

Description

The N7L-(II) series is specifically designed for industrial lighting applications, non-isolated design, operating in constant current with high power factor and a universal input voltage range of 90~305Vac. This series provides 0-10V/PWM/Resistor dimming controls. The compact housing and high efficiency allow the drivers to operate with high reliability, while featuring input surge, output over voltage, short circuit and over temperature



Product Features

- Universal input voltage: 90~305Vac;
- Non-isolated constant current design, Efficiency up to 97%;
- 3 in 1 dimmable: 0-10Vdc/PWM/Resistor;
- Off-line programmable;
- DIP switch power and photocontrol related settings are programmable;
- Output and dimming signal isolating;
- Standby Power Consumption:<0.5W;
- 12V/0.2A auxiliary power supply;
- Surge protection: DM: 6KV, CM: 6KV;
- Protection: SCP/OVP/OTP/UVP;
- Warranty: 5 years.

Application

Industrial lighting

Road lighting

Landscape lighting

Models

Model	Input Voltage (Vac)	MAX Output Power (W)	Output Voltage (Vdc)	Output Current Adjustable Range (A)	Default Current (A)	Eff. (Typ.)	PF(Typ.)	THD(Typ.)
N7L-320M300A12 (II)	90~305	150	180~300	0.75~1.5	1.28	97%	0.97	8%

Notes:

[1].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	
Rated Input Voltage	100Vac	-	277Vac	Refer to Output Power vs. Input Voltage Curve
Input Frequency AC	47Hz	50/60Hz	63Hz	

Max Input Current	-	-	3.2A	120Vac & 100% load
Max Input Power	-	-	360W	120Vac & 100% load
Leakage Current	-	-	0.70mA	IEC 60598-1; 240Vac/50Hz
Leakage Current			0.75mIU	UL 8750; 277Vac/60Hz
Inrush Current	-	-	110A	230Vac, 100% load
Standby Power Consumption	-	-	0.5W	230Vac, dimming off, no load on auxiliary power supply
Power Factor	0.95	0.97	-	230Vac, 50/60Hz, 70%-100% load
	0.90	-	-	120-277Vac, 50/60Hz, 70%-100% load
THD	-	8%	10%	230Vac, 50/60Hz, 100% load
	-	10%	20%	120-277Vac, 50/60Hz, 70%-100% load
MCB(B16)	-	5	-	230Vac; 100% load

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Voltage Range	180Vdc	-	300Vdc	
Open Circuit Voltage	-	-	350Vdc	
Output Current Adjustable Range	0.3A	-	1.5A	Adjustable output current programmer
Full Power Current Range	1.07A	-	1.5A	212-300Vdc
Default Photocontrol Turn-off Voltage	0V	1V	2V	Can be set through software
Default Photocontrol Turn-on Voltage	3V	4V	5V	
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%	120-277Vac full load condition, LED load
Auxiliary Source output voltage	10.8V	12V	13.8V	
Auxiliary Source output current	-	-	200mA	
Line Regulation	-5%	-	+5%	25°C±10°C ambient temperature, input voltage changes from 120Vac to 277Vac
Load Regulation	-5%	-	+5%	25°C±10°C ambient temperature, 230Vac input, load changes from 70% to 100%
Turn-on Delay Time	-	-	1.0s	120-277Vac, 100% load

