

## Description

The X7L series is an outdoor LED constant current driver with a very high power factor. This series is designed for low power street lights and tunnel lights. It supports 0-10V/PWM dimming and Dim-to-off. The high efficiency and simple metal housing design provides excellent heat dissipation, which effectively improves reliability and extends product life. To ensure trouble-free operation, the X7L series has lightning protection, output over voltage, short circuit to ensure low failure rate.



## Product Features

- Universal input voltage: 90~305Vac;
- Isolate constant power design;
- Control solutions: 0~10Vdc / PWM;
- Potentiometer regulated current;
- Protections: SCP / OVP;
- surge protection: 4KV line-line, 6KV line-earth;
- IP67 design outdoor applications;
- Suitable for dry / damp / wet locations;
- 5 years warranty;

## Application

Road and street 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.)
X7-042M072L	100~240/277	42	40~72	0.58~0.95	0.90	89%	0.97	10%

Notes:

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

[2]. All specifications are measured at 25°C 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	Low voltage 108Vac derating and ambient temperature reduction
Rated Input Voltage Range	100Vac	120/230Vac	277Vac	Refer to Output Power vs. Input Voltage curve
Input Frequency AC	47Hz	50/60Hz	63Hz	
Max Input Current	-	-	0.65A	90Vac & 100% load
Max Input Power	-	-	55W	90Vac & 100% load
Leakage Current	-	-	0.70mA	IEC 60598-1; 240Vac/60Hz
Leakage Current	-	-	0.75MIU	UL 8750;277Vac/60Hz
Inrush Current	-	-	60A	230Vac, 100% load
Power Factor (PF)	0.94	0.96	-	100-240Vac, 50-60Hz, 75%-100% load
Power Factor (PF)	0.90	0.92	-	277Vac, 50-60Hz, 75%-100% load
Total Harmonic Distortion (THD)	-	10%	15%	100-240Vac, 50-60Hz, 70%-100% load
Total Harmonic Distortion (THD)	-	15%	20%	277Vac, 50-60Hz, 70%-100% load
MCB(B16)	-	10	-	277Vac; 100%load
MCB(B16)	-	12	-	240Vac; 100%load

## Output Specifications

Parameter	Min	Typ.	Max	Notes
Output Voltage Range	40Vdc	-	72Vdc	
Open Circuit Voltage	-	-	90Vdc	
Full Power Current Range	0.58A	-	0.95A	Adjustable output current with potentiometer
Current Accuracy	-5% $I_{set}$	-	+5% $I_{set}$	25°C±10°C Ambient temperature
Total Output Current Ripple (pk-pk)	-	80%	150%	25°C±10°C Ambient temperature 20MHz BW full load & LED load the LED load ripple is slightly different for different leds
Startup Overshoot Current	-	-	10%	220-240Vacfull load condition, LED load
Line Regulation	-3%	-	+3%	25°C±10°C ambient temperature, input changes from 100Vac to 277Vac
Load Regulation	-5%	-	+5%	Load varies from 75% to 100% with 230Vac Input at 25°C±10°C ambient temperature
Turn-on Delay Time	-	-	1.0s	100-277Vac,100% load

## General Specifications

Parameter	Min	Typ.	Max	Notes
Efficiency@230Vac Io=0.58A Io=0.95A	87% 86%	89% 88%	-	100% load, 25°C ambient temperature
Mean Time Between Failure	-	200Khours	-	25°C±10°C ambient temperature, 230Vac, 80% load condition (MIL-HDBK-217/SR-332)
Lifetime	-	50Khours	-	230Vac & 100% load, Tc 75°C, refer to lifetime vs. case temperature curve
Operating Temperature Ta	-40°C	-	+55°C	Output Power vs. Ambient Temperature curve
Operating Tc for Safety Tc_s	-40°C	-	+90°C	
Operating Tc for Warranty Tc_w	-40°C	-	+75°C	5-year warranty shell temperature, humidity: 10% to 95% RH
Storage Temperature Ta	-40°C	-	+85°C	Humidity: 5% to 100% RH
Altitude	-60m	-	4000m	
Dimensions (L*W*H)	124.2*55.4*33.5mm			
Net Weight	410±50g/PCS			
Package (L*W*H)	466*282*172mm 16PCS/箱,毛重: 8KG			

## Dimming

Parameter	Min	Typ.	Max	Notes
Absolute Maximum Voltage	-	10V	15V	On the Vdim (+) Pin
Source Current on Vdim (+)Pin	-	400uA	650uA	
Dimming Range	10% I <sub>set</sub>	-	100% I <sub>set</sub>	I <sub>set</sub> is set to the full power range
Suggest Dimming Input 0-10V	0V	-	10V	
Turn-on Voltage	0.7V	-	1.0V	
Turn-off Voltage	0.4V	-	0.8V	
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%	
Turn-on Duty Cycle	7%	-	10%	
Turn-Off Duty Cycle	4%	-	8%	

### Notes:

Dimming resolution 1%(PWM), 0.1V(0~10V), Recommended dimming range.

