SOSEN

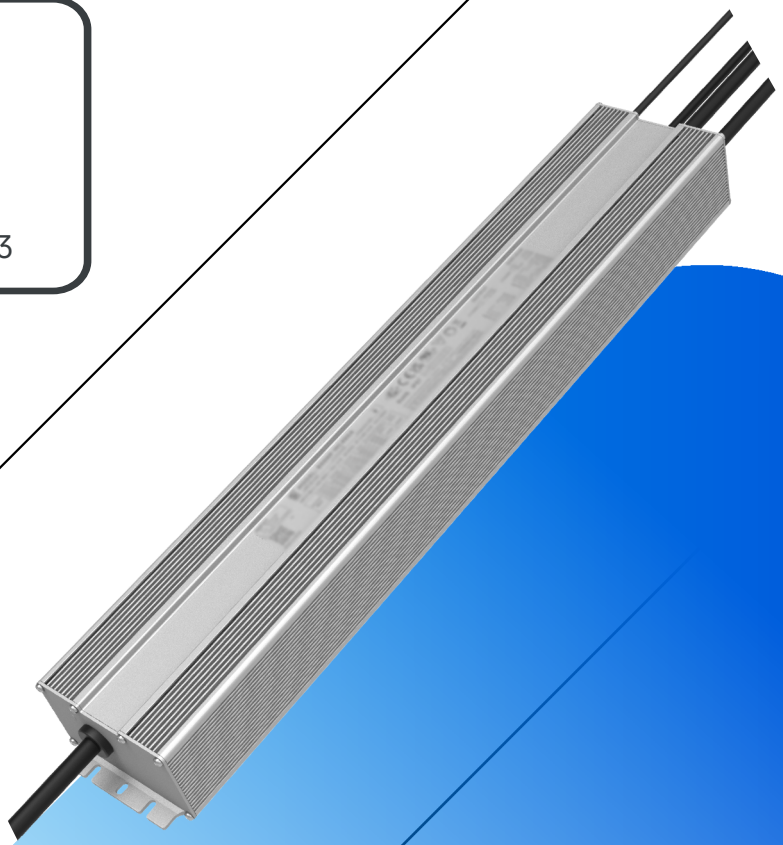
SPECIFICATIONS 800NP-MC400* Thinklink Series DRIVERS

Model: 800NP-MC400*

Power: 800W

Rev.: V01

Release date: 2026-09-03



800NP-MC400* LED DRIVER

Features

- Efficiency up to 96.5%
- Surge protection: CM: 6kV,DM: 6kV
- Dual live-wire cutoff, no afterglow
- Independent four-channel dimming
- Independent four-channel output
- Primary channel (CH1) non-isolated; secondary channels (CH2/3/4) isolated
- Channel power transfer(Optional)
- 0-10V/PWM/UART/RS485 Dimming
- Optional aux: 12V/0.3A
- Constant Lumen, Life Warning, Soft-start, Timer dimming
- Standby Power<0.5W
- IP66
- Communication with PC
- Protections: UVP/OTP/OPP
- Warranty: 5 years

25 CE UK CA c UL us E360758 Type HL 110 RoHS

Description

The NP-MC series is a professional-grade multi-spectrum LED driver power supply, tailor-made for horticultural/plant lighting applications. Breaking through the limitations of traditional single-channel drivers, this product features four independent high-precision constant-current outputs. Combined with powerful multi-protocol control and flexible spectrum configurability, it delivers the core driving force for optimal plant growth.

Applications:

Horticultural lights

Model List

Model	AC Input Range	Total (Max.)	O/P Channel	Vout Range	Recommended Volltage	Iout	Pout (Max.)	Total for CH2/3/4 (Max.)	THD (Typ.)	PF (Typ.)	Eff. (Typ.)	Tc (Max.)
800NP-MC400*	180-528Vac	800W	CH1	120V-400V	266V-400V	0.35-3.0A	800W	450W	10%	0.97	96.0%	90°C
			CH2	42V-170V	85V-170V	0.7-3.53A	300W					
			CH3	42V-170V	85V-170V	0.35-1.76A	150W					
			CH4	42V-170V	85V-170V	0.35-1.76A	150W					

Note:

1. Default test conditions: 400Vac, full load, Ta=25°C.
2. Performance is guaranteed within the full-power output-voltage range. For operation below this range, verify performance with the intended LED module.

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"*" Means Additional Function

"*"	RS485	UART	Dimming off 0-10V/PWM	AUX 12V	CH1 Output with PE Wire	Panel-Mount Connector for Dimming	Remark
A	✓		✓	✓			
A-G	✓		✓	✓	✓		
BH			✓	✓			
BH-G			✓	✓	✓		
BH-M			✓	✓		✓	
BH-MG			✓	✓	✓	✓	
RH	✓			✓			
RH-G	✓			✓	✓		
RH-M	✓			✓		✓	
RH-MG	✓			✓	✓	✓	
UH		✓		✓			
UH-G		✓		✓	✓		
UH-M		✓		✓		✓	
UH-MG		✓		✓	✓	✓	

Default parameters

suffix	Def. total output power limit	Default setting power				Default current				Default Dimming Mode	Default power transfer mode	Remark
		CH1	Ch2	CH3	CH4	CH1	CH2	CH3	CH4			
A/A-G	800W	450W	150W	100W	100W	1.13A	0.88A	0.59A	0.59A	0-10V/PWM	No power transfer	Supports RS485/ 0-10V /PWM Dimming
BH/BH-G /BH-M/ BH-MG	800W	450W	150W	100W	100W	1.13A	0.88A	0.59A	0.59A	0-10V/PWM	No power transfer	Supports only 0-10V /PWM Dimming
RH/RH-G /RH-M/ RH-MG	800W	450W	150W	100W	100W	1.13A	0.88A	0.59A	0.59A	RS485 Dimming	No power transfer	Supports only RS485 Dimming
UH/UH-G /UH-M/ UH-MG	800W	450W	150W	100W	100W	1.13A	0.88A	0.59A	0.59A	UART Dimming	No power transfer	Supports only UART Dimming

Note: The factory-default settings are shown in the table above. For models with the A or BH suffix, the dimming interface is configured in current-source mode by default. If any other configuration is required, please specify it when placing the order.

