

Product features

- Small-sized constant current LED driver
- Supports TRIAC, ELV and 0/1-10 V dimming
- Programmable parameters via 2-wire QuickSet
- Selectable dimming profile for 0/1-10 V dimming
- Standby power ≤ 0.5 W
- Lifetime 50,000 hrs
- Flicker-free, meets requirements of IEEE 1789-2015
- Complies with Energy Star, DLC & CA Title 24 requirements



Class 2 c us Class P



Product specifications

680004 NASFF50-120277-1400T-TRIMODE-WS

Output current	Input voltage	Output voltage	Efficiency @ full load	Current accuracy	Power factor
700...1400 mA	120...277 Vac	6...50 Vdc	89 % (@ 277 Vac)	± 5 % (typical)	0.9 (Output Power > 34 W)
			88 % (@ 120 Vac)		

Electrical specifications

Mains voltage supply

Rated input voltage range	120...277 Vac; performance range
Max. input voltage range	108...305 Vac; operational safety range
Rated frequency range	50 / 60 Hz
Performance/Operational safety	47...63 Hz
Max. input current	0.5 A @ 120 Vac
Standby Power	≤ 0.5 W @ 120 Vac
Starting time	120 Vac: typ. 0.4 s; max. 0.5 s / 277 Vac: typ. 0.35 s; max. 0.5 s

Protection against voltage peaks

Withstand voltage	I/p-O/p: 1.6 kVac, < 5 mA 60 sec, I/p-earth: 1.5 kVac, < 5 mA 60 sec, O/p-earth: 0.5 kVac, < 5 mA 60 sec
Mains surge immunity	L-N 1 kV, L/N-earth 2 kV 2.5 kV ring wave

Total harmonic distortion (THD)

At rated input voltage range @ full load	≤ 15 %
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Output data

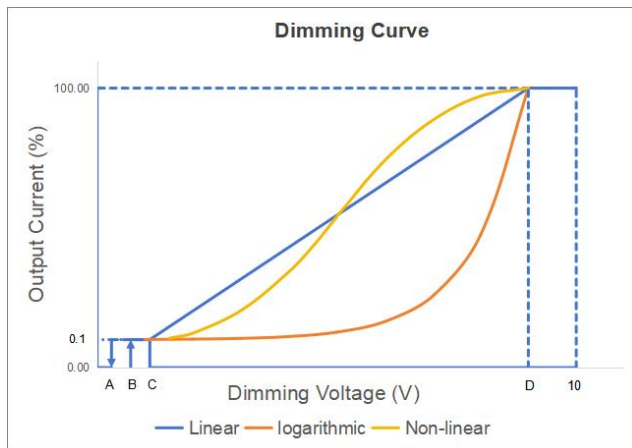
Output current tolerance	± 5 % at rated input voltage performance range (700...1400 mA)
No load output voltage	≤ 60 Vdc
Ripple output current	5 % (ripple = peak/average total 100 Hz) / Compliant with IEEE1789-2015

Protection functions output side

Overpower protection	The output power is less than or equal to 51.5 W
Short circuit protection	Hiccup mode. Protection device will trigger when short circuit and will auto recover after the fault mode is removed.
Overvoltage protection	Open circuit protection is designed to turn off the output and cannot be automatically restored. After removing the open circuit, the output can be restored by one of the following two operations: - Receive 0/1-10 V or TRIAC / ELV dimming signal and turn on. - Restart the driver: Power on the driver five seconds after the power failure.

Dimming operation and interface

Dimming mode	0/1-10 V input voltage 120...277 Vac, TRIAC / ELV for input voltage 120 Vac @ 60HZ. (Programming by 2-Wire QuickSet, see sec. "Introduction to Programmable Functions" for details)
Dimming method	Hybrid Dimming (CCR for brightness level > 12.5 %; PWM for brightness level ≤ 12.5 %)
Dimming current range	TRIAC / ELV dimming: 14...1400 mA (brightness: 1 %...100 %) 0/1-10 V dimming: 1.4...1400 mA (brightness: 0.1 %...100 %)
Dimming profiles	Selectable 0/1-10 V dimming profile (linear, logarithmic, nonlinear) Default: 0-10 V, linear (1 V - 0.1 % light level, 9 V - 100 % light level)



