hz	50/60Hz	63Hz	
Max Input Current	-	-	0.8A	120Vac&100%load
Max Input Power	-	-	50W	120Vac&100%负 load
Leakage Current	-	-	0.70mA	240Vac/60Hz
Inrush Current	-	-	45A	220Vac
Standby power consumption	-	-	0.5W	220Vac，dim to off
Power Factor (PF)	0.98	0.99	-	120Vac，50-60Hz，70%-100%load
Power Factor (PF)	0.94	0.97	-	220Vac，50-60Hz，70%-100%load
Total Harmonic Distortion (THD)	-	8%	15%	120-240Vac，50-60Hz，70% -100%load(without auxiliary supply)
MCB(B16)	-	21	-	220Vac

Output Specification

Parameter	Min	Typ.	Max	Notes
Output Voltage Range	30Vdc	-	58Vdc	
No load output voltage	-	-	80Vdc	
Output Current Range	0.60A	-	0.87A	adjustable via potentiometer
Full-power Output Current Range	0.69A	-	0.87A	P=Uo*Io within this range
Current Accuracy	-8%	-	+8%	
Total Output Current Ripple (pk-pk)	-	150%	200%	20MHz BW，100%20MHz BW full load＆LED load the LED load ripple is slightly different for different leds
Startup Overshoot Current	-	-	10%	120~240Vac & 100%load&LED
Auxiliary output voltage	10.8V	12V	13.8V	
Auxiliary output current		-	200mA	
Line Regulation	-5%	-	+5%	25℃±10℃ ambient temperature, input varies from 120Vac to 240Vac
Load Regulation	-3%	-	+3%	Load varies from 70% to 100% with 220Vac Input at 25℃±10℃ ambient temperature
Turn-on Delay Time	-	-	1.0S	120~240Vac, 100%load

General Specification

Parameter	Min	Typ.	Max	Notes
Efficiency@120Vac Io=0.70A	85%	86%	-	100%load，25℃ Ta, without auxiliary power supply
Efficiency@220Vac Io=0.70A	86%	87%	-	100%load，25℃ Ta, without auxiliary power supply
MTBF	-	200000 小时	-	25℃±10℃ Ta 220Vac,80%load (MIL-HDBK-217F/SR-332)
Lifetime	-	50000 小时	-	230Vac&100%load, Tc 75℃, refer to lifetime vs. case temperature curve
Operating Temperature Ta	-40℃	-	+55℃	Output Power vs. Ambient Temperature curve
Operating Tc for Safety Tc_s	-40℃	-	+90℃	
Operating Tc for Warranty Tc_w	-40℃	-	+75℃	5-year warranty shell temperature,humidity:10% to 95% RH
Storage Temperature Ta	-40℃	-	+85℃	Humidity:5% to 100% RH
Altitude	-60m	-	4000m	
Over Temperature Protection_Tc	90℃	95℃	100℃	Decrease power(45-55%), returning to normal after over temperature is removed.
Short Circuit Protection				Hiccup mode, when the short circuit condition is relieved, the product will automatically return to normal.
Output voltage protection				When exceeds the limited range, it enters protection mode. When the fault is removed, the product will automatically return to normal.
Dimensions (Ø*H)	90*38mm			
Net Weight	440±50g/PCS			
Package (L*W*H)	L390xW250xH235mm；32PCS/CTN			

Dimming

Parameter	Min	Typ.	Max	Notes
0~10Vwire Maximum	-	10V	20V	
Source Current on Vdim	-	100uA	200uA	
Dimming Range	10% I_{max}	-	100% I_{set}	Iset is the Iout adjustable
Suggest Dimming Input	0V	-	10V	
Turn-on Voltage	1.0V	-	1.4V	
Turn-off Voltage	0.6V	-	1.0V	
PWM in High Level	9.7V	-	10.3V	
PWM in Low Level	0V	-	0.3V	
PWM in Frequency Range	1KHz	-	2KHz	
PWM in Duty Cycle	0%	-	100%	
Turn-on Duty Cycle	9%	-	12%	
Turn-Off Duty Cycle	6%	-	9%	
Resistor dimming	-	-	100KΩ	

