Description

The X7 series is outdoor NFC adjustable LED driver that operates in constant current with high PF value and universal input voltage range 90~305Vac. Adaption with wireless programming via Near Field Communication (NFC).The X7 series also provide multiple isolated dimming controls, Dim-to-Off and Always-On Auxiliary Power. It also helps clients to improve the management of logistics and stock. The compact metal case and high efficiency enable the driver to operate with high reliability, It provides extreme durability with an IP67 rating and extending product lifetime. Overall protection is provided against lightning surge, output over voltage, short circuit and over temperature to ensure low failure rate.

Product Features

- Universal input voltage / Full range: 90~305Vac;
- Constant power design, output current NFC adjustable;
- 3-in-1 dimmable: 0~10Vdc / PWM/ Res. Dim-to-off;
- Auxiliary output:12V 250mA;
- Standby Power:<0.5W;
- Output and Dimming Signal Isolating;
- Surge protection: 6KV 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

Roadway lighting
Industrial lighting
Landscape Lighting
Horticulture 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.)
X7-240M056A12	120-277	240	28-56	4.30-6.85	5.0	92%	0.97	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 230Vac, and the typical value tested at full load, if no specific note.

Input Specifications

Parameter	Min	Typ.	Max	Notes
Input Voltage Range	90Vac	-	305Vac	
Full Power Work Range	120Vac	230/277Vac	277Vac	Refer to Output Power vs. Input Voltage curve.
Input Frequency AC	47Hz	50/60Hz	63Hz	
Max Input Current	-	-	3.2A	100Vac＆100% load.
Max Input Power	-	-	280W	100Vac＆100% load.
Leakage Current	-	-	0.70mA	IEC 60598-1; 240Vac/60Hz.
Leakage Current	-	-	0.75MIU	UL 8750; 277Vac/60Hz.
Inrush Current	-	-	75A	230Vac,100% load.
Standby Power Consumption	-	-	0.5W	230Vac,dimming off and auxiliary source without load
Power Factor (PF)	0.95	0.97	-	100-240Vac,50-60Hz,70%-100% load.
Power Factor (PF)	0.92	0.95	-	277Vac,50-60Hz,70%-100% load.
Total Harmonic Distortion (THD)	-	10%	15%	100-240Vac,50-60Hz,70%-100% load.
Total Harmonic Distortion (THD)	-	10%	15%	277Vac,50-60Hz,70%-100% load.
MCB(B16)	-	2	-	230Vac;100%load.

Output Specifications

Parameter	Min	Typ.	Max	Notes
Output Voltage Range	28Vdc	-	56Vdc	The full power cannot be lower than 35Vdc.
NO-Load Output Voltage	-	-	70Vdc	
Output Current Range	70%I_{set}	-	100%I_{set}	Adjustable current range with NFC,I_{set} is set to the full power range.
Full Power Current Range	4.30A	-	6.85A	
Current Accuracy	-5%	-	+5%	
Total Output Current Ripple (pk-pk)	-	10%	15%	20MHz BW full load＆LED load the LED load ripple is slightly different for different LEDs.
Startup Overshoot Current	-	-	10%	100-277Vac full load condition， LED load.
Auxiliary Source Output Voltage	11.04V	12.00V	12.96V	277Vac＆Auxiliary source with full load.
Auxiliary Source Output Current	-	-	250mA	
Line Regulation	-3%	-	+3%	25℃±10℃ ambient temperature, input changes from 176Vac to 264Vac.
Load Regulation	-3%	-	+3%	Load varies from 70% to 100% with 230Vac Input at 25℃±10℃ ambient temperature.
Turn-on Delay Time	-	-	1.0s	120Vac,25℃±10℃ ambient temperature.
Turn-on Delay Time	-	-	1.0s	230Vac,25℃±10℃ ambient temperature.

