

Specification for Approval

Product Name: 500W Non-isolate LED Driver

Product Model: N8H-500M500A12

Rev : A.1

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Prepared By	Checked By	Approved By

Description

The N8H series is a non-isolated constant power drive power supply with a high power factor. This series of products is specially designed for industrial lighting. It features multiple dimming functions such as 0-10V/PWM/resistor dimming (+12V auxiliary source). With high efficiency and a simple metal casing design, the product features excellent heat dissipation performance. It also has lightning protection, overvoltage protection, short-circuit protection and over-temperature protection, ensuring high reliability of the product.



Product Features

- Input voltage range: 180~528Vac;
- Constant Power design, Efficiency up to 96%;
- NFC programmable adjustable Three time control options are available. The constant power function can be turned off. Light attenuation compensation, dimming off point can be set, and NTC over-temperature protection can be set.
- Control scheme: 0-10V/PWM/ resistance/time control dimming, light attenuation compensation, offline programming;
- Auxiliary source output: 12V,300mA
- Output and dimming signal isolation;
- Dimming off without afterglow;
- Double live wire disconnection (there will be no afterglow even if the neutral wire and the live wire are reversed);
- 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-500M500A12	180-528	500	200-500	1.00~1.90	1.70	96%	0.97	10%

NOTES:

[1]. All performance parameters are typical values measured under an ambient temperature of 25 degrees, an input of 400Vac, and a 100% load, unless otherwise specified.

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 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	10%		100%	Programmed adjustment, three-in-one dimming from 10% to 100%
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%	
Load Regulation	-3%	-	+3%	
Turn-on Delay Time	-	-	1.5s	220~480Vac & 100% Load, load is LED.
Auxiliary Output Voltage	10.8V	12V	13.8V	
Auxiliary Output Current			300mA	Within a 6.0ms cycle, the longest duration of the maximum peak current of 500mA is 2.2ms. Within a 5.2ms cycle, the longest duration of the maximum peak current of 850mA is 1.3ms.

General Specifications

Parameter	Min	Typ.	Max	Notes
Efficiency@220Vac	93%	94%	-	400Vdc, 80~100% load , 25°C ambient temperature
Efficiency@347Vac	94%	95%	-	400Vdc, 80~100% load , 25°C ambient temperature
Efficiency@400Vac	94%	95.5%	-	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, 220Vac&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 *130 mm; 6PCS /ctn, Gross Weight: 12Kg			

DIMMING (0-10V/PWM)

Parameter	Min	Typ.	Max	Notes
The maximum voltage on the 0-10V line	-	10V	15V	
The current on the 0-10V line	-	100uA	200uA	
Dimming range	10%Iset	-	100% Iset	Iset=1.00-1.90A
It is recommended to have a dimming input of 0~10V	0V	-	10V	
Turn-on voltage	0.7V	0.8V	1.0V	
Turn-off voltage	0.4V	0.5V	0.7V	
PWM high level	9.7V	-	10.3V	
PWM low level	0V	-	0.3V	
PWM frequency range	1KHz	-	2KHz	
PWM duty cycle	1%	-	99%	
Activate the duty cycle	7%	8%	10%	
Turn off the duty cycle	4%	5%	7%	

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		

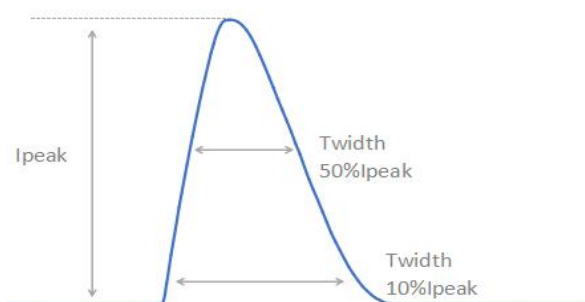
EMC Compliance

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		
Surge impulse immunity	ANSI/C82.77-5-2017	√	Meet 6KV / 6KV (2Ω)
	IEC/EN 61000-4-5	√	
Ringing wave	IEC/EN 61000-4-12	√	
	ANSI/IEEE C62.41.2	√	Meet 6KV / 6KV (2Ω)