General Specification

Parameter	Min.	Typ.	Max.	Notes
Efficiency @120Vac	92%	94%	-	1.07A, 300Vdc; 25°C ambient temperature, no load of auxiliary source
Efficiency @230Vac	94%	96%	-	1.07A, 300Vdc; 25°C ambient temperature, no load of auxiliary source
Efficiency @277Vac	95%	97%	-	1.07A, 300Vdc; 25°C ambient temperature, no load of auxiliary source
MTBF	-	200Khours	-	25 °C ± 10 ° ambient temperature, 230Vac, 80% load (MIL-HDBK-217/SR-332)
Lifetime	-	50Khours	-	230Vac & 100% load, Tc 85°C, refer to lifetime vs. case temperature curve
Operating Temperature Ta	-40°C	-	+60°C	120-200VAC Ta:45°C 200-277VAC Ta:60°C
Operating Case Temperature for Safety Tc_s	-40°C	-	+90°C	
Operating Case Temperature for Warranty Tc_w	-40°C	-	+85°C	5 years warranty shell temperature Humidity: 10%-90% RH
Storage Temperature Ta	-40°C	-	+85°C	Humidity: 5%-95% RH
Over Temperature Protection Tc	90°C	95°C	100°C	Decreases output current, returning to normal after over temperature is removed
Short Circuit Protection	-	-	15W	Constant current mode. The output shall return to normal when the fault condition is removed.
Output Over Voltage Protection	-	-	5W	When the output voltage of the product exceeds the limit range, it will enter the protection state. When the fault is removed, the product will automatically return to normal.
Dimensions (L*W*H)mm	177*55*33			
Net Weight	500±50g/PCS			
Package (L*W*H)	460*300*215mm; 18PCS/Ctn, Gross Weight: 9Kg			

Dimming

Parameter	Min.	Typ.	Max.	Notes
Absolute Maximum Voltage	-	10V	15V	On the Vdim (+) Pin
Source Current on Vdim (+)Pin	-	100uA	200uA	
Dimming Range	10% I _{o max}	-	100% I _{set}	I _{set} =0.15-1.5A
Suggest Dimming Input 0-10V	0V	-	10V	
Turn-on voltage	0.8V	-	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	1KHz	-	2KHz	
PWM in Duty Cycle	1%	-	99%	
Turn-on duty cycle	8%	-	11%	
Turn-off duty cycle	6%	-	9%	
Resistor Range	0	-	100KΩ	

Safety Specifications

Parameter	CE	Note
Dielectric Strength (Input-Ground)	1600Vac	60s, Current not exceeding 5mA input L/N short-circuit
Grounding Resistance	$\leq 0.1\Omega$	25°C $\pm$ 10°C Ambient Temperature, pass 25A Current, 60s.
Insulation Resistance	$\geq 10M\Omega$	Input-PE, 500Vdc/60s/25°C

Notes: The voltage resistance requirement of aluminum substrate is greater than 2KVac.

2. During the withstand voltage test, please short-circuit the L/N, positive and negative output lines, positive and negative dimming lines, and auxiliary power supply.

Safety Compliance

Safety Category	Safety normative standards	Certification	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	√	

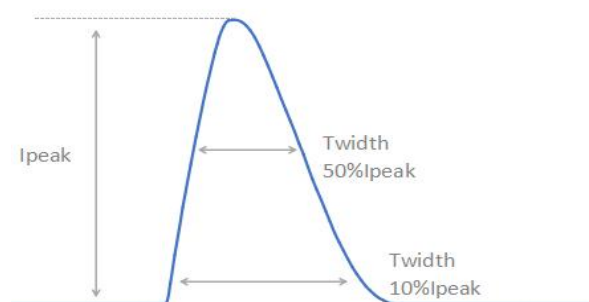
EMC Compliance

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	√	Class B
Surge Shock Immunity	ANSI/C82.77-5-2017		
	IEC/EN 61000-4-5	√	
Ringing Wave	IEC/EN 61000-4-12		
	ANSI/IEEE C62.41.2		

RoHS

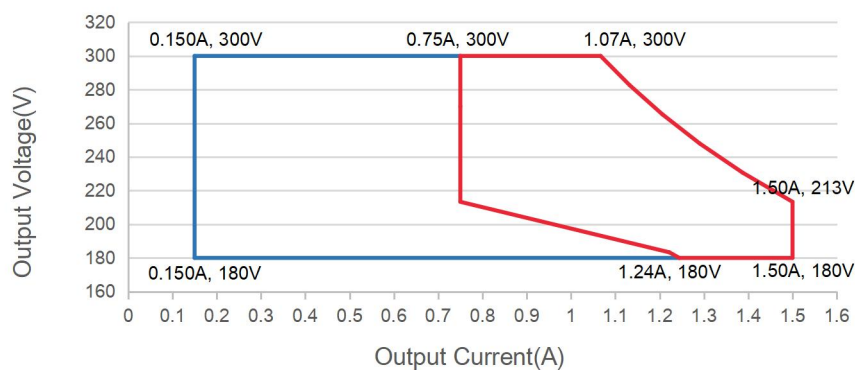
Our products comply with reference to RoHS Directive (EU) 2015/863 amending 2011/65/EU.