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Input Characteristics

Parameter	Min.	Typ.	Max.	Remark
Rated AC Input Range	200Vac		480Vac	40°C@200-220Vac 45°C@220-480Vac
AC Input Range	180Vac		528Vac	Reference derating curve
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			4.7A	200Vac,Full load
Max Input Power			940W	200Vac,Full load
Max Inrush Current(220Vac)			10A	Cold start
Max Inrush Current(347Vac)			20A	Cold start
Max Inrush Current(400Vac)			20A	Cold start
Max Inrush Current(480Vac)			25A	Cold start
Standby Power			0.5W	230Vac/50Hz , CH1-CH4 Dim-to-off
Power Factor	0.95	0.97		220Vac/50Hz, Full load
	0.90			200-480Vac, 70%-100% load
THD		10%	20%	220Vac/50Hz, Full load
			20%	200-480Vac, 70%-100% load

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Output Characteristics

Parameter	Channel	Min.	Typ.	Max.	Remark
O/P Voltage Range	CH1	120V		400V	
	CH2	42V		170V	
	CH3	42V		170V	
	CH4	42V		170V	
Rated O/P Voltage	CH1	266V		400V	Po = Vo * Io = 800W
	CH2	85V		170V	Po = Vo * Io = 300W
	CH3	85V		170V	Po = Vo * Io = 150W
	CH4	85V		170V	Po = Vo * Io = 150W
Rated O/P Current	CH1	2.0A		3.0A	O/P 3.0A for 266V, O/P 2.0A for 400V
	CH2	1.76A		3.53A	O/P 1.76A for 170V, O/P 3.53A for 85V
	CH3	0.88A		1.76A	O/P 0.88A for 170V, O/P 1.76A for 85V
	CH4	0.88A		1.76A	O/P 0.88A for 170V, O/P 1.76A for 85V
Adj.O/P Current (AOC)Range	CH1	0.35A		3.0A	Adjustable by program
	CH2	0.7A		3.53A	
	CH3	0.35A		1.76A	
	CH4	0.35A		1.76A	
No Load Voltage	CH1			450V	
	CH2			240V	
	CH3			240V	
	CH4			240V	

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Output Characteristics

Parameter	Min.	Typ.	Max.	Remark
O/P Current Tolerance	-5%		+5%	
O/P Current Ripple (PK-AV)		5%	15%	Full Load on Selected Channel
Start-up Current Overshoot			10%	Full load
Start-up Time			1.0s	200-480V,Full load
Line Regulation	-3%		+3%	Full load
Load Regulation	-3%		+3%	
OTP	90°C	95°C	100°C	Over-temperature current derating, auto-recovery after fault removal

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Power Transfer Group

Group	Channel	Adjustable Output Current Range(A)	Full-Power Current Range(A)	Test Current (A)	Test Voltage (Vdc)	Max. Output Power (W)		Efficiency		Remark
								400Vac (Min.)	400Vac (TYP.)	
Group 1	CH1	0.35-1.31	0.875-1.31	0.875	400	350		93.5%	94.5%	CH2/CH3/CH4 Total power: 450W
	CH2	0.7-3.53	1.76-3.53	0.88	170	300	450			
	CH3	0.35-1.76	0.88-1.76	0.88	170	150				
	CH4	0.35-1.76	0.88-1.76	0.88	170	150				
Group 2	CH1	0.35-1.88	1.25-1.88	1.25	400	500		94.0%	95.0%	CH2 is off, CH3/CH4 are on
	CH2	-	-	-	-	0				
	CH3	0.35-1.76	0.88-1.76	0.88	170	150				
	CH4	0.35-1.76	0.88-1.76	0.88	170	150				
Group 3	CH1	0.35-1.88	1.25-1.88	1.25	400	500		94.0%	95.0%	CH2 is on, CH3/CH4 are off
	CH2	0.7-3.53	1.76-3.53	1.76	170	300				
	CH3 /CH4	-	-	-	-	0				
Group 4	CH1	0.35-2.44	1.62-2.44	1.62	400	650		94.5%	95.5%	CH2 is off, One of CH3. CH4 is off
	CH2	-	-	-	-	0				
	CH3 /CH4	-	-	-	-	0				
		0.35-1.76	0.88-1.76	0.88	170	150				
Group 5	CH1	0.35-3.0	2.0-3.0	2.0	400	800		95.0%	96.0%	CH2/CH3/CH4 are all off
	CH2 /CH3 /CH4	-	-	-	-	0				

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Power Transfer Modes

(1)**No Power Transfer:**

The four channels operate independently, each delivering its configured output power without affecting the others.

(2)**Auto Power Transfer (Dim-to-off):**

When any of the secondary channels (CH2, CH3, or CH4) is completely turned off by Dim-to-Off, the power configured for that channel is automatically transferred to the Primary channel (CH1).

(3)**Dynamic Auto Power Transfer:**

When the secondary channels (CH2, CH3, and CH4) are dimmed to lower output levels, the resulting available power is immediately transferred to the Primary channel (CH1).

(4)**Manual Adjustment Transfer:**

When the output power of any secondary channels (CH2, CH3, or CH4) is reduced through dimming, the released power capacity becomes available to CH1. However, CH1's output power does not increase automatically. To increase CH1's output power, the user must raise the CH1 dimming-control signal. If the dimming-control signal of the secondary channels is subsequently increased, the power previously transferred to CH1 will automatically be returned to that secondary channel.

Note: When selecting a power transfer mode, select the appropriate "Select Power Transfer Channels" based on your actual requirements. For details, please refer to the SosenProgrammer Software User Manual for the NP-MC Series.

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Other Characteristics

Parameter		Min.	Typ.	Max.	Remark
AUX Power	O/P Voltage	10.8V	12V	13.8V	
	O/P Current			300mA	
0-10V Dimming	Dim Vmax	0V		12V	
	Dim Range	10% loset		100% loset	
	Rec.Dim Range	0V		10V	DIM1+、DIM2+、DIM3+、DIM4+ With DIM- prohibits reverse connection
PWM Dimming (Optional)	PWM High	9.8V		10.2V	
	PWM Low	0V		0.3V	
	Frequency	1kHz		2kHz	DIM1+、DIM2+、DIM3+、DIM4+ With DIM- prohibits reverse connection
	PWM Duty	0%		100%	
0-10V Dim to Off	Dim-off	6.5%	8%	9%	By DC voltage, PWM dimming ratio
	Dim-on	8%	9%	10%	By DC voltage, PWM dimming ratio
RS485 communication		10%		100%	Please refer to the SOSEN RS485 User Guide
UART		10%		100%	Please refer to the SOSEN UART User Guide
Timing Curve(Optional)		By programming			Set by program
Constant Lumen(Optional)		By programming			Set by program
Life Warning(Optional)		By programming			Set by program
Life Time(Tc≤75°C)		50,000 hours			80%Load,400Vac
MTBF		210,500 hours			347Vac,Full load, Ta=25°C(MIL-HDBK-217F)
IP Grade		IP66			
Tc		90°C			
Warranty		5 years			Tc: 75°C
Net Weight		4200g			
Dimension		499mm*89.5mm*49mm			L x W x H

Note: All the parameters above are tested Ta 25°C and LED load, unless specified.