## Safety Specification

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

## 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		

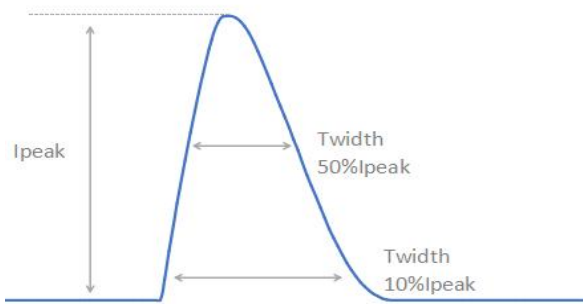
## EMC Compliance

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

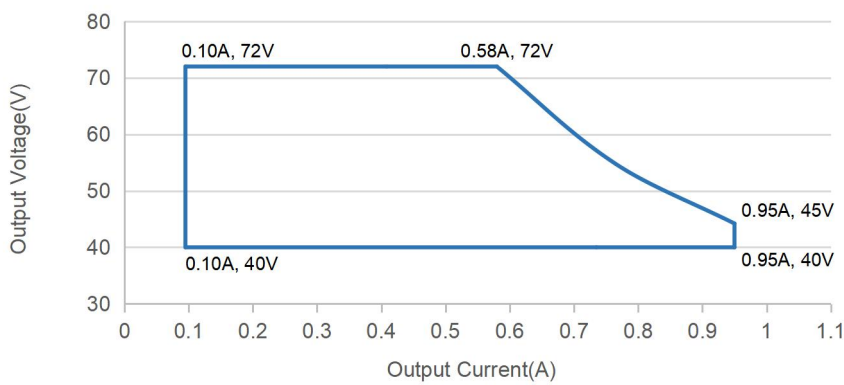
Our products comply with reference to RoHS Directive (EU) 2015/863 amending 2011/65/EU.

### Inrush Current

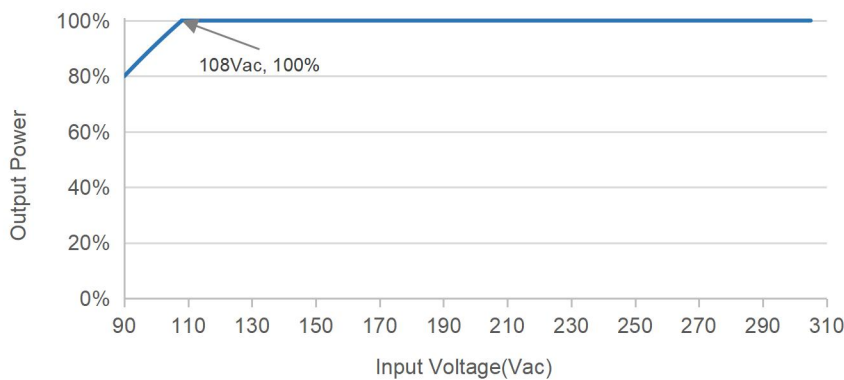


$V_{in}$	$I_{peak}$	$T(@10\% \text{ of } I_{peak})$	$T(@50\% \text{ of } I_{peak})$
230Vac	40.8A	320uS	140uS