Inrush Current Waveform

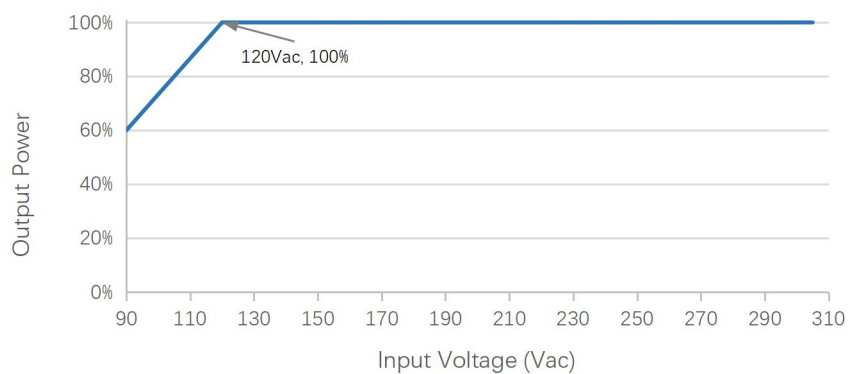


V_{in}	I_{peak}	$T(@10\% \text{ of } I_{peak})$	$T(@50\% \text{ of } I_{peak})$
120Vac	79A	400 μ s	200 μ s
230Vac	142A	372 μ s	172 μ s
277 Vac	150A	414 μ s	200 μ s