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Environmental Requirements

Parameter	Min.	Typ.	Max.	Remark
Operating Temperature(Tcase)	-20°C	25°C	+90°C	
Storage Temperature	-40°C	25°C	+90°C	
Operation Humidity	10%RH		90%RH	
Storage Humidity	5%RH		95%RH	
Altitude	-65m		4000m	

Safety and EMI/EMS Standards

Certification	Standard	Status	Remark
UL	UL8750	✓	
CUL	CAN/CSA C22.2 No.250.13	✓	
ENEC	EN 61347-1 EN 61347-2-13 EN IEC 62384	✓	
RCM	AS/NZS61347.2.13		
CCC	GB/T 19510.1 GB/T 19510.213		
CE	EN 61347-1 EN 61347-2-13 EN 62493	✓	

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Safety and EMI/EMS Standards

EMI/EMS	Standard	Status	Remark
Conducted Emissions	EN IEC 55015	✓	
	FCC Part 15 Subpart B;ANSI C63.4		ClassA
Radiated Emissions	EN IEC 55015	✓	
	FCC Part 15 Subpart B;ANSI C63.4		ClassA
Harmonic Current Emissions	EN IEC 61000-3-2	✓	ClassC
Surge	IEC/EN61000-4-5	✓	DM: 6kV,CM: 6kV,Criterion B
	ANSI/C82.77-5	✓	DM: 6kV,CM: 6kV,Criterion B
Ring Wave	IEC/EN 61000-4-12	✓	DM: 6kV,CM: 6kV,Criterion B
	ANSI/C82.77-5	✓	DM: 6kV,CM: 6kV,Criterion B

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Safety Test Items

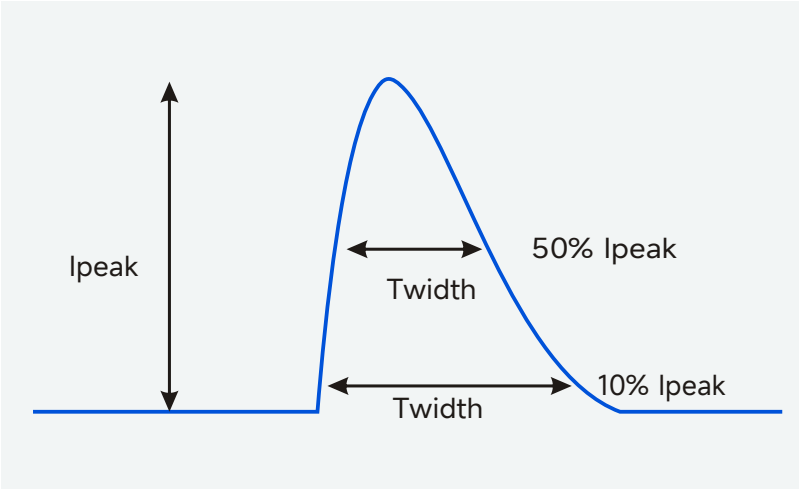
Safety Test Items	Technical Indicators		Remark
Insulation Requirements	UL Insulation Requirements	ENEC Insulation Requirements	
Input-Case	2U+1000Vac	2U+1000Vac	Basic insulation
Input-Dim	2U+1000Vac	4U+2000Vac	UL Basic insulation ENEC Reinforce insulation
Dim-Case	500Vac	500Vac	Basic insulation
Insulation Resistance	≥10MΩ		Input-Dim, Test voltage: 500Vdc
Ground Resistance	≤0.1Ω		25A/1min
Leakage Current	≤0.75mA		480Vac

NOTE:

1. SOSEN warrants the LED Driver itself complies with EMC standard. However, LED Driver's EMC should be re-checked when integrated into lighting systems due to unexpected interference as component.
2. Please short (ACL and ACN), (V+ and V-), (Dim+ and Dim - and Vaux+) when Hi-pot test (Turn off ARC) .

Performance Curves

Input Inrush Current



Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
220Vac	10A	4.50ms	2.00ms
347Vac	20A	5.50ms	2.00ms
400Vac	20A	5.50ms	2.00ms
480Vac	25A	5.50ms	2.00ms

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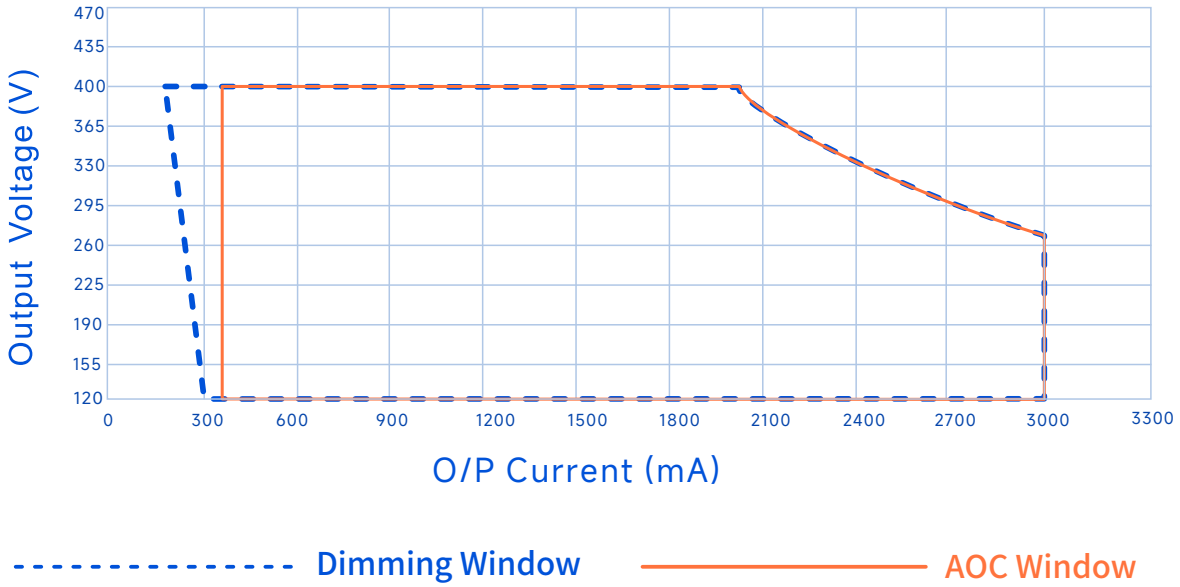
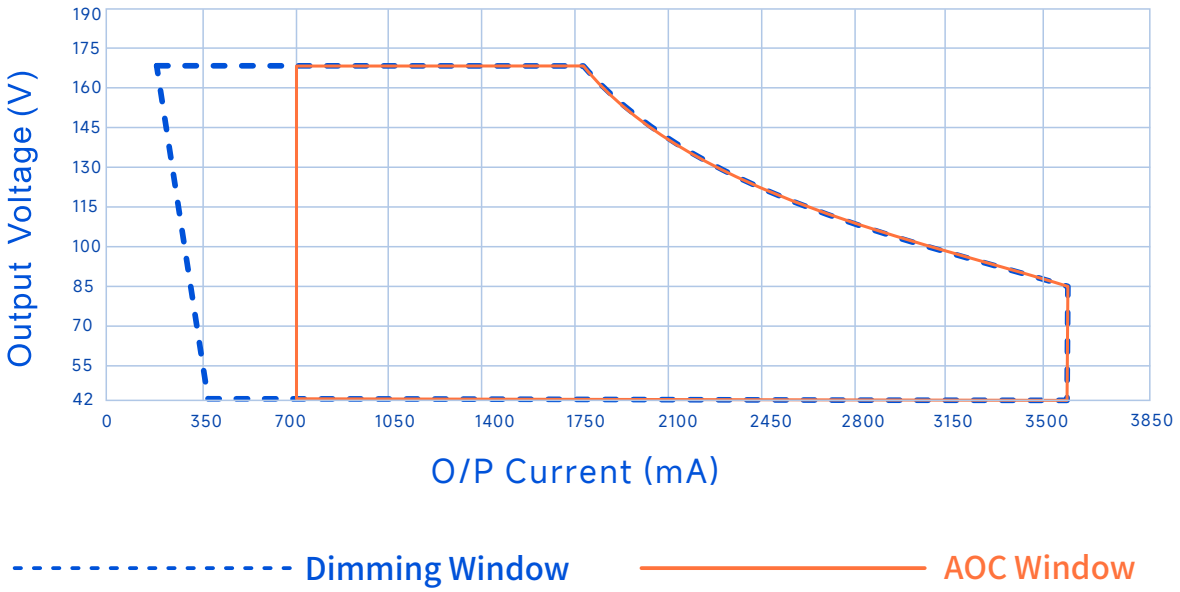
Performance Curves