Typical dimming voltage points

Point	Voltage
A	0.7 V
B	0.9 V
C	1.0 V
D	9.0 V

Wiring

Main input wire	UL1332, 18 AWG, 300 V, 200°C, black L, white N, wire exposed 6.0 + 0.39 in (152 + 10 mm), tinplating length 0.39 ± 0.04 in (10 ± 1 mm).
Main output wire	UL1332, 20 AWG, 300 V, 200°C, red LED+, blue LED-, wire exposed 6.0 + 0.39 in (152 + 10 mm), tinplating length 0.39 ± 0.04 in (10 ± 1 mm).
DIM control input wire	UL1332, 22 AWG, 300 V, 200°C, purple DIM+, pink DIM-, wire exposed 6.0 + 0.39 in (152 + 10 mm), tinplating length 0.39 ± 0.04 in (10 ± 1 mm).

Degree of protection

Protection rating	IP20
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Operating data

Output current range	700...1400 mA (programmable)
Default output current	1400 mA
Output voltage range	6...50 Vdc
Noise level	< 20 dBA at full load @ 100 cm distance

Supplementary instructions

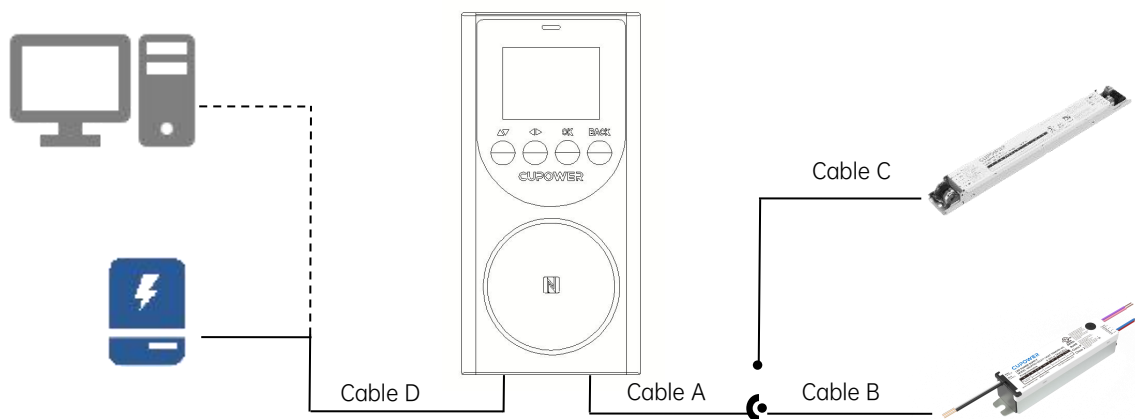
- The luminaire manufacturer is responsible for measuring and verifying the EMI compliance of the complete luminaire, as the level of radio interference will vary depending on the luminaire construction. Especially primary and secondary cable lengths and their routing may have a significant effect on radio interference.
- If the dimming depth is set too deeply, please make sure that the minimum current requirement for the LED light beads is met, and all the LED bulbs are in sync to prevent the situation where some LED bulbs fail to light up properly at lower brightness levels.

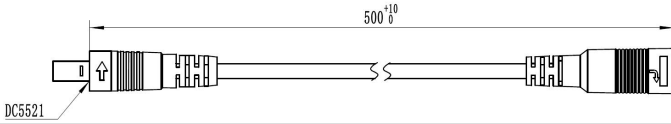
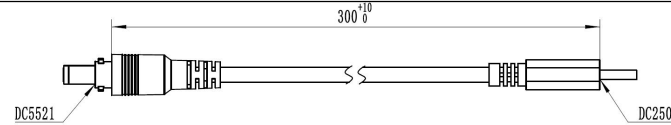
Introduction to Programmable Functions

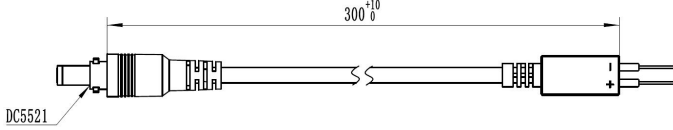
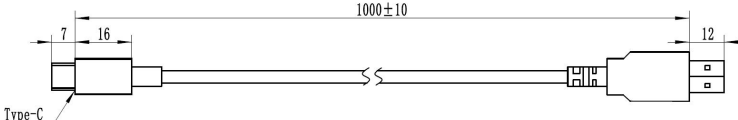
The driver can be programmed by inserting one end of the programmer into the driver and the other end into the USB port of the computer. The driver does not need to be powered on during the programming process. When ordering drivers, make sure you order the appropriate programmer.