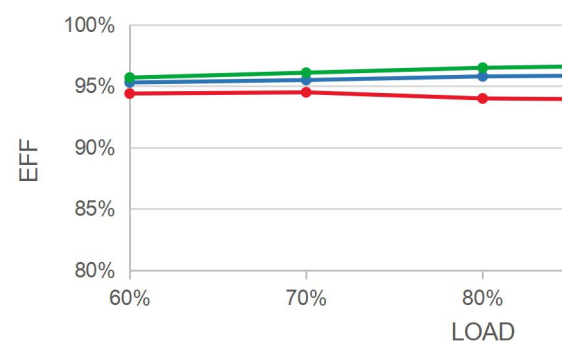
Output Voltage vs. Output Current



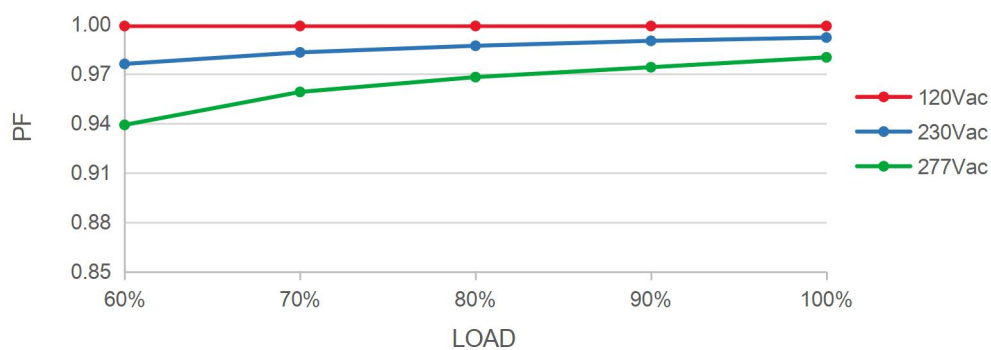
Output Power vs. Input Voltage



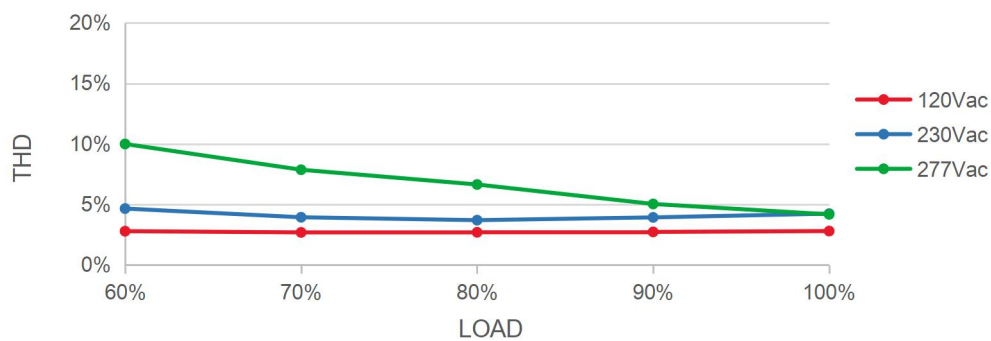
Efficiency vs. Load



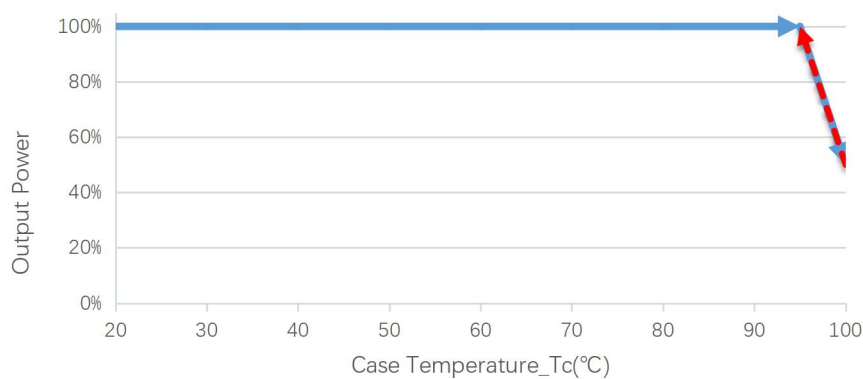
PF vs. Load



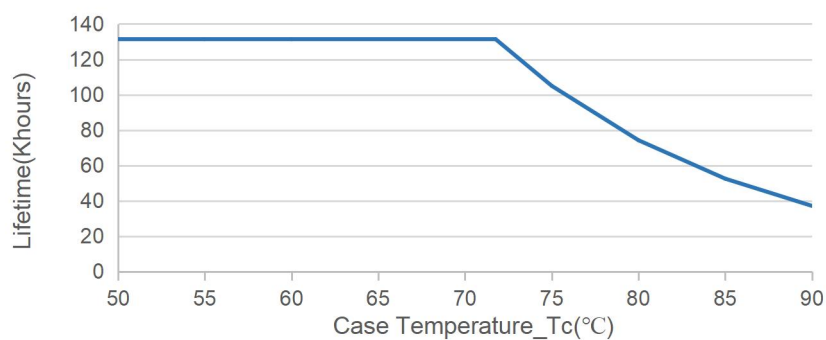
THD vs. Load