Output Voltage Vs. Output Current(Dim/AOC Window) CH1



Output Voltage Vs. Output Current(Dim/AOC Window) CH2



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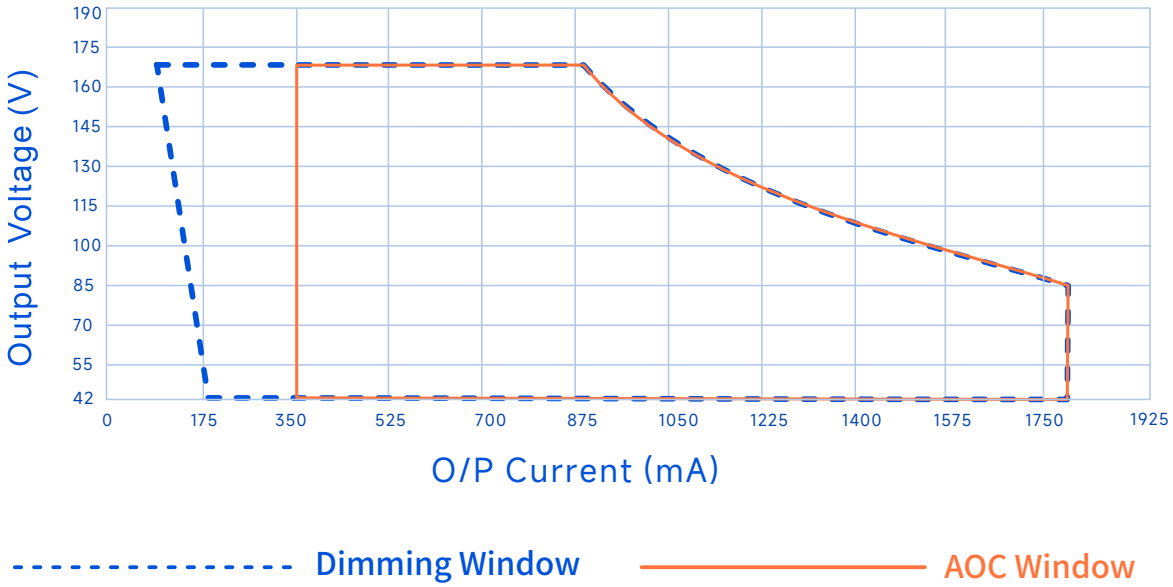
Performance Curves

Output Voltage Vs. Output Current(Dim/AOC Window) CH3/CH4



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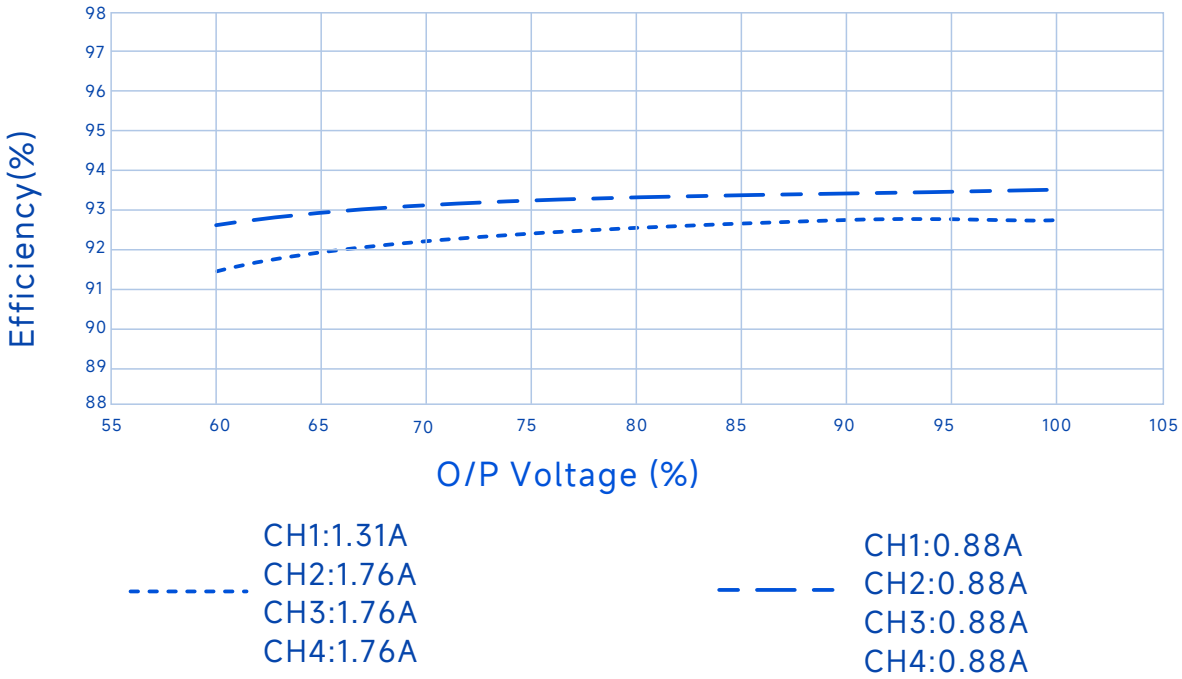
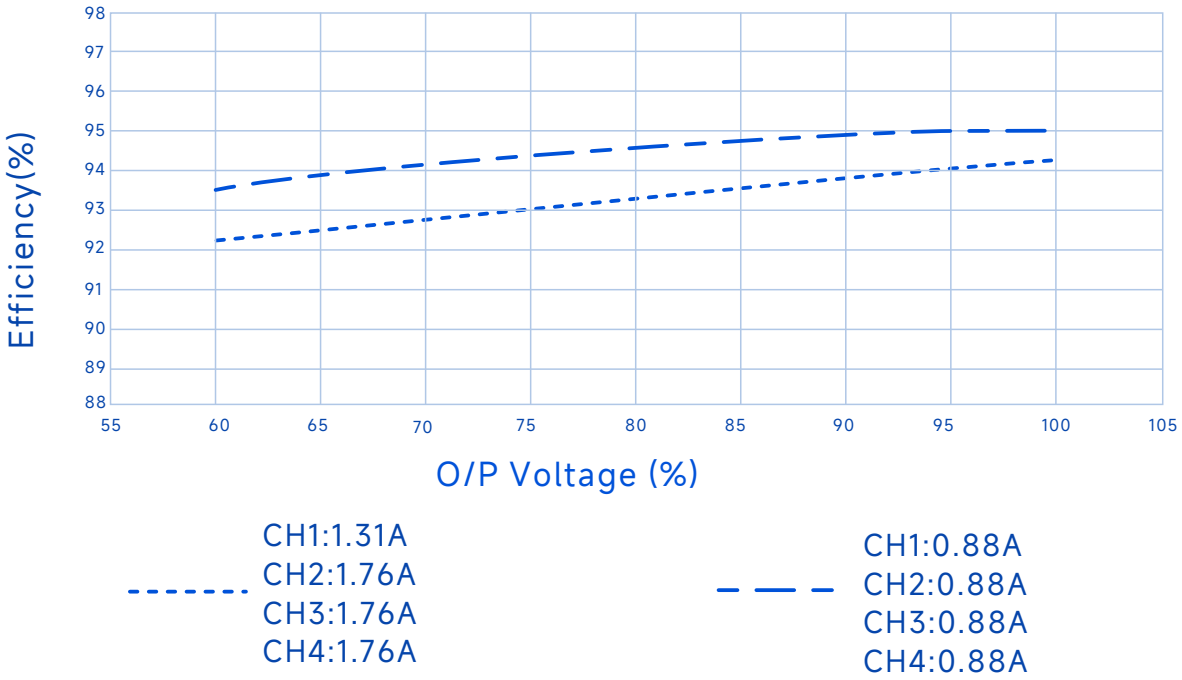
Performance Curves

