

Specification for Approval

Product Name: 500W Non-isolate LED Driver

Product Model: N8H-500D500

Rev : A.1

Address: XiLi Songbai 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

Description

The N8H series are non-isolated constant power drivers featuring high power factor. These drivers are designed for industrial lighting applications. Featuring DALI-2/D4I (24V auxiliary source) dimming, high efficiency and a simple metal case design, the drivers have excellent thermal performance. They also feature lightning protection, overvoltage protection, short circuit protection and over temperature protection to ensure high reliability.



Product Features

- Input voltage range: 180~528Vac;
- Constant Power design, Efficiency up to 96%;
- NFC programming is adjustable; three time control options are available, constant power function can be turned off, light failure compensation, dimming shut-off point can be set, NTC over-temperature protection can be set;
- D4i / DALI-2 Dimming method;
- 24V/125mA, 3W(Transient peak power up to 10W);
- Built-in 16V DALI-2 bus power supply power supply;
- AC power measurement accuracy is up to 1%;
- Output and dimming signal isolation;
- No afterglow, even if L and N wires are connected opposite;
- Standby power consumption: <0.5W@230V;
- low inrush current: <30A;
- Dimming off without afterglow;
- External NTC supported (optional);
- Surge protection: DM 6kV, CM10kV;
- Multiple protection: Input UVP, OVP, Output SCP, OTP, constant power;
- Ingress protection rating: IP67 ;
- 5 years warranty.

Application

Stadium lighting
 Area and flood lighting
 High-bay 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.)
N8H-500D500	180-528	500	200-500	1.00~1.90	1.70	96%	0.97	10%

NOTES:

[1]. All specifications are measured at 25°C ambient temperature, input voltage 400Vac, and the typical value tested at full load, if no specific note.

Input Specifications

Parameter	Min	Typ.	Max	Notes
Input Voltage Range	180Vac	-	528Vac	Input below 200Vac, derated output
Input Voltage Typ.	200Vac	-	480Vac	
Input Frequency AC	47Hz	50/60Hz	63Hz	
Max Input Current	-	-	2.85A	200Vac&Full Load.
Max Input Power	-	-	550W	200Vac&Full Load.
Leakage current	-	-	0.70mA	IEC 60598-1; 400Vac/50Hz
Inrush Current	-	-	30A	400Vac&Full Load
Standby Power Consumption	-	-	0.5W	230Vac, Dimming turn-off, And the auxiliary source is not loaded and the Dali bus is turned off
Power Factor(PF)	0.95	0.98	-	230Vac, 50Hz, 60%-100% Load.
Power Factor(PF)	0.90	-	-	200-480Vac, 50/60Hz, 60%-100% Load.
Total Harmonic Distortion(THD)	-	10%	20%	200-480Vac, 50/60Hz, 60%-100% Load.
MCB(B16)	-	5	-	230Vac.

Output Specifications

Parameter	Min	Typ.	Max	Notes
Output Voltage Range	200Vdc	-	500Vdc	
Open Circuit Voltage	-	-	600Vdc	
Output Current range	1%I _o		100% I _o	I _{set} =1.00-1.90A
Current Accuracy	-5%	-	+5%	
Total Output Current Ripple (pk-pk)	-	-	10%	20MHz BW, full load& LED load, the ripple would be tiny different under different LED load.
Startup Overshoot Current	-	-	10%	200~480Vac & 100% load
Line Regulation	-3%	-	+3%	200-480Vac
Load Regulation	-3%	-	+3%	200-480Vac
Turn-on Delay Time	-	-	1.5s	220~480Vac & 100% Load, load is LED.
Auxiliary Output Voltage	21.6V	24V	26.4V	
Auxiliary Output Current	0	-	125mA	The maximum peak current of 250mA has a maximum duration of 2.2ms within a 6.0ms cycle, and the average current does not exceed 125mA. The maximum peak current of 425mA has a maximum duration of 1.3ms within a 5.2ms cycle, and the average current does not exceed 125mA.