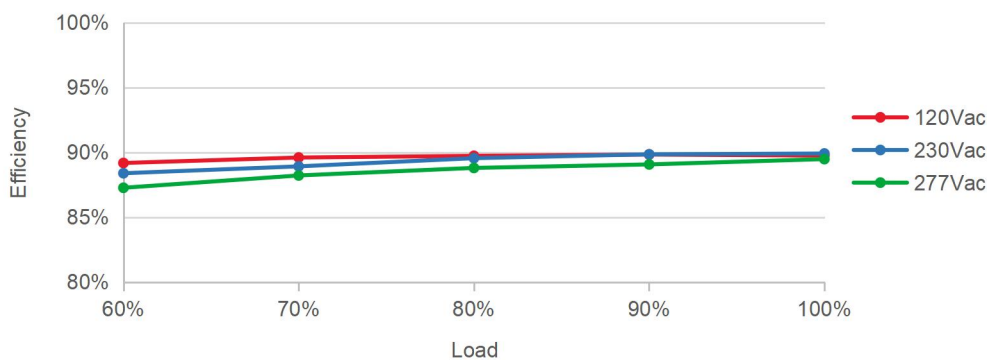
### Output Voltage vs. Output Current



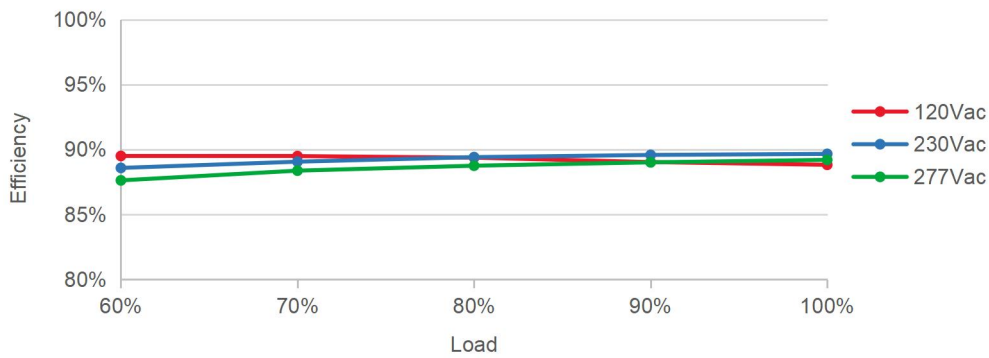
### Output Power vs. Input Voltage



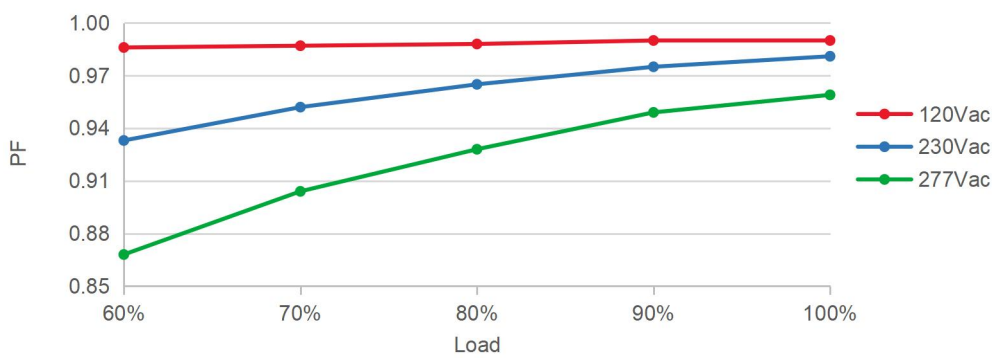
### Efficiency vs. Load ( $I_o=0.58A$ )