Efficiency Vs. O/P Voltage(Vin=230Vac)



Efficiency Vs. O/P Voltage(Vin=400Vac)



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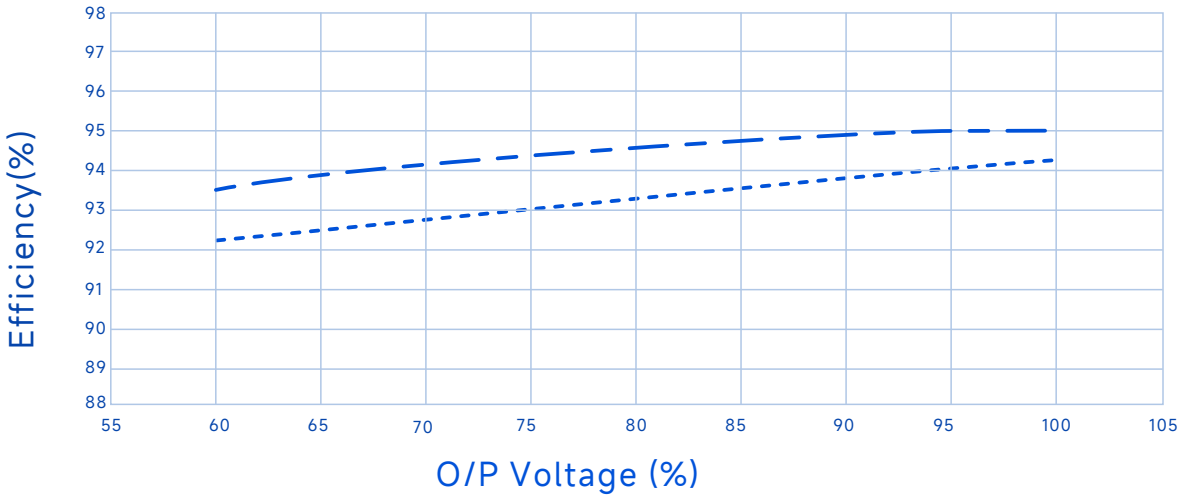
Performance Curves

Efficiency Vs. O/P Voltage(Vin=480Vac)



CH1:1.31A
CH2:1.76A
CH3:1.76A
CH4:1.76A

CH1:0.88A
CH2:0.88A
CH3:0.88A
CH4:0.88A

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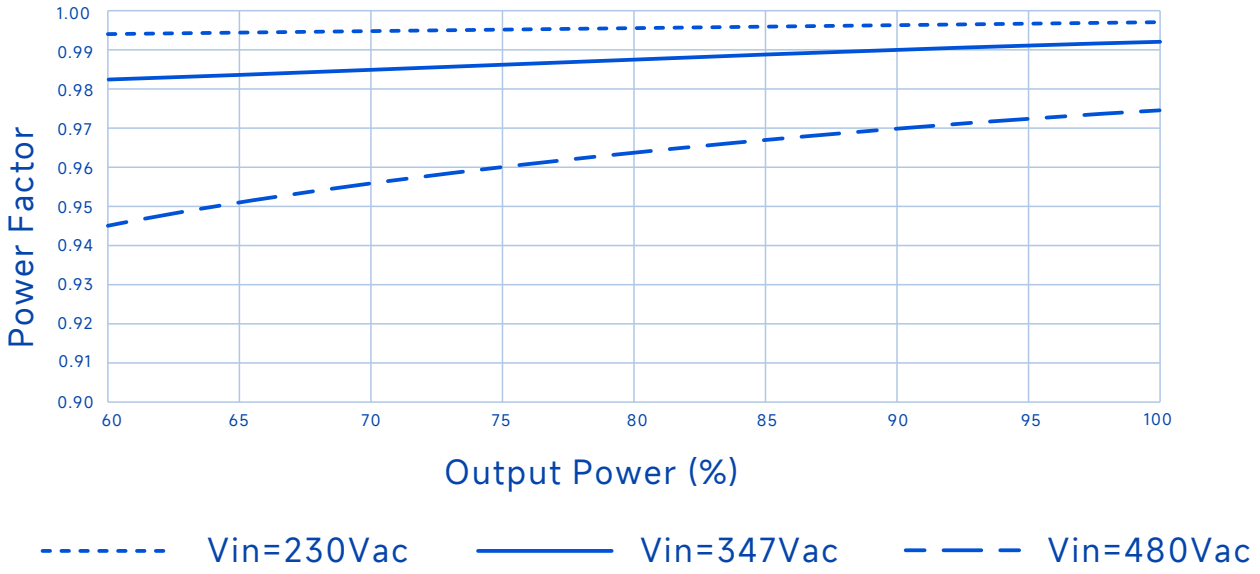
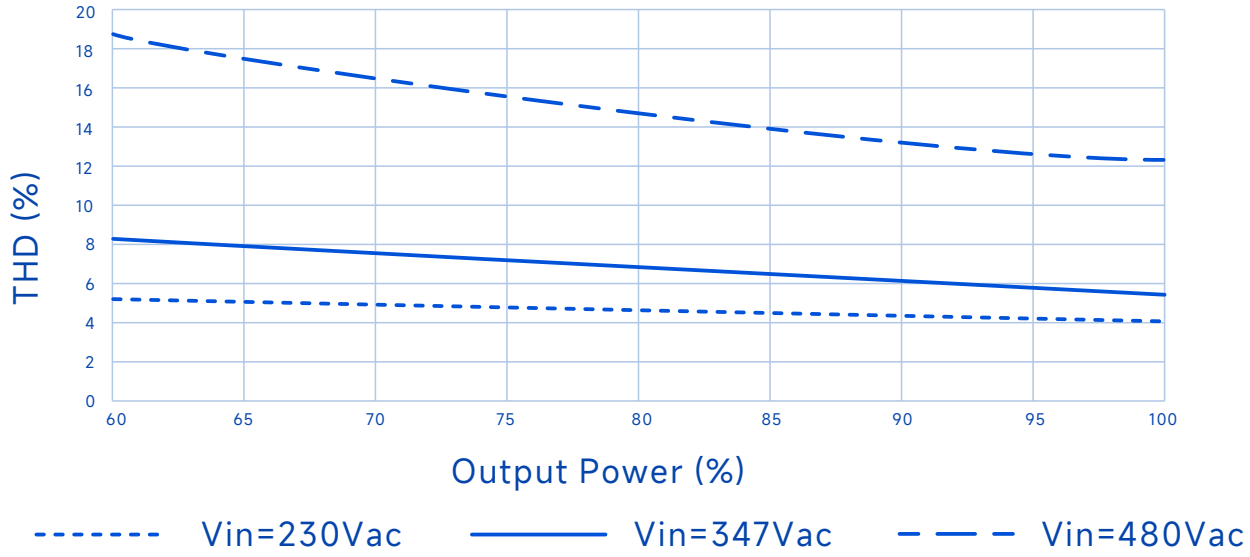
Performance Curves