General Specifications

Parameter	Min	Typ.	Max	Notes
Efficiency@220Vac	93%	94%	-	400Vdc, 80~100% load , 25°C ambient temperature
Efficiency@347Vac	94%	96%	-	400Vdc, 80~100% load , 25°C ambient temperature
Efficiency@400Vac	94%	96%	-	400Vdc, 80~100% load , 25°C ambient temperature
Efficiency@480Vac	95%	96%	-	400Vdc, 80~100% load , 25°C ambient temperature
Mean Time Between Failure	-	200Khours	-	25°C±10°C ambient temperature, 230Vac,80% load (MIL-HDBK-217F/SR-332).
Lifetime	-	50Khours	-	Tc=75°C, 230Vac&100% load, refer lifetime vs. Case temperature curve.
Ambient Temperature Ta	-40°C	-	+45°C	200~277Vac &100% load.
Ambient Temperature Ta	-40°C	-	+50°C	277~480Vac &100% load.
Operating Tc for Safety Tc_s	-40°C	-	+85°C	
Operating Tc for Warranty Tc_w	-40°C	-	+75°C	5 years warranty case temperature Humidity: 10% to 80% RH No condensation.
Storage Temperature Ta	-40°C	-	+85°C	Humidity: 5% to 95% RH No condensation.
Altitude	-60m	-	4000m	
Over Temperature Protection Tc	90°C	95°C	100°C	Tc; 220Vac&100% load.
Short Circuit Protection	-	-	-	Self-recovery .
Dimensions (L*W*H)	270*89*41.5mm			
Net Weight	1860±50g/PCS			
Package	415*343*130mm; 6PCS/CTN, Gross Weight: 12Kg			

DALI-2 Specifications

Parameter	Min	Typ	Max	Notes
Auxiliary 24V Output Voltage	21.6V	24V	26.4V	
Auxiliary 24V Output Current	0	-	125mA	Return terminal is "DA-".
24V Output Transient Peak Current @6W	-	-	250mA	The maximum peak current of 250mA has a maximum duration of 2.2ms within a 6.0ms cycle, and the average current does not exceed 125mA.
24V Output Transient Peak Current @10W	-	-	425mA	The maximum peak current of 425mA has a maximum duration of 1.3ms within a 5.2ms cycle, and the average current does not exceed 125mA.
Built-in DALI-2 Bus Supply Voltage	12Vdc	16Vdc	20Vdc	Voltage depends on the load
Built-in DALI-2 Bus Supply Current	50mA	-	60mA	Return terminal is "DA-".
High Voltage Level	9.5V	16V	22.5V	
Lower Voltage Level	-6.5V	0V	6.5V	Return terminal is "DA-".
Dimming Output Current Range	1% I _{max}	-	100% I _o	I _{ot} =1.90A.
Sink Current	-	-	2.0mA	
Timer dimming	-	-	-	Traditional, Self-adaption.
Output lumen compensation	-	-	-	Constant lumen output function.

Safety Specification

Parameter	CCC	CE/ENEC/SAA	UL	Notes
Dielectric Strength (Input-Ground)	2000Vac	2000Vac	2000Vac	60s, Current not exceeding 5mA.
Dielectric Strength (Output-Ground)	2200Vac	2200Vac	2200Vac	60s, Current not exceeding 5mA.
Dielectric Strength (Input-Dim)	4000Vac	4000Vac	2000Vac	60s, Current not exceeding 5mA.
Grounding Resistance	0.1Ω(Max)			25°C±10°C Ambient Temperature, pass 25A Current, 60s. UL Standard 30A, 2 minutes.
Insulation Resistance	10MΩ(Min)			Input-PE, Output-PE, 500Vdc/60s/25°C/70%RH.

Safety Compliance

Safety Category	Standards	Approved	Notes
CCC	GB/T 19510.213 GB/T 19510.1		
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, AS/NZS 61347.1		

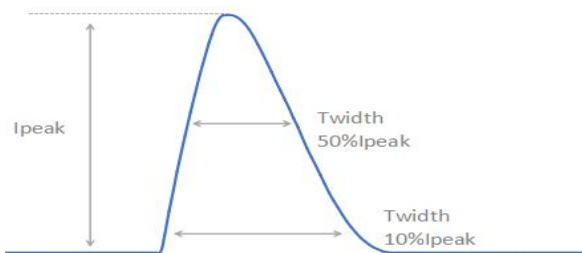
EMC Compliance

EMC Category	Standards	Approved	Notes
CCC	GB/T 17743-2021 GB 17625.1-2022		
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		
	ANSI/C82.77-5-2017	√	Meet 6KV / 6KV (2Ω)
	IEC/EN 61000-4-5	√	
	IEC/EN 61000-4-12	√	
	ANSI/IEEE C62.41.2	√	Meet 6KV / 6KV (2Ω)