Safety Specifications

Parameter	Min	Typ.	Max	Notes
Dielectric Strength (Input-Output)	-	3750Vac	-	60S，Current not exceeding 5mA
Dielectric Strength (Input-Ground)	-	1875Vac	-	60S，Current not exceeding 5mA
Dielectric Strength (Output-Ground)	-	500Vac	-	60S，Current not exceeding 5mA
Dielectric Strength (Input-Dimming)	-	3750Vac	-	60S，Current not exceeding 5mA
Dielectric Strength (Output-Dimming)	-	500Vac	-	60S，Current not exceeding 5mA
Grounding Resistance	-	-	0.1Ω	25℃±10℃ Ambient Temperature, pass 25A Current, 60s.
Insulation Resistance	50MΩ	-	-	Input-Output, Input-PE, Output-PE, 500Vdc/60S/25℃

Safety Compliance

EMC Category	Standards	Approved	Notes
CCC	GB19510.1,GB19510.14	√	
CE	EN61347-1,EN61347-2-13		
CE	EN62493		
CB	IEC61347-1, IEC61347-2-13		
ENEC	EN62384		
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		
SAA	AS/NZS 61347.1		

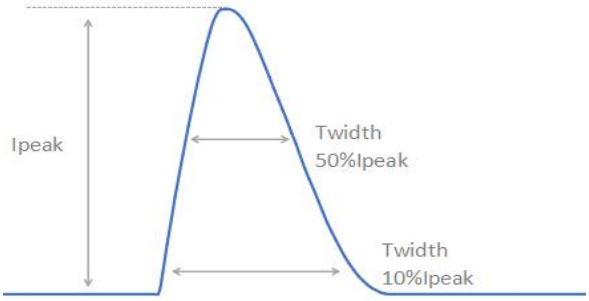
EMC Compliance

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	ANSI/C82.77-5-2017		
Ringing Wave			

RoHS

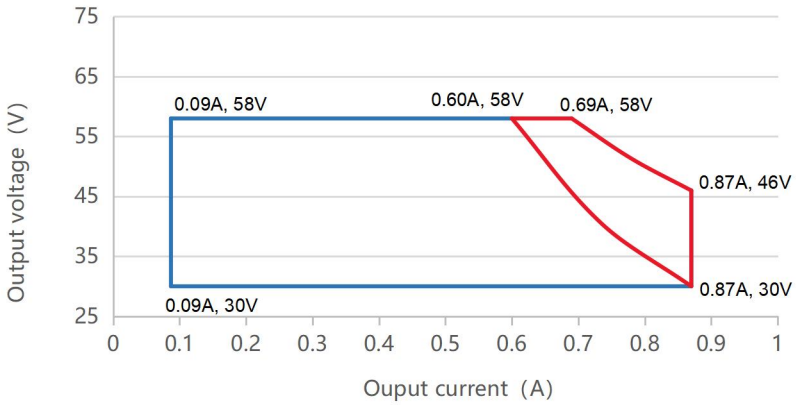
Our products comply with reference to RoHS Directive 2011/65/EU amending（EU）2015/863

Inrush Current



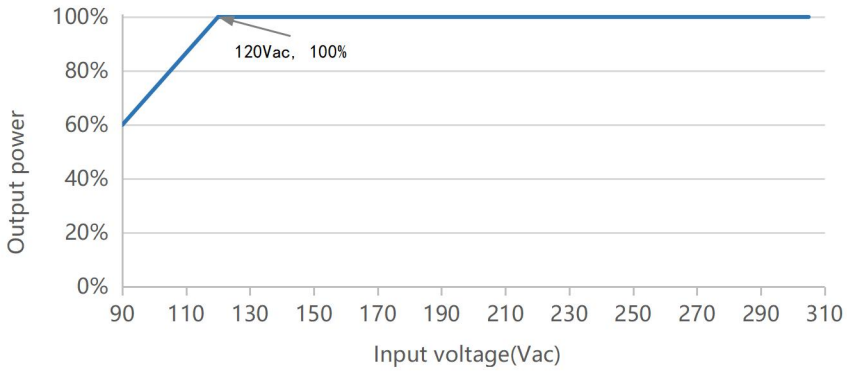
Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
220Vac	27A	492μs	236μs