NO.	Item
1	Program via 2-wire QuickSet
2	Support for reading product information, operating time, firmware version, number of failures
3	Dim-to-off (Default: off)
4	Customize the setting for the minimum screen brightness
5	CLO (Constant Lumen Output)
6	Modify the 0-10 V dimming curve : Linear, Nonlinear, Logarithmic (Default: Linear)

2-Wire QuickSet



Cable A		Cable A is an adapter cable; its left side connects to the MP02-USB, and its right side connects to either cable B or C.
Cable B		Cable B is the programming cable; its left side connects to cable A, and its right side connects to the product to be programmed.

Cable C		Cable C is the programming cable; its left side connects to cable A, and its right side connects to the product to be programmed.
Cable D		The D cable is the power and communication cable, used to connect the MP02-USB to a USB power source or a computer.

Environmental specifications

Operating temperature	-20...+50 °C
Storage temperature	-25...+85 °C
Working humidity	10 %...90 %
Storage humidity	5 %...95 %
Lifetime	at Tc 75 °C: 50,000 h. @ performance range (0.2 % / 1,000 h failure rate)
Maximum Tc temperature	90 °C

Safety & EMC compliance

UL (Cert. No.: E467833)	FCC	
UL8750	/	
CLASS P		
CSA C22.2 NO. 250.13		
CLASS 2		

Compatible Phase-cut Dimmers

Brand	Model	Brand	Model
Lutron	SCL-153PH-WH	Lutron	RCL-153PNL
Lutron	MACL-153MLH-WH	Leviton	PNLO6-TW
Lutron	DVCL-153P		
Lutron	CTCL-153PDH-LA		
Lutron	TGCL-153PR-WH		
Leviton	6674-POW		
Leviton	6672-1LW		

Note: If you need a report on the dimmer adapter, please contact CUPOWER sales.

Dimensions

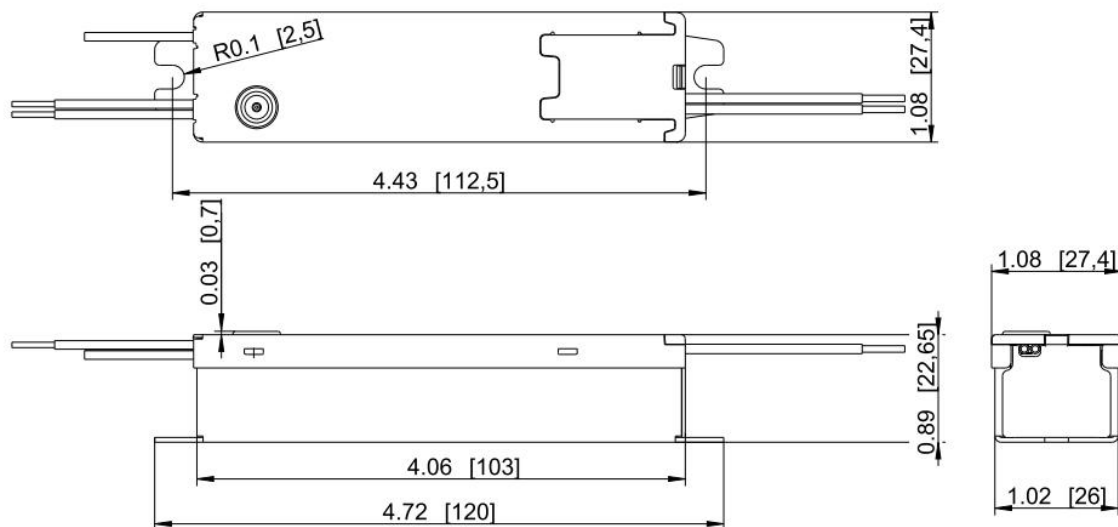
Housing dimensions

Length (L)	4.72 in (120.0 mm)
Width (W)	1.08 in (27.4 mm)
Height (H)	0.89 in (22.65 mm)