RoHS

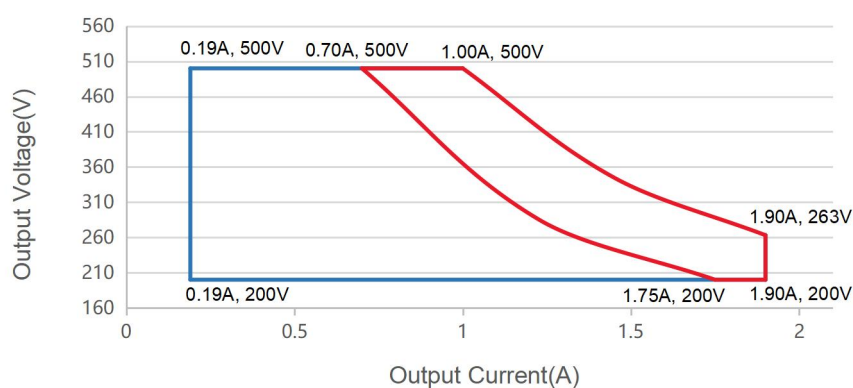
Our products comply with RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Inrush Current



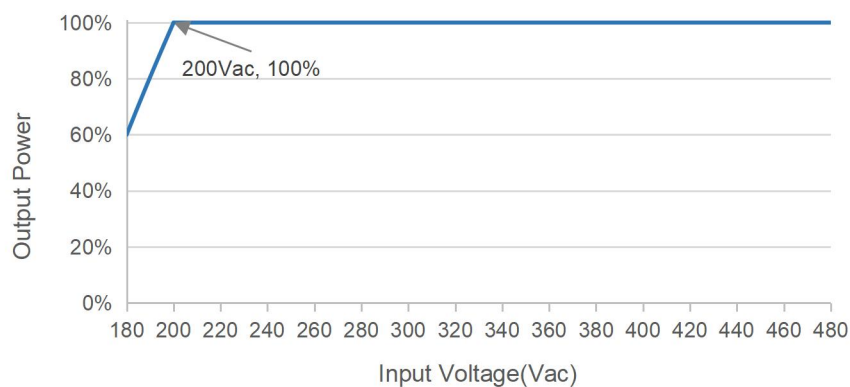
V_{in}	I_{peak}	$T(@10\% \text{ of } I_{peak})$	$T(@50\% \text{ of } I_{peak})$
220Vac	2.92A	5.60ms	4.20ms
277Vac	3.40A	7.20ms	6.00ms
347Vac	4.20A	7.00ms	5.60ms
400Vac	4.72A	7.80ms	6.20ms
480Vac	5.60A	8.90ms	7.60ms

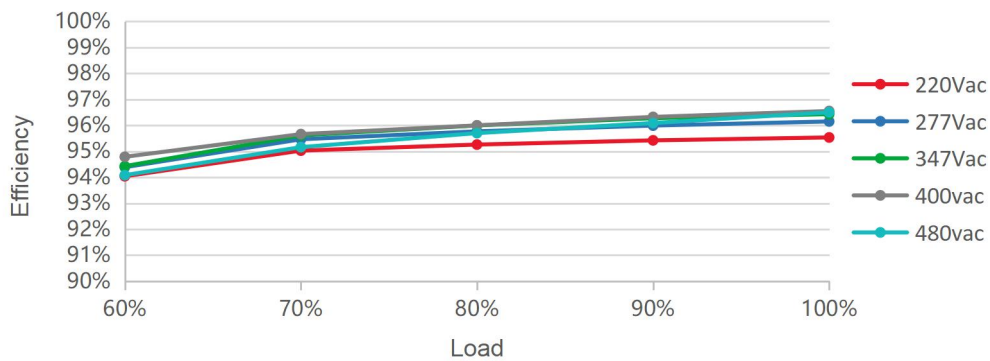
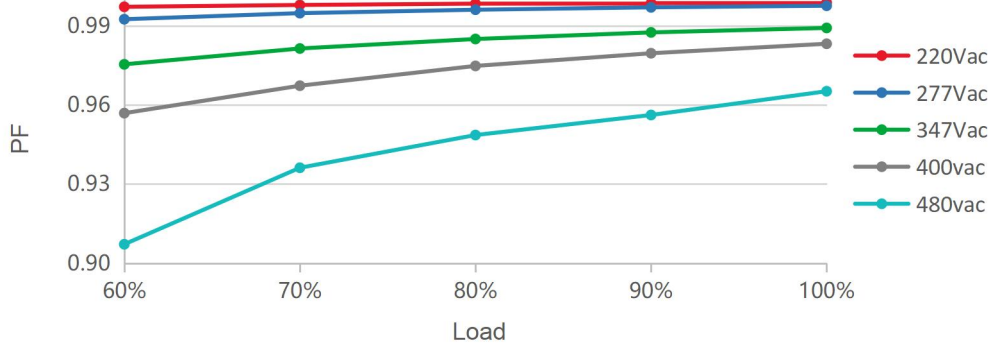
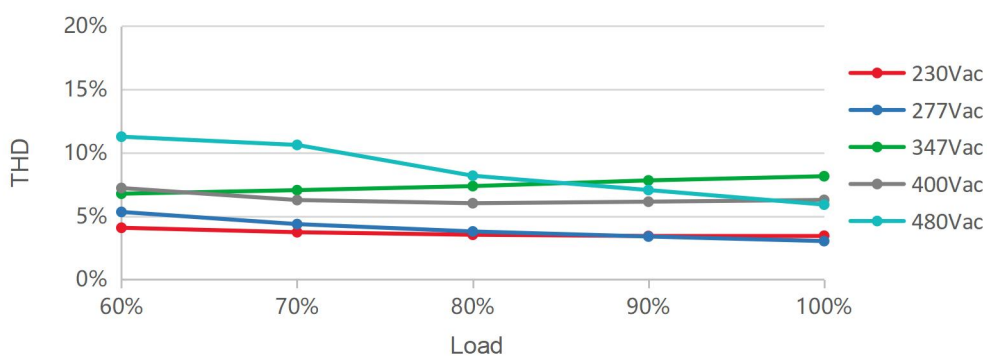
Output Voltage vs. Output Current