General Specifications

Parameter	Min	Typ.	Max	Notes
Efficiency@120Vac lo=6.85A	88.5%	90.0%	-	100% load, No load of auxiliary source.
Efficiency@120Vac lo=4.30A	89.0%	90.5%	-	100% load, No load of auxiliary source.
Efficiency@230Vac lo=6.85A	90.5%	92.0%	-	100% load, No load of auxiliary source.
Efficiency@230Vac lo=4.30A	91.0%	92.5%	-	100% load, No load of auxiliary source.
Efficiency@277Vac lo=6.85A	91.5%	93.0%	-	100% load, No load of auxiliary source.
Efficiency@277Vac lo=4.30A	92.0%	93.5%	-	100% load, No load of auxiliary source.
Mean Time Between Failure	-	200Khours	-	25℃±10℃ ambient temperature，230Vac，80% load condition (MIL-HDBK-217F/SR-332).
Lifetime	-	50Khours	-	230Vac＆100% load，Tc 75℃,refer to lifetime vs. case temperature curve.
Operating Temperature Ta	-40℃	-	+45℃	100-200Vac,refer to Output Power vs. Ambient Temperature curve.
Operating Temperature Ta	-40℃	-	+50℃	200-277Vac,refer to 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	
Input Under Voltage Protection	50Vac	75Vac	90Vac	Turn off the output or hiccup when the input voltage falls below protection voltage.
Over Temperature Protection Tc	-	95℃	-	Tolerance±5°C,decreases output current, returning to normal after over temperature is removed.
Short Circuit Protection	-	-	-	Hiccup mode. The output shall return to normal when the fault condition is removed.
Dimensions (L*W*H)	231*72*39mm			
Net Weight	1100±100g/PCS			
Package(L*W*H)	575*375*204mm;18PCS/Ctn, Gross Weight:22.3Kg			For reference only

Dimming

Parameter	Min	Typ.	Max	Notes
Absolute Maximum Voltage	-10V	10V	20V	On the Vdim (+) Pin.
Source Current on Vdim (+)Pin	90uA	100uA	110uA	
Dimming Range	10% I_{set}	-	100% I_{set}	I_{set} is set to the full power range.
Suggest Dimming Input 0-10V	0V	-	10V	
Turn-on Voltage	0.9V	-	1.2V	
Turn-off Voltage	0.6V	-	0.9V	
PWM in High Level	9.7V	-	10.3V	
PWM in Low Level	0V	-	0.3V	
PWM in Frequency Range	500Hz	-	2KHz	
PWM in Duty Cycle	1%	-	99%	
Turn-on Duty Cycle	-	-	-	
Turn-Off Duty Cycle	-	-	-	
Resistor Dimming	-	-	-	100KΩ.

Safety Specification

Dielectric Strength（Input-Output）	-	3750Vac	-	60s，Current not exceeding 5mA.
Dielectric Strength（Input-Ground）	-	1600Vac	-	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（Dimming-Ground）	-	500Vac	-	60s，Current not exceeding 5mA.
Grounding Resistance	-	-	0.1Ω	25℃±10℃ Ambient Temperature, pass 25A Current, 60s.
Insulation Resistance	10MΩ	-	-	Input-Output, Input-PE, Output-PE, 500Vdc/60s/25℃.

Safety Compliance

Safety Category	Standards	Approved	Notes
CCC	GB19510.1,GB19510.14	✓	
CE	EN61347-1, EN61347-2-13, EN62493	✓	
ENEC	EN61347-1, EN61347-2-13, 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		
SAA	AS/NZS 61347.1		

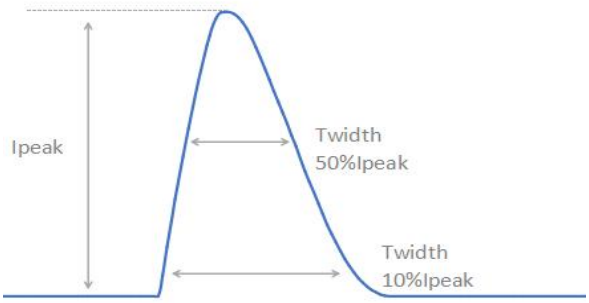
EMC Compliance

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

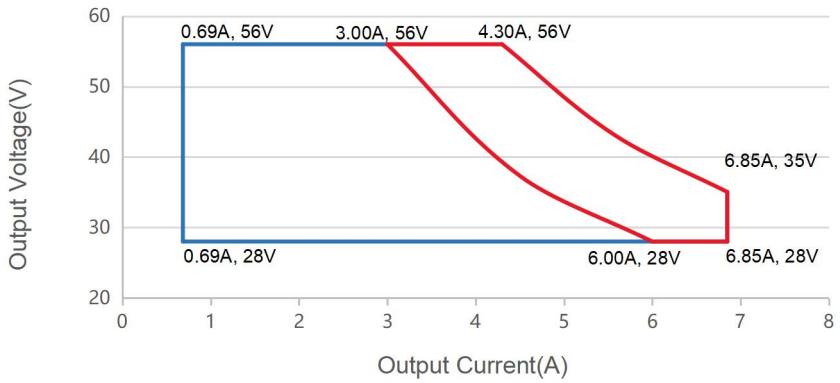
Our products comply with RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Inrush Current