Power Factor Vs. O/P Power



THD Vs. O/P Power



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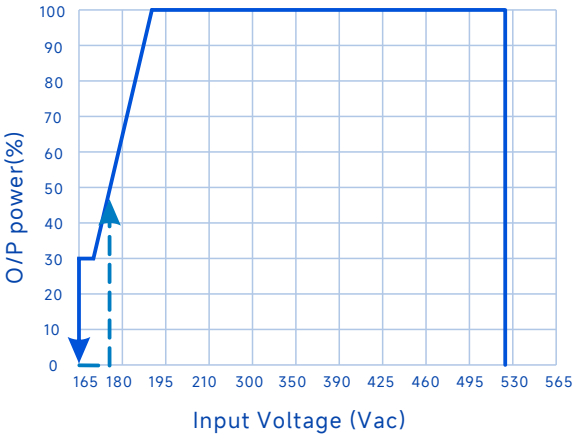
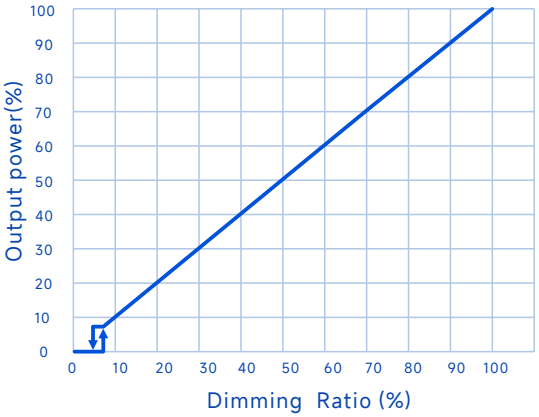
Performance Curves

Output Power Vs. Input Voltage

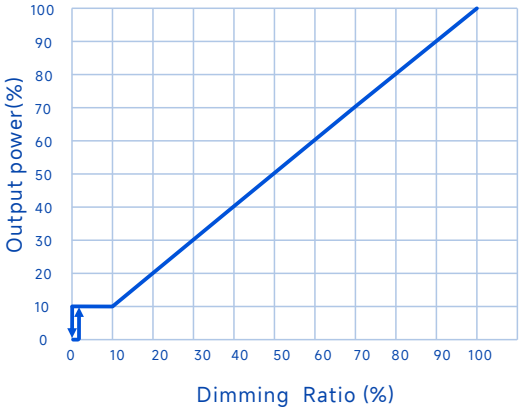


Output Power Vs. Dimming



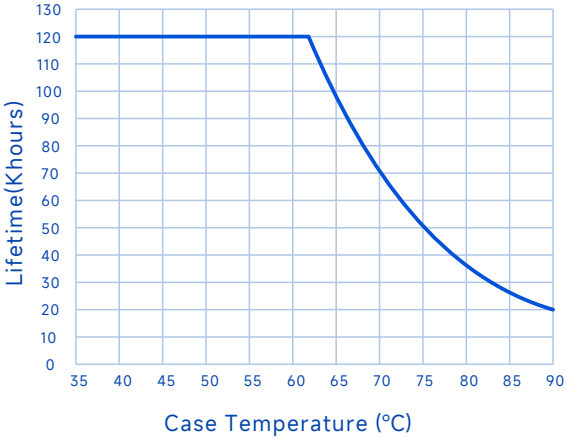
0-10V,PWM

Output Power Vs. Dimming



RS485/UART Dimming

Lifetime Vs. Case Temperature



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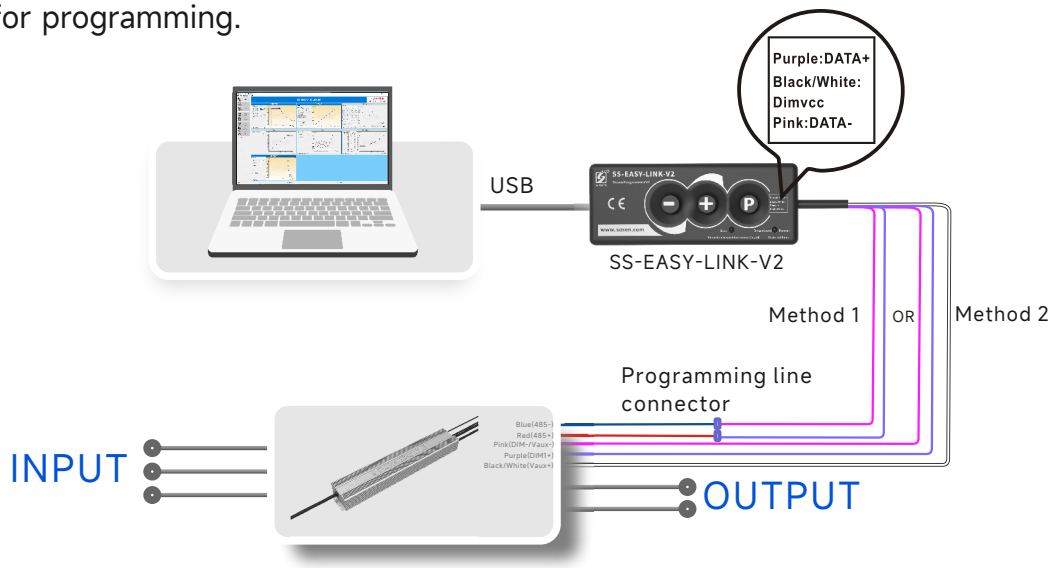
Programming connection diagram