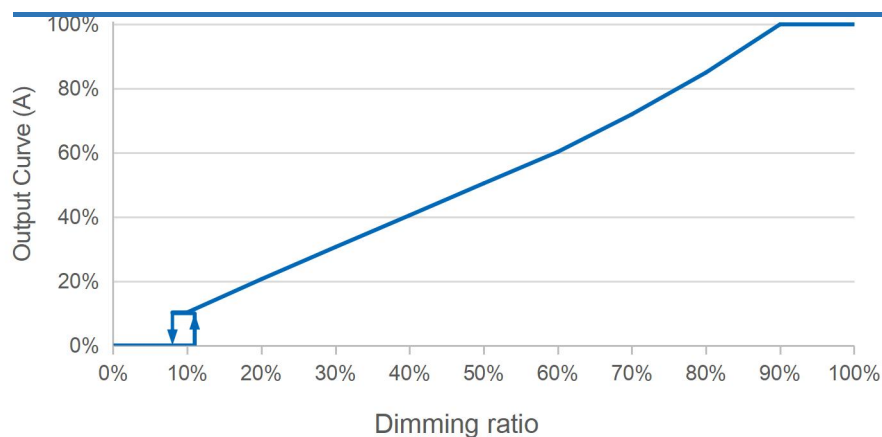
Output Power vs. Case Temperature



Lifetime vs. Case Temperature

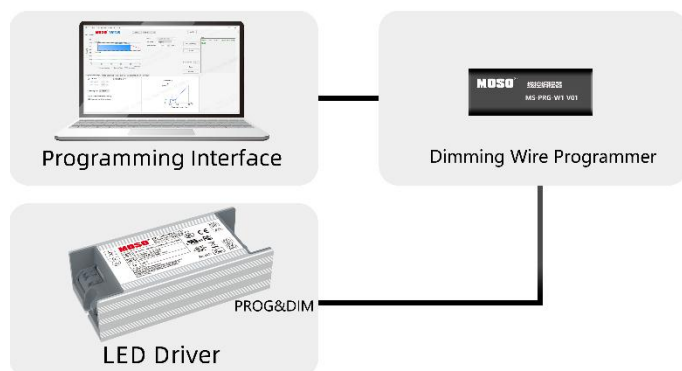


0-10V/PWM/ Resistor Dimming



Off-line Programming

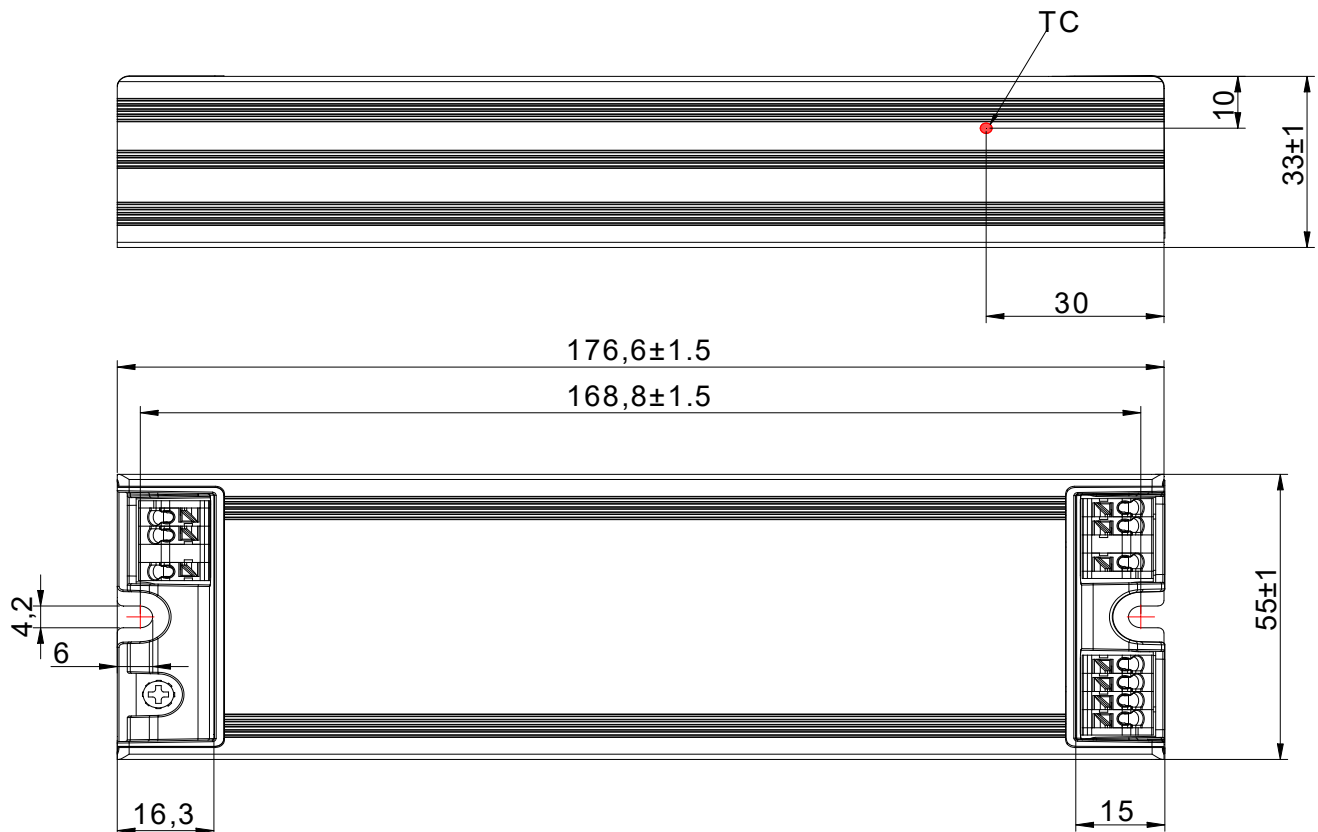
User-friendly connection of programming without necessary to power on device (suitable for N7-II, N7L-II Series).