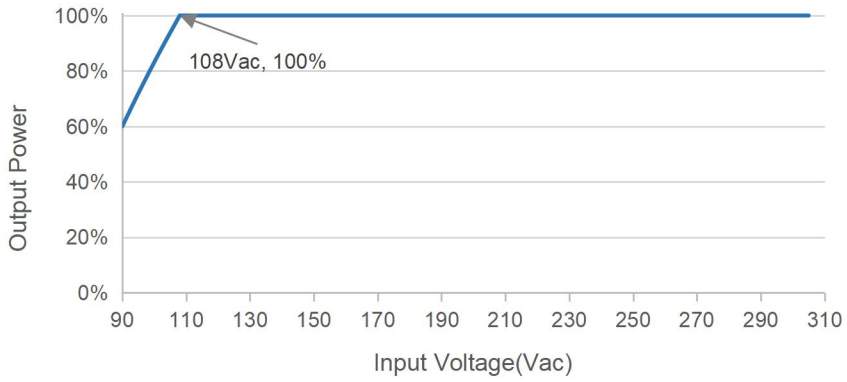
Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
120Vac	26.7A	1044μs	292μs
230Vac	51.2A	1084μs	424μs
277Vac	63.6A	1016μs	464μs

Output Voltage vs. Output Current

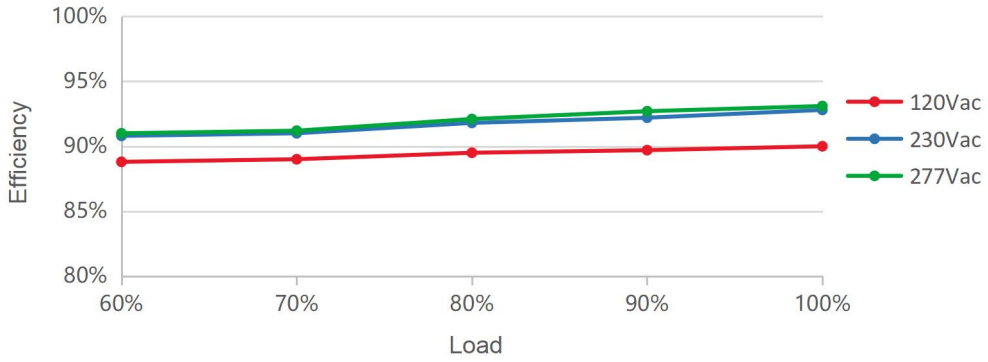


Red curve: good performance area.