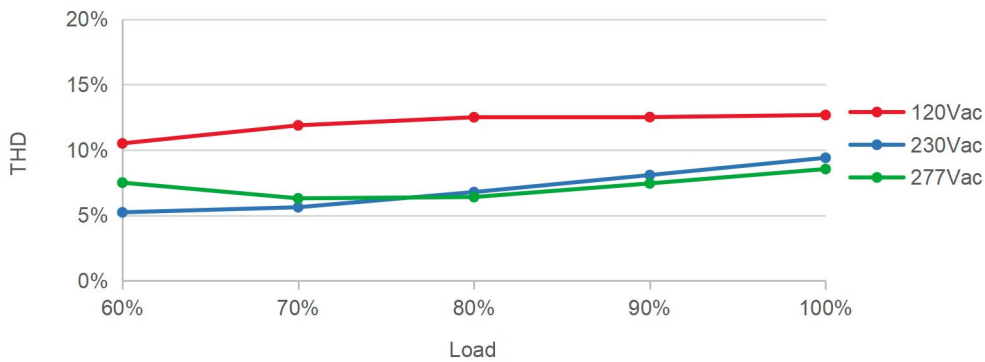
**Efficiency vs. Load (Io=0.95A)**



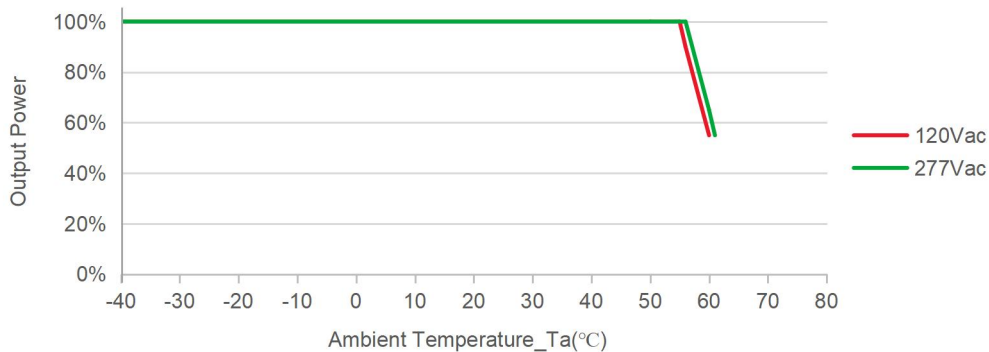
**PF vs. Load**



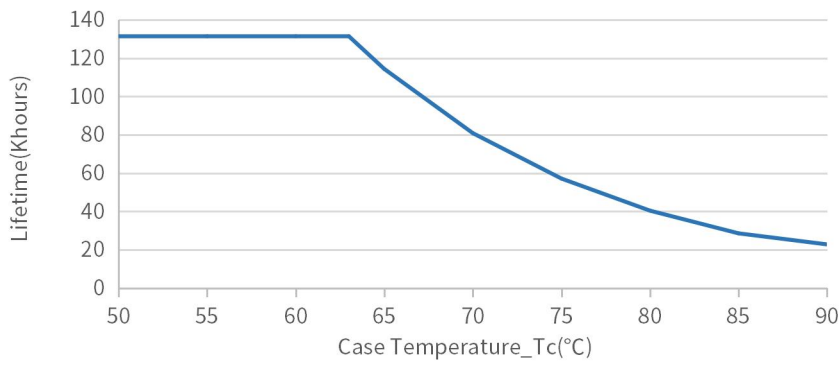
**THD vs. Load**



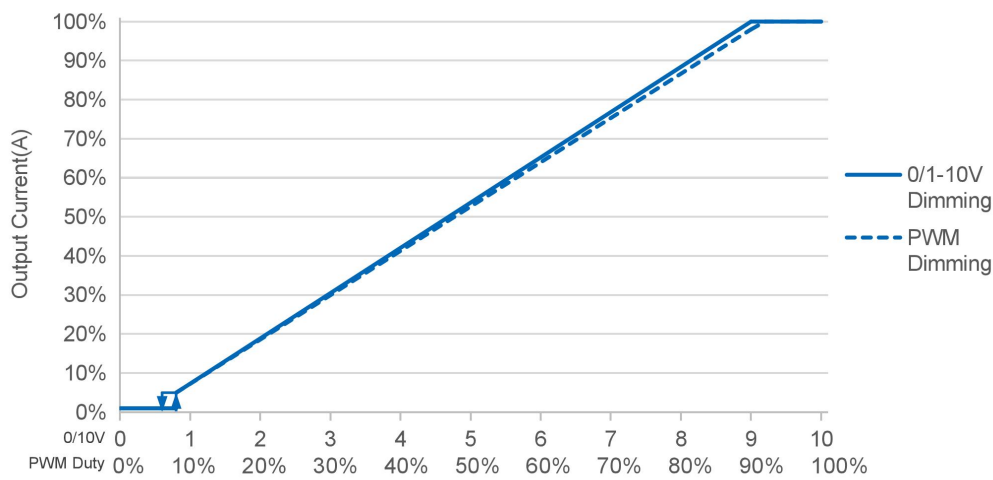
**Output Power vs. Ambient Temperature**