1. There are two methods for programming, as shown in the diagram below, which can achieve all programming functions:
   Method 1: Programming via 485 terminals
   (The LED driver must remain connected to AC power)
   (1) Connect the programmer's DATA+ (purple wire) to the driver's 485+ terminal.
   (2) Connect the programmer's DATA- (pink wire) to the driver's 485- terminal.
   (3) Leave the programmer's DimVcc (black/white wire) NC
   Method 2: Programming via DIM or UART terminals
   (1) Connect the programmer's DATA+ (purple wire) to the driver's DIM1+ terminal
   (2) Connect the programmer's DATA- (pink wire) to the driver's DIM-/Vaux- terminal.
   (3) Connect the programmer's DimVcc (black/white wire) to the driver's Vaux+ terminal. (If the LED driver is AC powered on, leave DimVcc NC.)
2. For a driver that is powered on and in use, all programming functions can be performed without needing to disconnect the power.
3. It can operate independently of a PC to achieve offline programming,When using Method 2 for programming.



Constant Lumen Output

Constant Lumen Output are design to maintain fixture's stable output lumen by increasing driver's output current within driver's life span to counteract LED lumen degradation.

ELA End-of-Life Alert

By presetting a LED driver life time, such as 50kh, after the luminaire has accumulated 50kh of light-up time, every time the luminaire is powered on, it will blink 4-6 times to remind the userto replace the LED driver.

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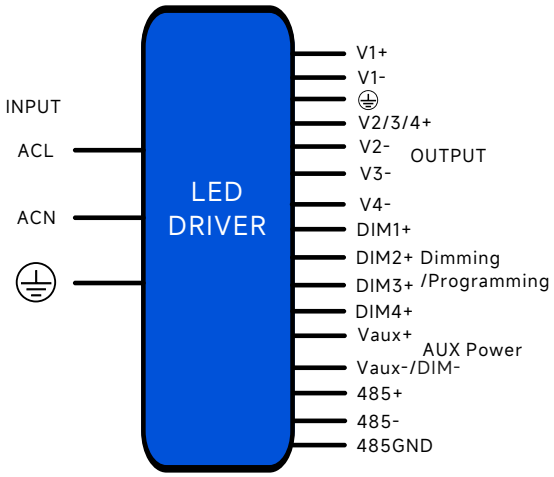
Mechanical Characteristic



AC Input Cable (Exposed Length 450±10mm):

Global model: SOOW, 3*17AWG, O.D: 9.8mm, 600V, Brown: L, Blue: N
Yellow/Green: ⏚

DC Output Cable (Exposed Length 250±10mm) models without -G

Global model: SOOW, 2*17AWG, O.D: 9.3mm, 600V, Brown: V1+, Blue: V1-
Global model: SJOW, 4*17AWG, O.D: 8.6mm, 300V, Brown: V2/3/4+, Blue: V2-, Red: V3-, Black: V4-

DC Output Cable (Exposed Length 250±10mm) models with -G

Global model: SOOW, 3*17AWG, O.D: 9.8mm, 600V, Brown: V1+, Blue: V1-
Yellow/Green: ⏚
Global model: SJOW, 4*17AWG, O.D: 8.6mm, 300V, Brown: V2/3/4+
Blue: V2-, Red: V3-, Black: V4-

DIM/AUX Power/Programming Cable (Exposed Length 220±10mm):

800NP-MC400A/A-G model

UL model:STYLE 21996, 6*22AWG, O.D: 6.3mm, 300V, Purple: DIM1+, Blue/White: DIM2+, Brown: DIM3+, Orange: DIM4+, Black/White: Vaux+, Pink: DIM-/Vaux-

UL model:STYLE 21996, 3*22AWG, O.D: 4.9mm, 300V, Red: 485+, Blue: 485-, Black: 485GND

800NP-MC400BH/BH-G model

UL model: STYLE 21996, 6*22AWG, O.D: 6.3mm, 300V, Purple: DIM1+, Blue/White: DIM2+, Brown: DIM3+, Orange: DIM4+, Black/White: Vaux+, Pink: DIM-/Vaux-

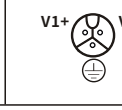
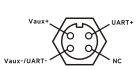
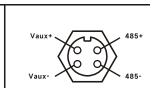
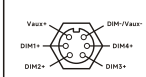
800NP-MC400RH/RH-G model

UL model: STYLE 21996, 4*22AWG, O.D: 5.6mm, 300V, Purple: 485+, Pink: 485-, Black/White: Vaux+, Blue/White: Vaux-

800NP-MC400UH/UH-G model

UL model: STYLE 21996, 3*22AWG, O.D: 4.9mm, 300V, Purple: UART+, Pink: UART-/Vaux-, Black/White: Vaux+

Waterproof connectors can be added to the cable (to be noted in the order)

AC Input	DC Output			DIM		
All models	models with -G	models without -G	All models	UH/UH-G UH-M/UH-MG	RH/RH-G RH-M/RH-MG	BH/BH-G BH-M/BH-MG
LLT-M19-25003 M1041	LLT-M19-20003F1031	LLT-M19-20002F1031	LLT-M19-20004 F1031	LLT-M12-10004F2841		/
JNICON M19-3 PIN	JNICON M19-3 PIN	JNICON M19-2 PIN	JNICON M19-4 PIN	JNICON M12-4 PIN		JNICON M16-6 PIN
						

NOTE

-M models are equipped with a panel-mount connector for dimming.