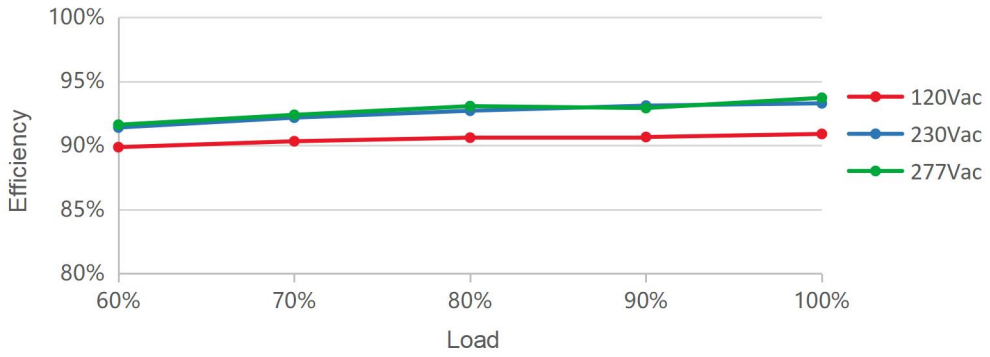
Output Power vs. Input Voltage



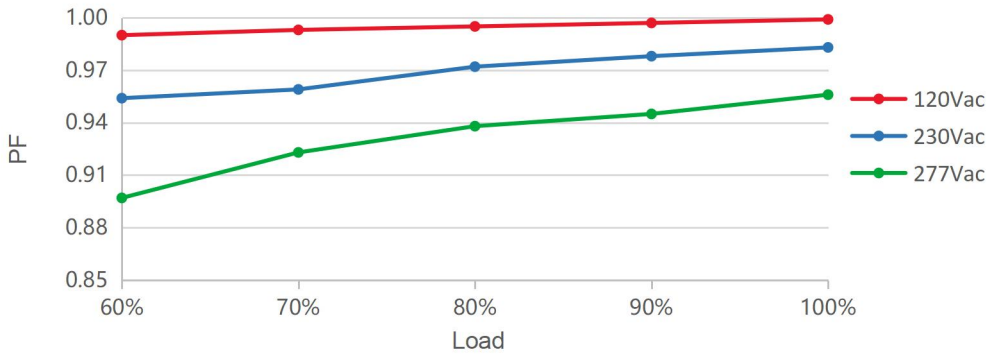
Efficiency vs. Load (Io=6.85A)



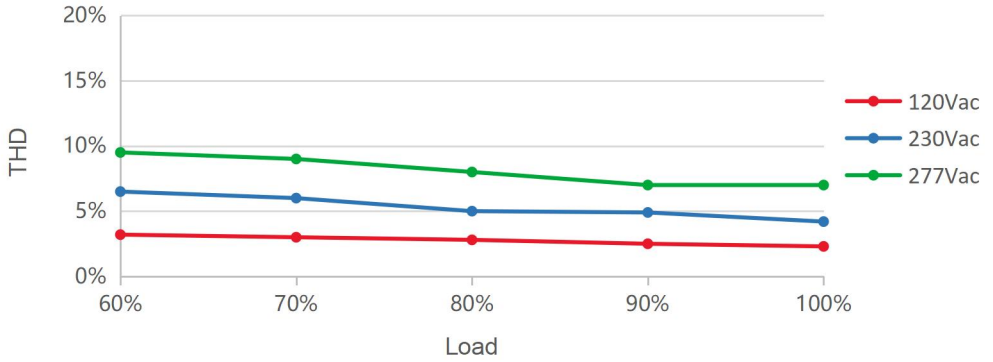
Efficiency vs. Load (Io=4.30A)