### Lifetime vs. Case Temperature

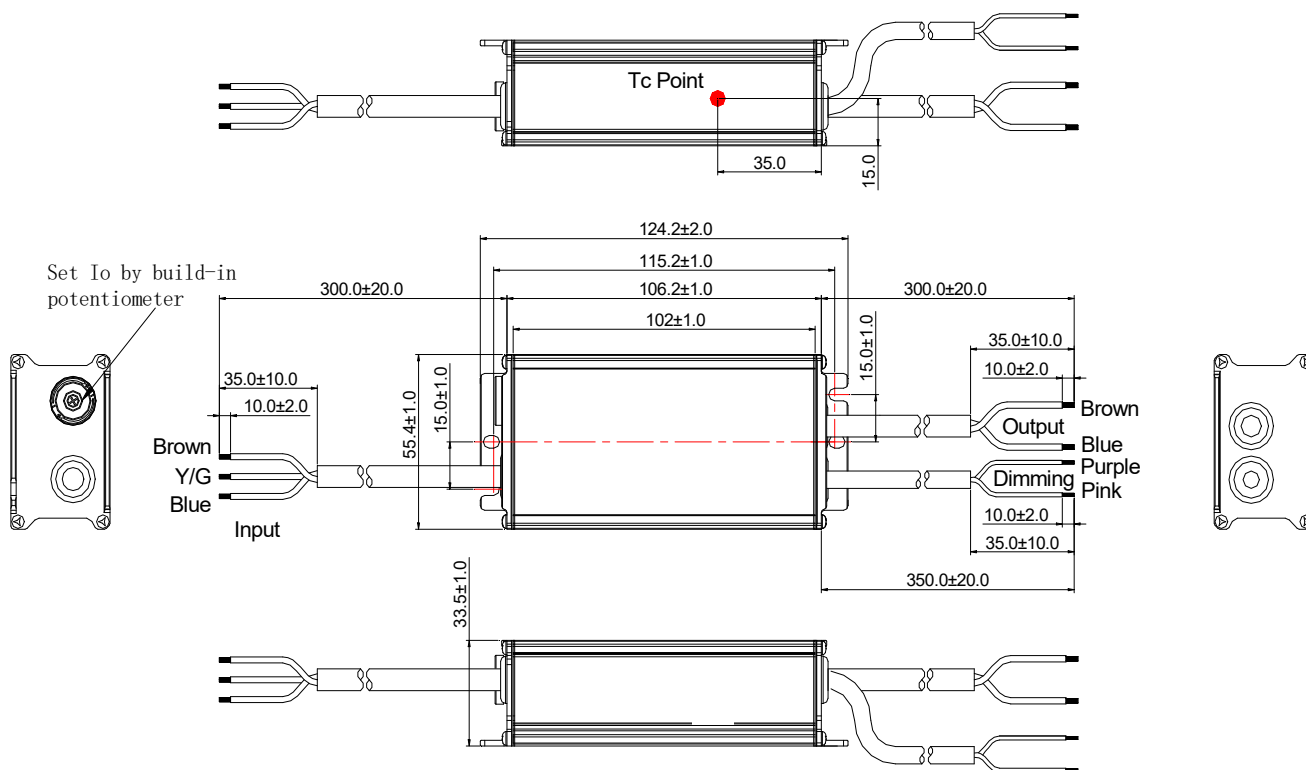


### 0-10V/PWM Dimming



Notes: Afterglow may appear after switching off dimming due to the difference of lamp panel. Thus, lighting fixture grounding test is suggested.

**Mechanical Outline**



**Specification**

Input	CCC+VDE H05RN-F 3*1.0 mm <sup>2</sup> L=300±20mm	CCC/CE
Output	CCC+VDE H05RN-F 2*1.0 mm <sup>2</sup> L=300±20mm	CCC/CE
Dimming	UL 2733 2*22AWG L=350±20mm	UL

**Label**

**INPUT**

⊕ Io ADJ

L (BROWN 棕)

G (Y/G 黄/绿)

⊥

N (BLUE 蓝)

**MOSO**<sup>®</sup> X7-042M072L

Constant current type LED DRIVER

LED 恒流控制装置

**OUTPUT**

(BROWN 棕) Vo +

(BLUE 蓝) Vo -

(PURPLE 紫) DIM "+"

(PINK 粉) DIM "-"

<b>INPUT (输入)</b>	100-240V ~ 50/60Hz, 0.65A Max. PF: 0.95, 55W
<b>OUTPUT (输出)</b>	40-72V --- 0.09-0.95A Uout Max.(最大电压): 90V --- Max.Power(最大功率): 42W
t <sub>c</sub> : 90°C	t <sub>a</sub> : 55°C

MADE IN CHINA For LED module only      SHENZHEN MOSO ELECTRONICS TECHNOLOGY CO., LTD  
No.1061, Songbai Road, Xili Town, Nanshan District, Shenzhen, CHINA

**Note:**

Nameplate is laser engraved.



**Version**

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A.1	First release	2023-7-13

## Specification for Approval

Product Name: 42W LED Driver

Product Model: X7-042M072L

Rev: A.1

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: 42W LED Driver

Product Model: X7-042M072L

Rev: A.1

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

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

<b>Prepared By</b>	<b>Checked By</b>	<b>Approved By</b>