Output Voltage vs. Output Current

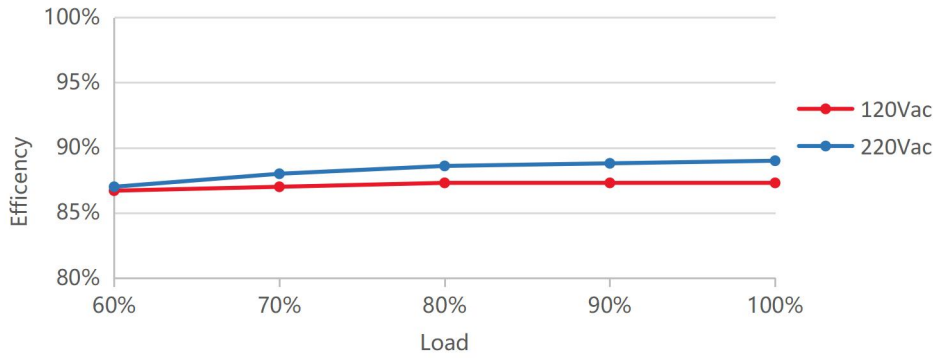


Red curve: good performance area

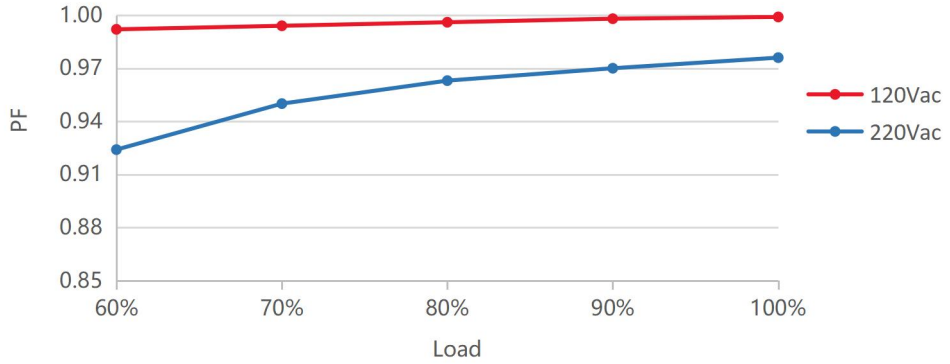
Output Power vs. Input Voltage



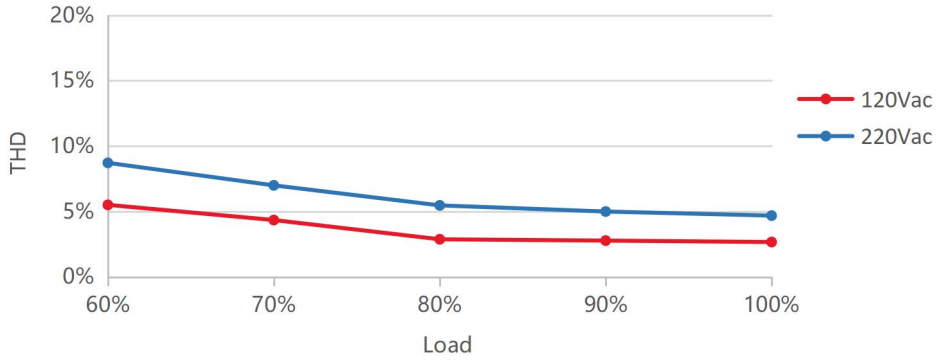
Efficient vs. Load(Io=0.70A)