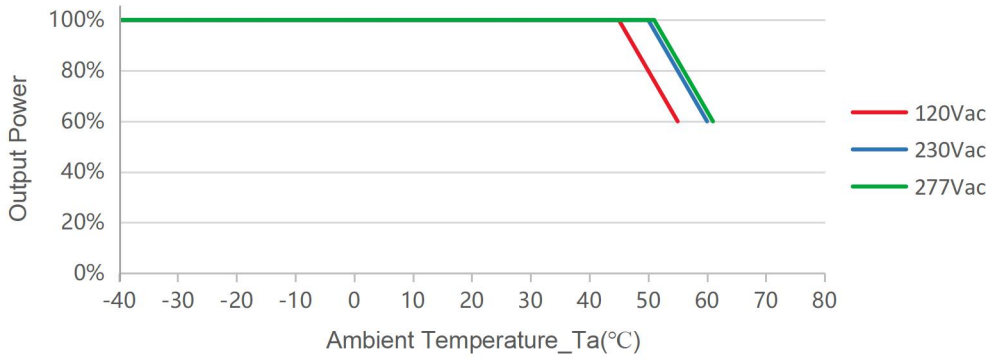
PF vs. Load



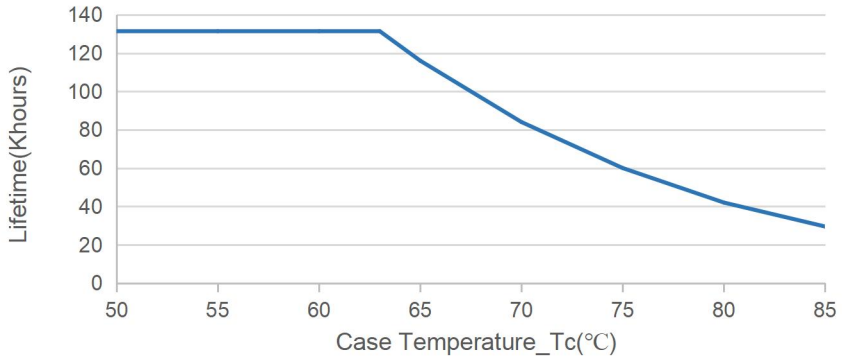
THD vs. Load



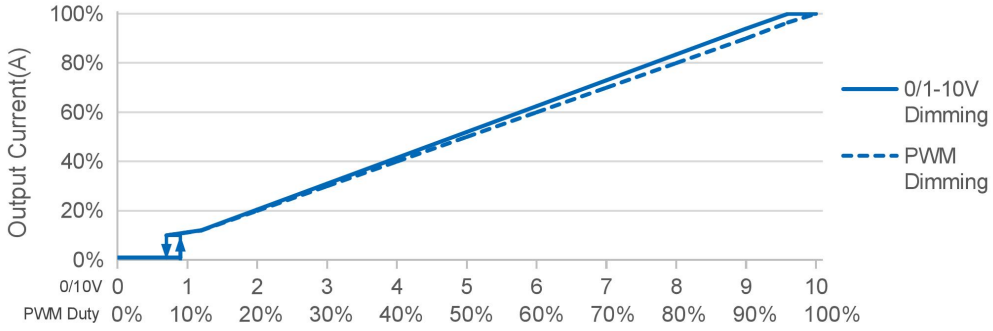
Output Power vs. Ambient Temperature



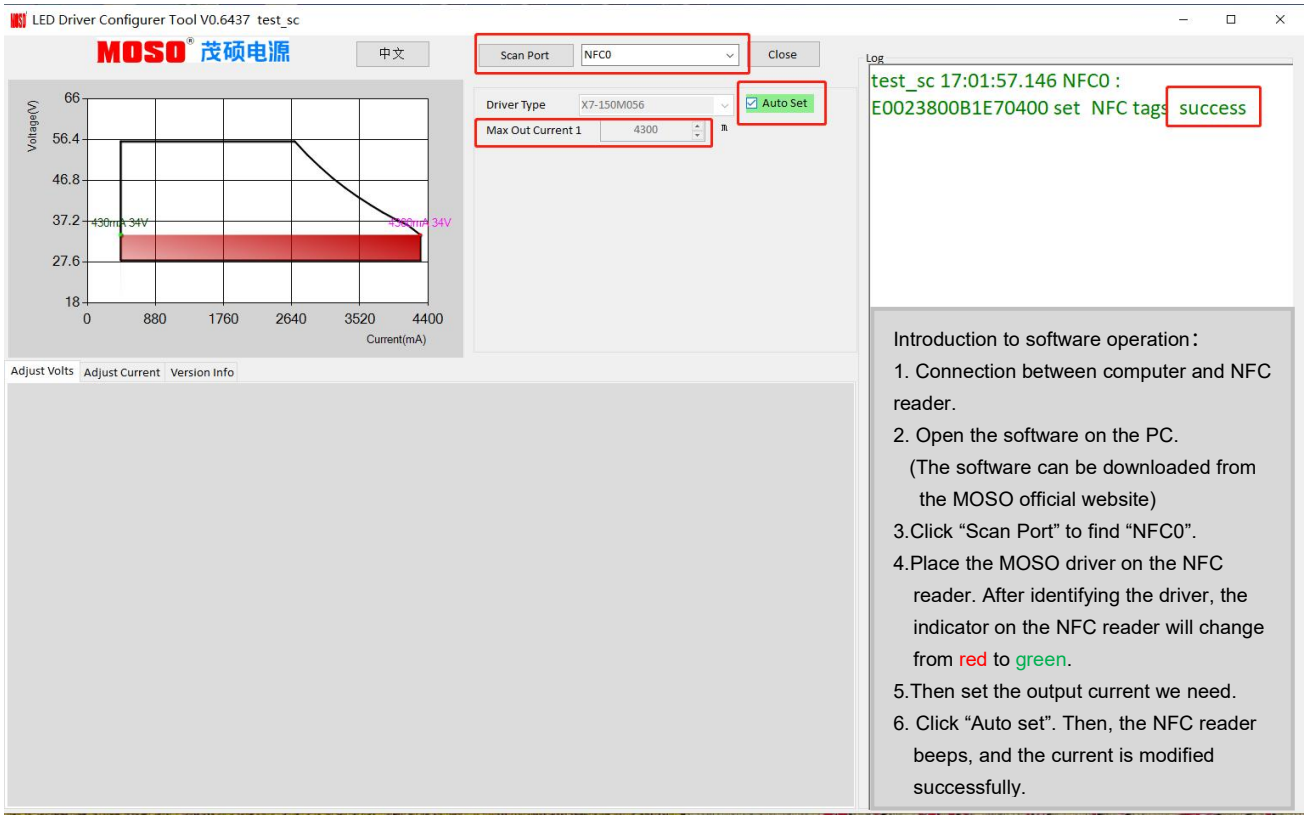
Lifetime vs. Case Temperature



0-10V/PWM Dimming



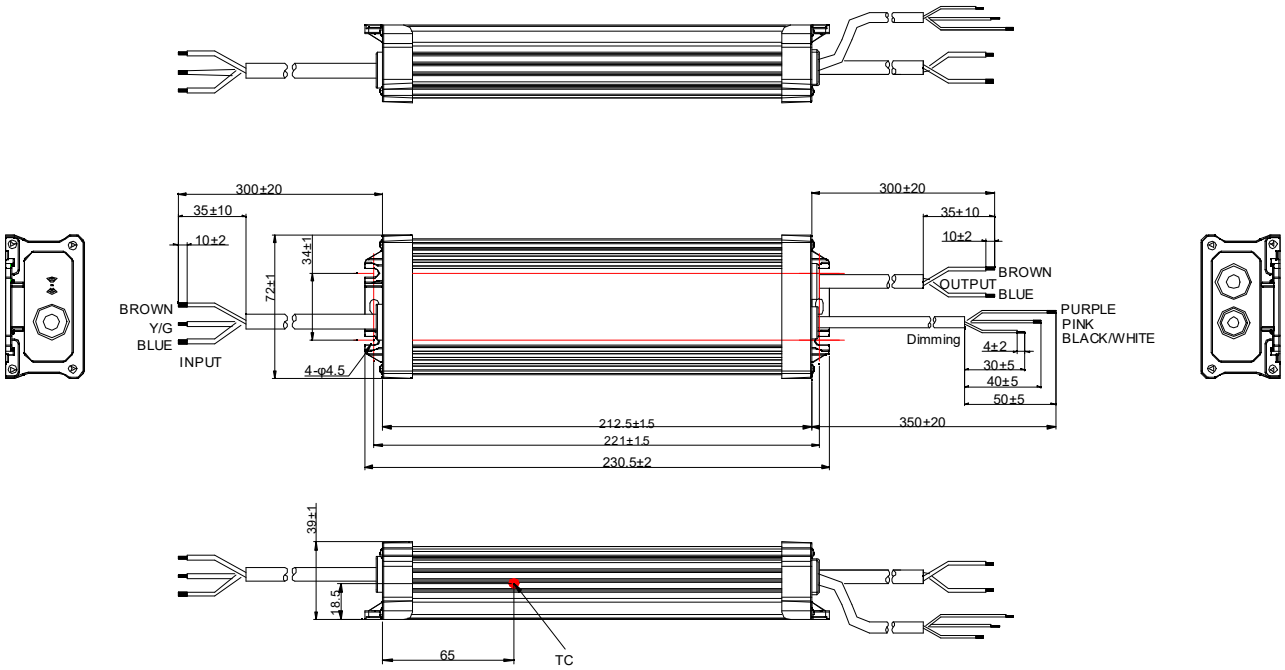
NFC Adjustable Driver



Note:

The driver part No. are programmed as per the actual part No..

Mechanical Outline



Specification

Input	CCC+VDE 3x1.0mm2 external diameter:7.3 L=300±20mm	CCC/CE
Output	CCC+VDE 2x1.0mm2 external diameter:6.9 L=300±20mm	CCC/CE
Dimming	UL21996 22AWG*3C Ø5.0mm L=350±20mm	Dim+/Dim-, A12

Label

Note:

Nameplate is laser engraved.

Version

A.1	First release	2023-04-12
B.2	ERL202307008	2023-07-05
C.2	ECL202311023	2023-11-16

Specification for Approval

Product Name：240W LED Driver

Product Model：X7-240M056A12

Rev：C.2

Address:XiLiSongbai Road 1061, Nanshan District, Shenzhen City, Guangdong, China
Tel: 0755-27657000
FAX: 755-27657908
E-mail:info@mosopower.com
Web Site:http://www.mosopower.com

Prepared By	Checked By	Approved By

Specification for Approval

Product Name: 240W LED Driver

Product Model: X7-240M056A12

Rev: C.2

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

Address:XiLiSongbai Road 1061, Nanshan District, Shenzhen City, Guangdong, China
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Prepared By	Checked By	Approved By