RoHS

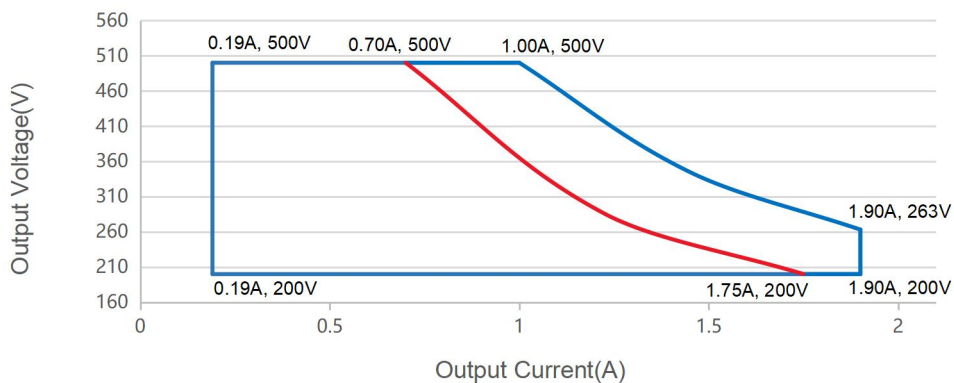
Our products comply with RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Inrush Current



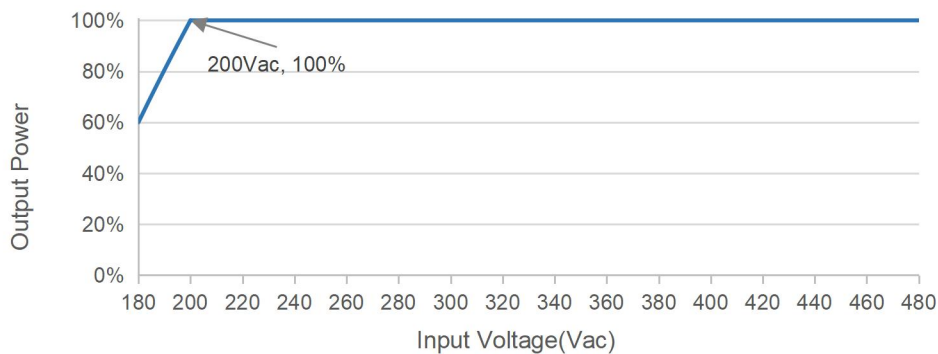
V_{in}	I_{peak}	$T(@10\% \text{ of } I_{peak})$	$T(@50\% \text{ of } I_{peak})$
220Vac	2.92A	5.6ms	4.2ms
277Vac	3.40A	7.2ms	6.0ms
347Vac	4.20A	7.0ms	5.6ms
400Vac	4.72A	7.8ms	6.2ms
480Vac	5.60A	8.9ms	7.6ms