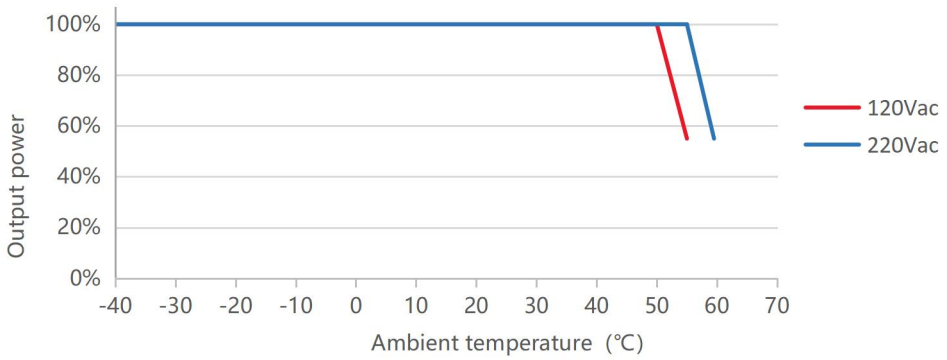
PF vs. Load



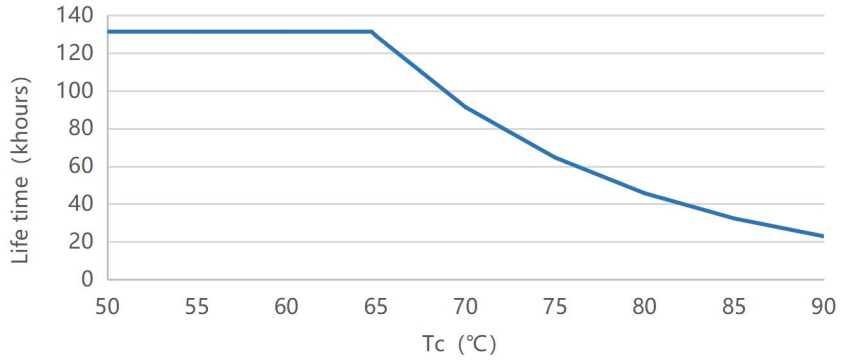
THD vs. Load



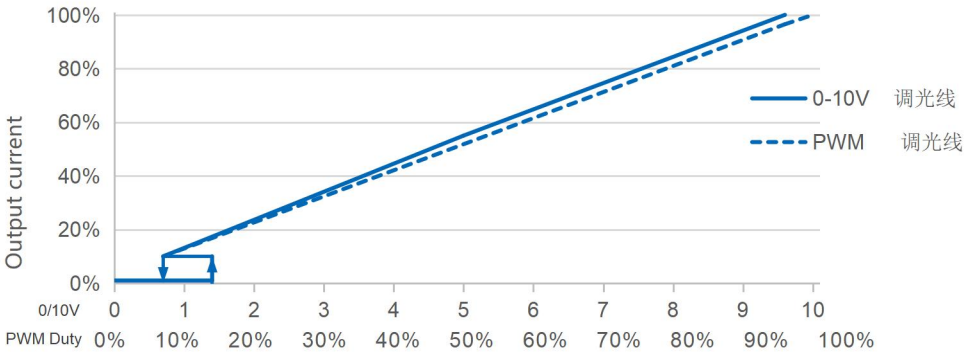
Derating curve



Lifetime cure

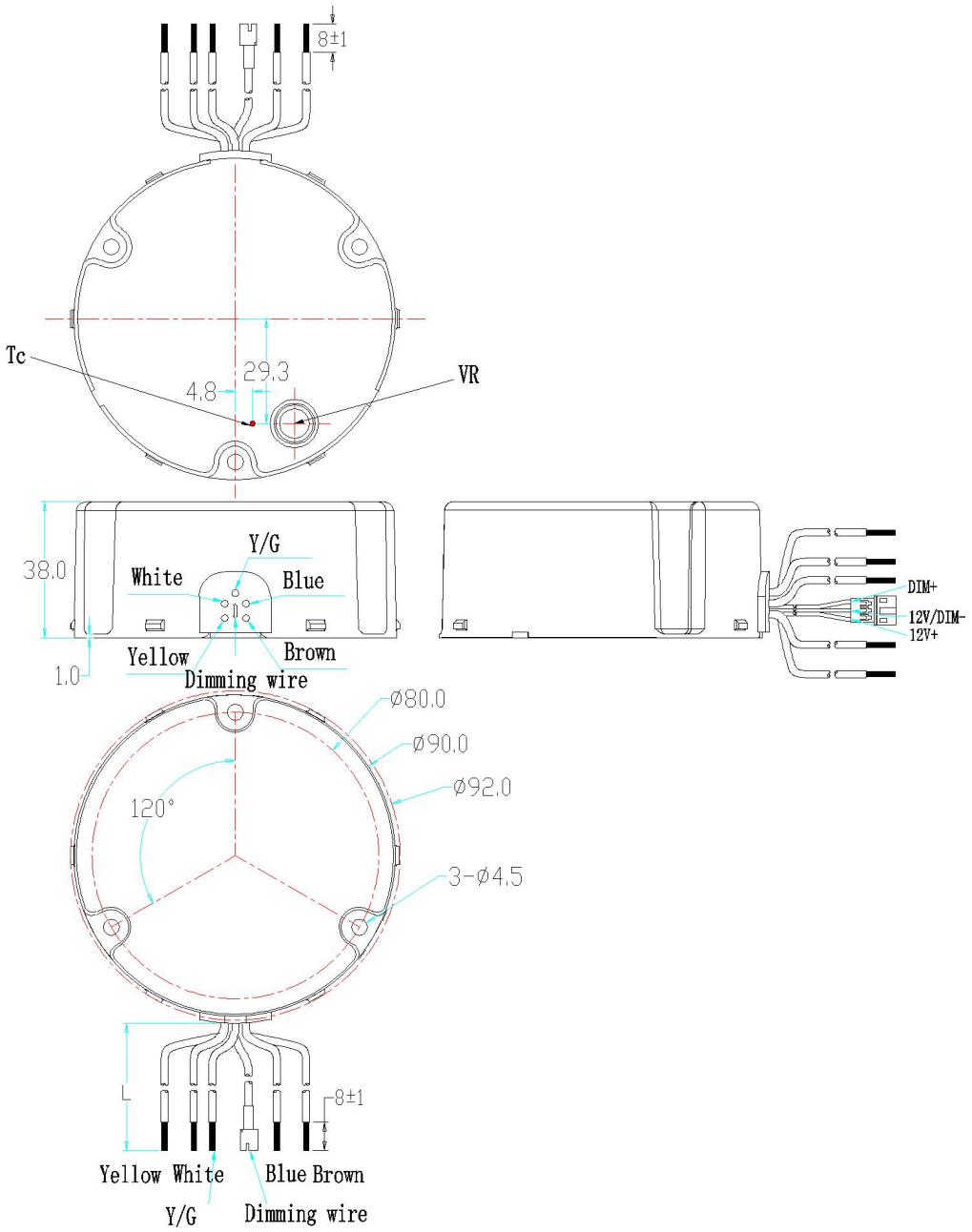


0-10V/PWM dimming



Note: The dimming shutdown mode is to reduce the output voltage. After the dimming is turned off, the power output still has residual voltage, and the lamp turn-on voltage should be 35-58V.

Mechanical Outline



Specification

Input L wire	UL3398 18AWG L=180±20mm brow	
Input N wire	UL3398 18AWG L=180±20mm blue	
Input ground wirre	UL3239 18AWG L=180±20mm yellow-green	
Input LED+	UL3239 18AWG L=180±20mm white	
Output LED-	UL3239 18AWG L=180±20mm yellow	
Dimming	UL2468 L=180±20mm with male terminal	

Version

A.2	First release	2023-09-20
B.3	ECL202311014	2023-11-10