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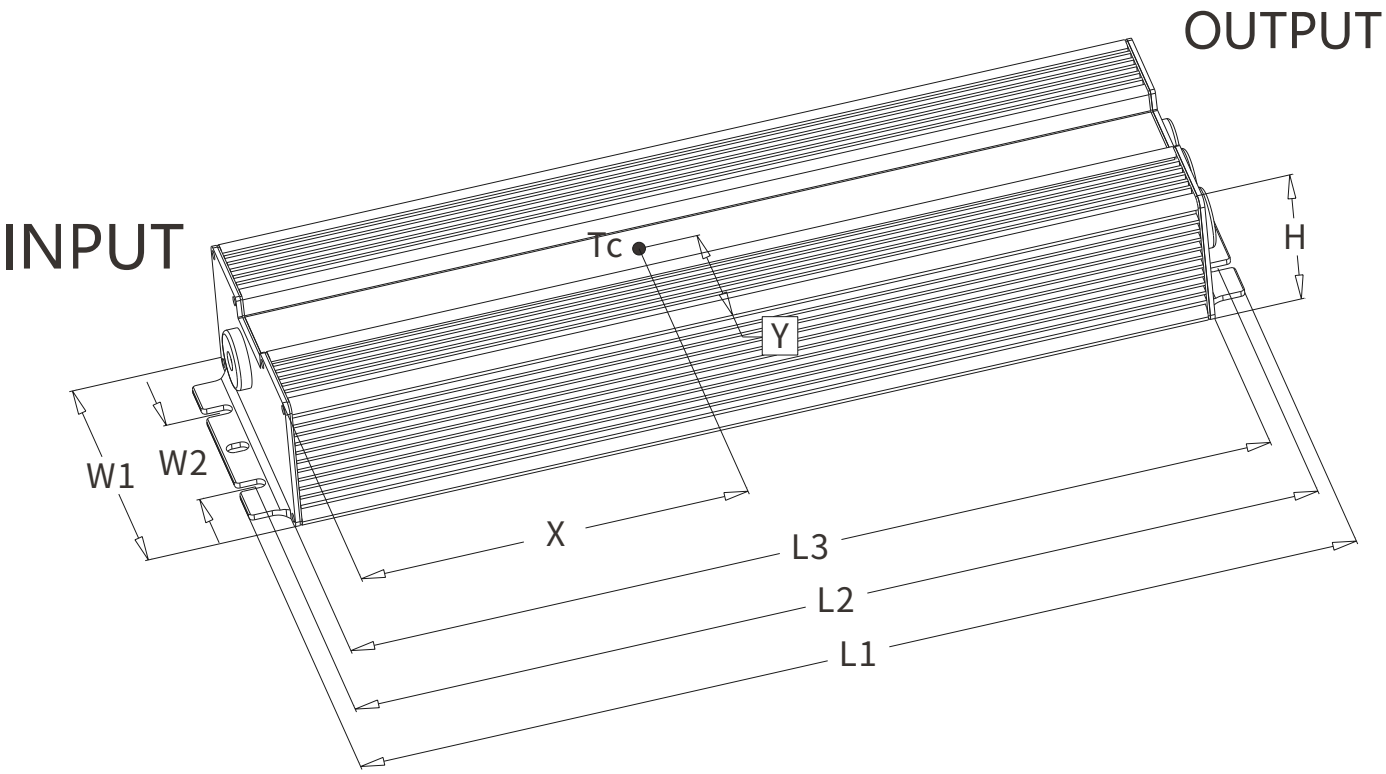
Mechanical Characteristic

Name Description	Standard Code	mm(in.)
Case Length	L3	474(18.66)
Case Width	W1	89.5(3.52)
Case Height	H	49(1.93)
Overall Length	L1	499(19.64)
Mounting Hole Length	L2	485(19.1)
Mounting Hole Width	W2	40(1.57)
TC Point Position	X	135(5.31)
TC Point Position	Y	45(1.77)

Note
1, Please follow the "LED Driver User Manual" obtained from SOSEN's official website for assembly.
2, AC Input Cable, DC O/P Cable, DIM/AUX Power/Programming Cable: Cable stripping length: 43±5mm, Conductor tinning length: 10±2mm



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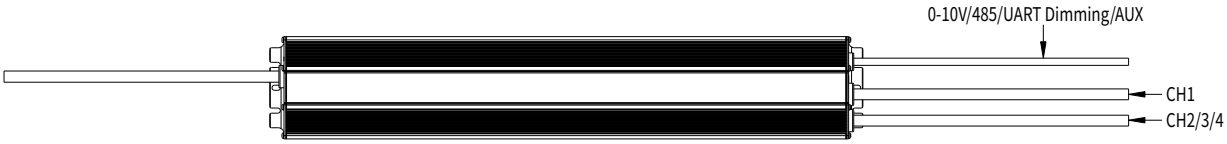
A/A-G model Installation Diagram

INPUT

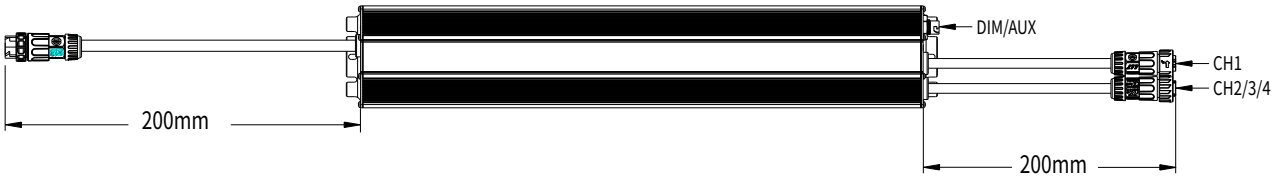
BH/BH-G/RH/RH-G/UH/UH-G model Installation Diagram

INPUT



-M/-MG model Installation Diagram (Add waterproof connector to I/O cable remarks)

INPUT



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Assembly Tips

1. Dimming or AUX Power tinned connectors should be capped if not used to avoid dimming or AUX Power parts damage from external signals.
2. The trace routing on aluminum substrates is designed in compliance with creepage distance requirements specified by relevant certification regulations.
3. The creepage distance between LED+ and LED- on the aluminum substrate is designed in compliance with the relevant certification regulations.
4. Minimize the copper area on the aluminum PCB to reduce parasitic capacitance and leakage current.
5. It is recommended to design LED beads in parallel first and then in series.
6. The insulation level of LED light panels should meet the reliability design requirements.
7. It's recommended to add resistors or capacitors in parallel with the LED on PCB to reduce the risk of surge when a non-isolated LED driver is used for the luminaire.
8. CH1 is isolated from CH2/CH3/CH4. During luminaire design, maintain a copper trace spacing of ≥ 3 mm between CH1 and CH2/CH3/CH4.
9. For other precautions, please refer to the "LED Driver User Manual".

Warning

Insufficient or compromised insulation voltage resistance in LED light panels may cause breakdown and short circuits to earth, resulting in damage to the luminaire and LED driver, and posing significant safety hazards. It is recommended to install a residual current device (RCD) during application.

Package

- Outside carton dimension: L×W×H = 615mm × 415mm × 110mm;
- 3 PCS/Carton;
- Net weight/Piece: 4.2kg; Gross weight/Carton: 13.5kg;
- Please refer to the product name, model number, manufacturer identification, QC PASS, manufacturing date on the package.

Transportation

Packaging is designed suitable for transportation by trucks, vessels and flights. The products should be avoided direct sunlight and rain, loaded/unloaded with caution.

Storage

The product storage meets the standard of the GB 3873-83.
Products should be rechecked if stored for over 1 year before assembly.

RoHS

Products comply with RoHS Directive (2011/65/EU) and amendment 2015/863/EU.

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Revision History

Version	Description of Update	Updated Date	Remark
V00	Original Release	2026-07-23	
V01	Modify the wire length of the waterproof header connector and delete the description of the constant current source for the dimming wire.	2026-09-03	

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