Output Voltage vs. Output Current

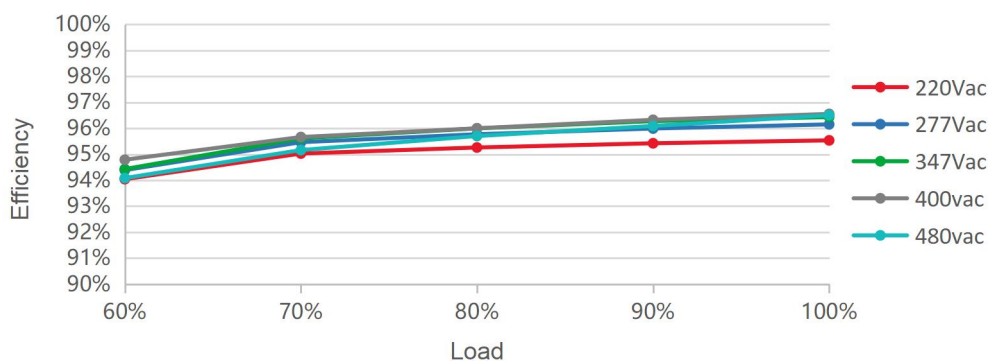


Red curve: good performance area

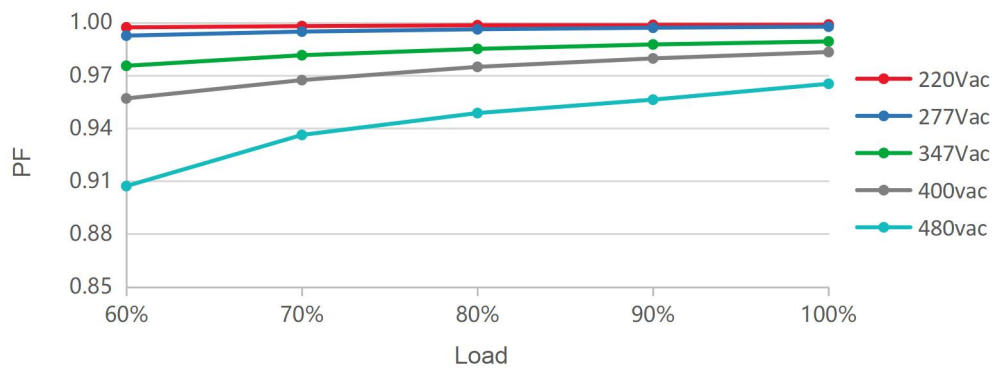
Output Power vs. Input Voltage



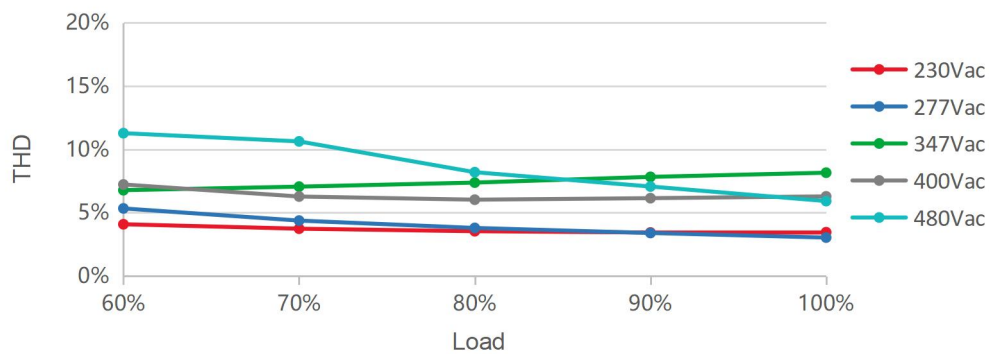
Efficiency vs. Load



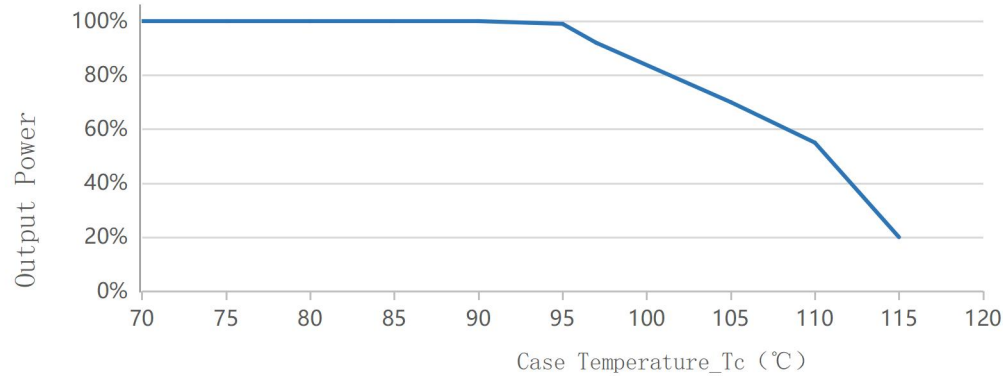
PF vs. Load



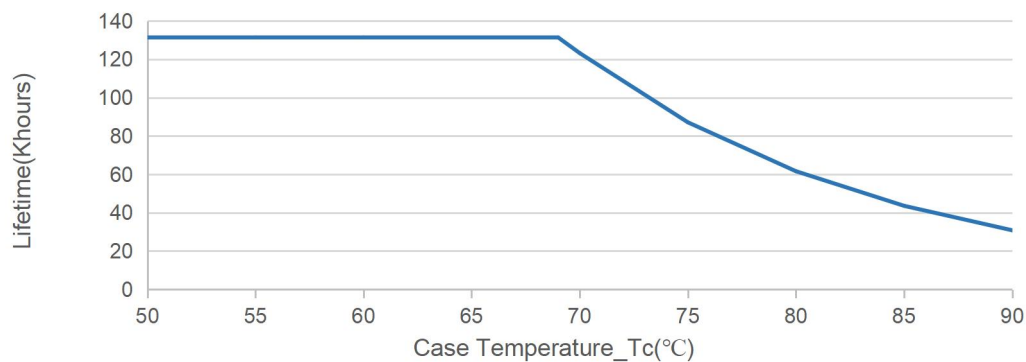
THD vs. Load

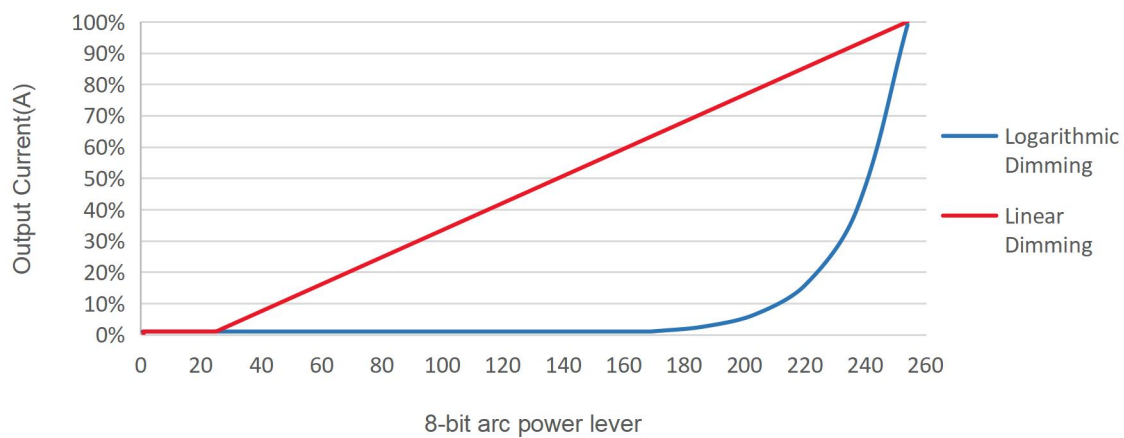


Output Power vs. Case Temperature

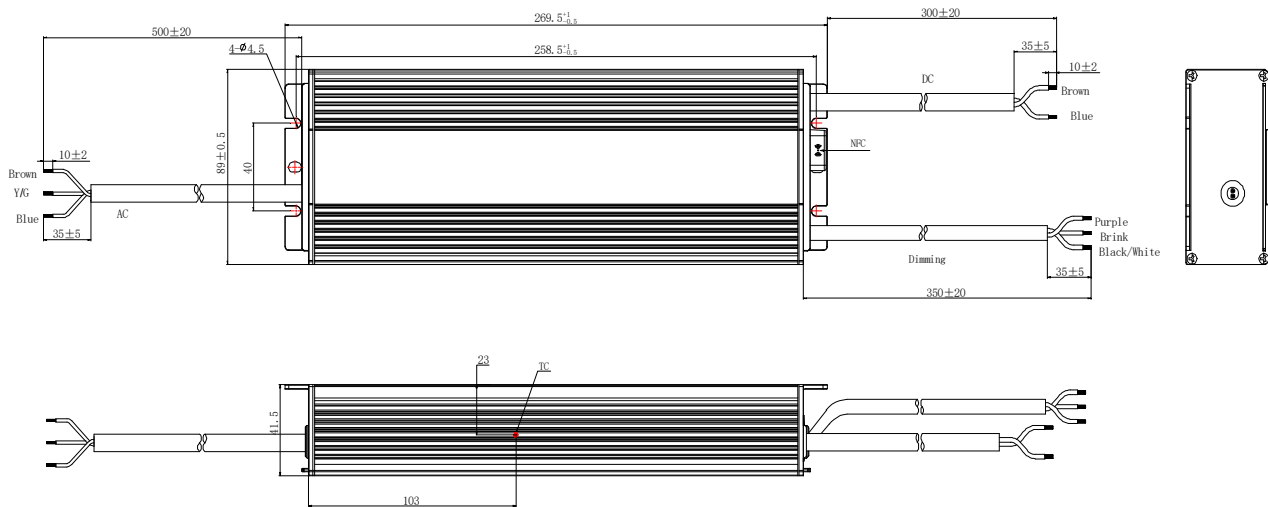


Lifetime vs. Case Temperature



DALI-2 Dimming Curve

Mechanical Outline



Connections

Wire	Recommended wire Specification	Note
Input	SOW 17AWG*3C $\varnothing 9.5 \pm 0.3$ L=500±20mm	CCC/CE/UL
Output	SOW 17AWG*2C $\varnothing 9.2 \pm 0.3$ L=300±20mm	CCC/CE/UL
Dimming&12V	UL 21996 22AWG*3C $\varnothing 5.0 \pm 0.2$ L=350±20mm	UL

Lable



Version

A.1	First release	2025-10-20

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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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