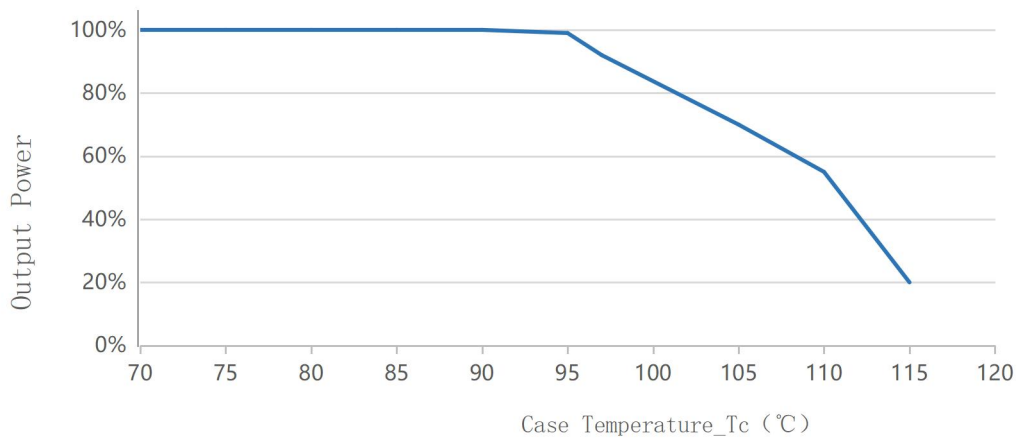
Red curve: good performance area

Output Power vs. Input Voltage

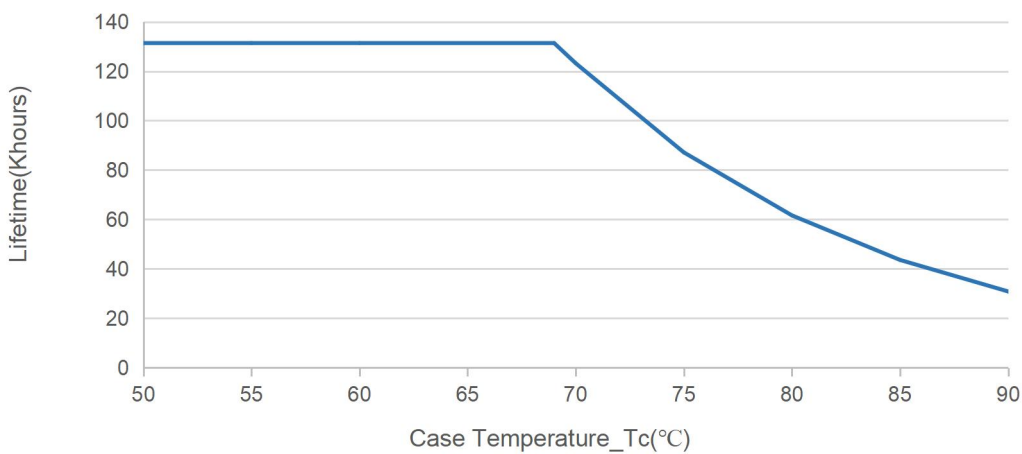


Efficiency vs. Load**PF vs. Load****THD vs. Load**

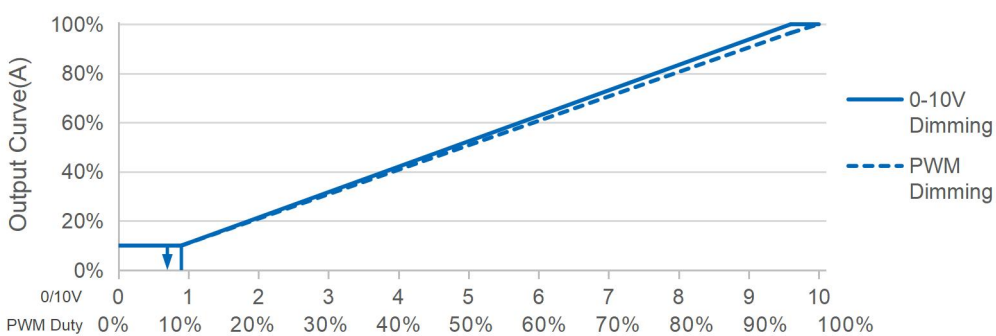
Output Power vs. Case Temperature



Lifetime vs. Case Temperature



0-10V/PWM resistance dimming curve (depending on actual situation)



Off-line Programming

User-friendly connection of programming without necessary to power on device(suitable for X6, X6S, X6I,X6E Series).

Programming mode 1



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 output CLO;
4. Read the recorded system parameters; Record the working time working temperature, and software version information of the LED driver.
5. Configure the driving parameters. After setting is completed, then click the configured parameters to complete programming.