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 DIP switch power range and photocontrol range;
4. Set output CLO;
5. Read the recorded system parameters; Record the working time working temperature,.
6. Configure the driving parameters. After setting is completed, then click the configured parameters to complete programming.

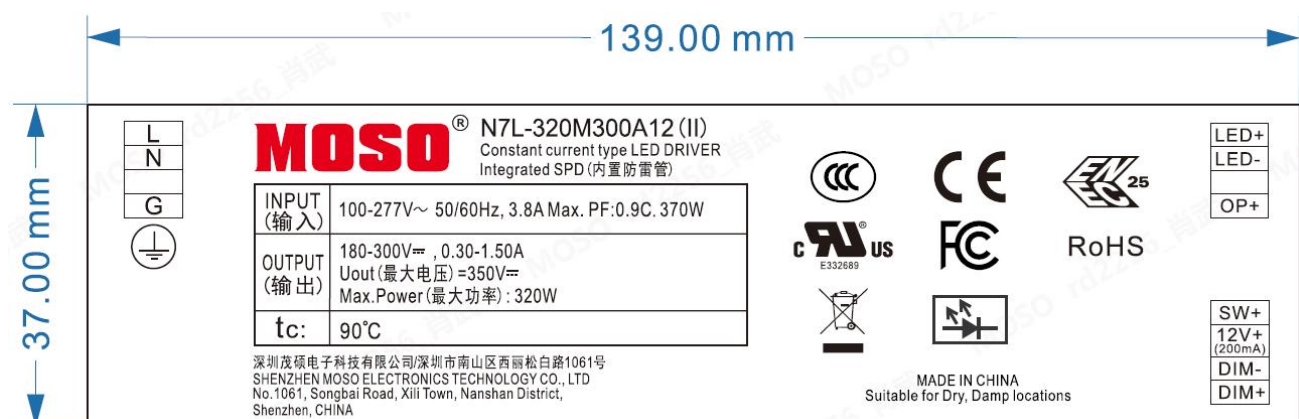
Mechanical Outline



Notes:

- [1]. In order to meet the requirements of the "derating curve" and "maximum ambient temperature of 50 °C", it is necessary to add auxiliary heat dissipation devices with a recommended heat dissipation area of 380cm² and the volume is 115cm³; It is also necessary to add thermal conductive silicone grease between the heat sink and LED driver to ensure a tight fit with the auxiliary heat sink.
- [2]. The pressure resistance of LED beads and aluminum substrate should be greater than 2KVac.

Label



ECN History

A.1	First edition	2025-11-4

Specification for Approval

Product Name: 320W Linear Non-isolated Driver

Product Model: N7L-320M300A12(II)

Rev. A.1

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Prepared By	Checked By	Approved By

Specification for Approval

Product Name: 150W Linear Non-isolated Driver

Product Model: N7L-150M300A12(II)

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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