6. Download it to the offline programmer.

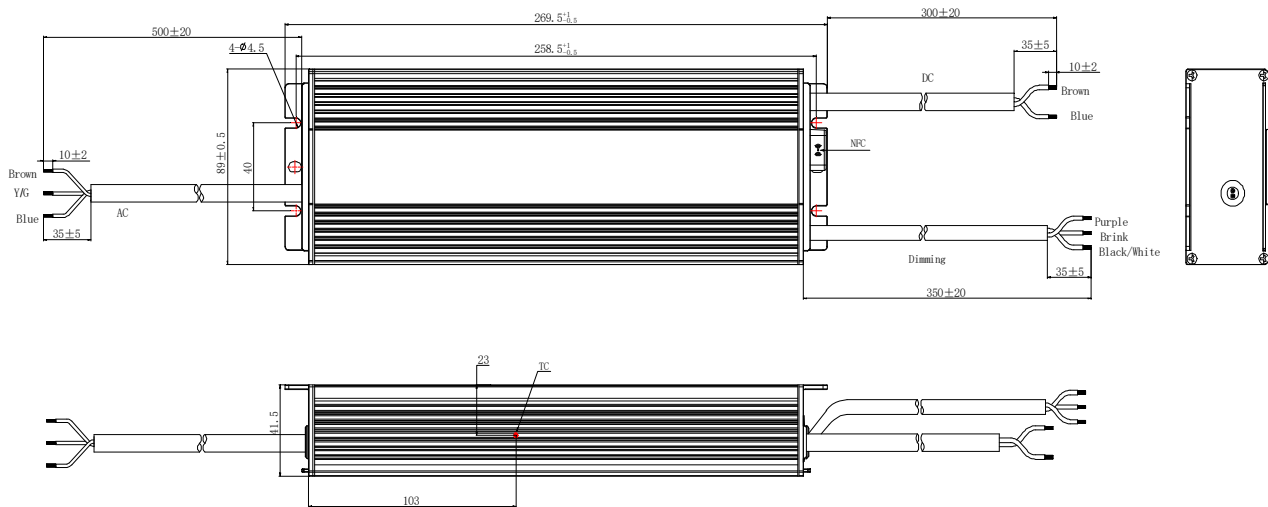
Programming mode 2



Instructions of one touch programmer:

1. Open the software interface and download the program to the offline programmer.
2. Connect the dimming wire with the programmer, press the programmer button, the programmer will give you a subtle reminder "(Beep)" to tell you the installation completed.

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&24V	UL 21996 22AWG*3C $\varnothing 5.0 \pm 0.2$ L=350±20mm	UL

Label



Version

A.1	First release	2025-10-20

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Product Model: N8H-500M500A12

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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