For all dimensions: values in in/mm; tolerances: ± 0.5 mm

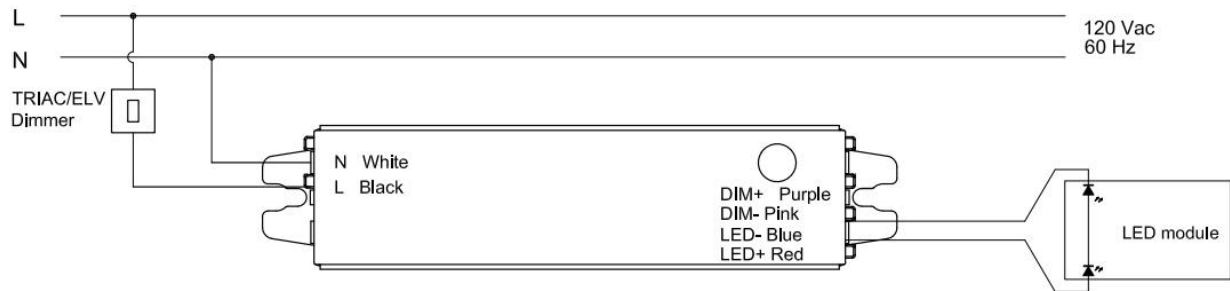
Packaging details

Packing units	56 pcs
Carton size	11.97 x 11.34 x 6.30 in (304 x 288 x 160 mm)
Carton weight	8.6 kg
Product weight	0.135 kg

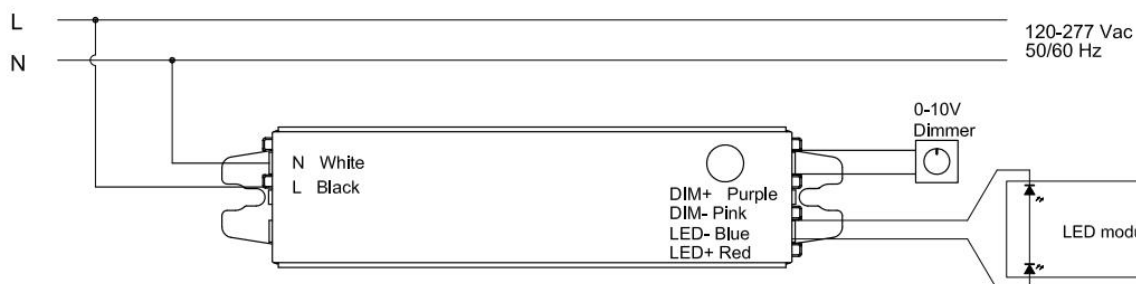


Wiring diagram

Triac / ELV:

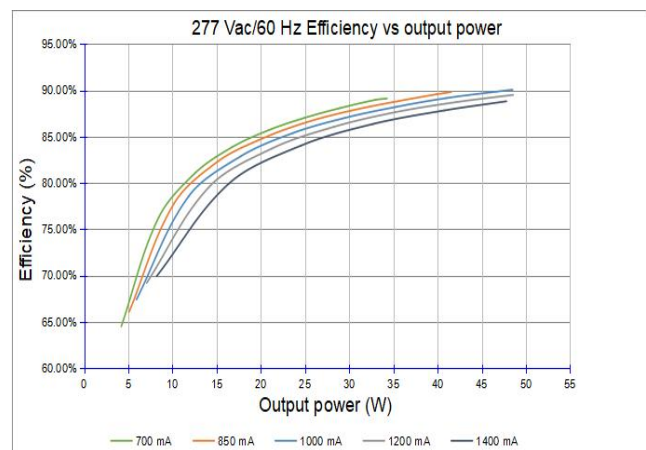
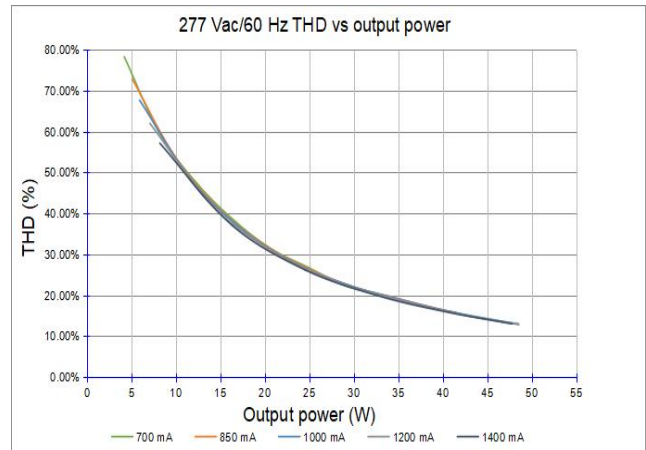
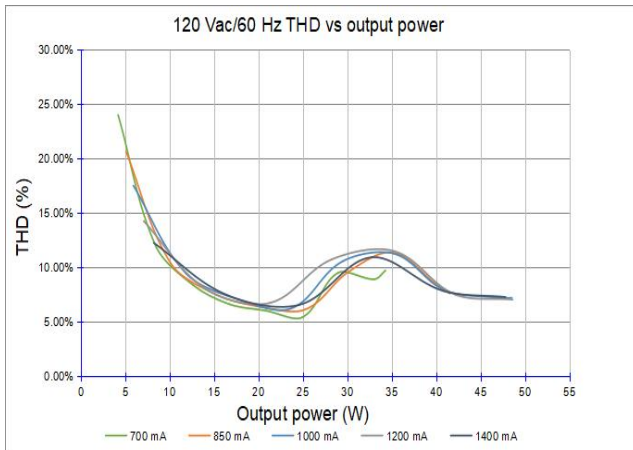
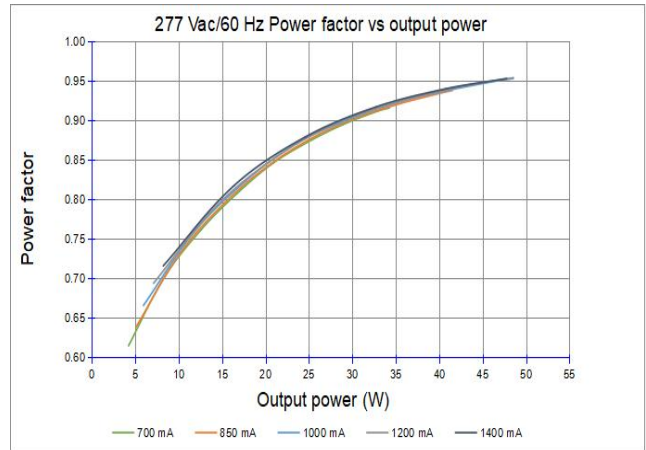
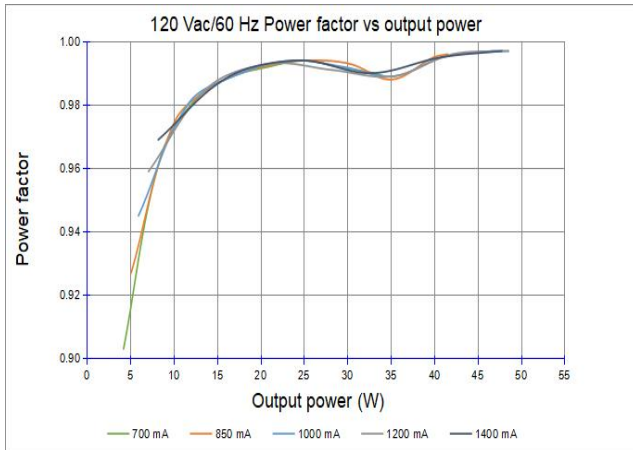


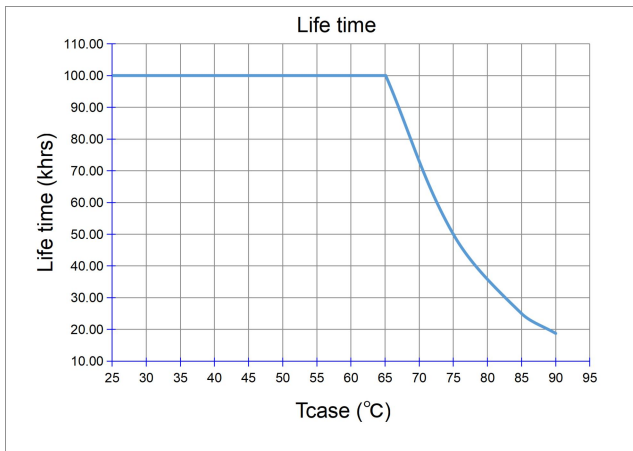
0-10 V:



- All connections must be as short as possible to ensure good EMI performance.
- The luminaire wire should keep a certain distance from the LED power supply and other wires (5...10 cm is preferred).
- No secondary switches are allowed.
- Incorrect wiring can damage the LED.
- The wire must be well protected against short circuit.
- The product is grounded through the casing.

Technical information





at Tc 75°C (0.2% / 1,000 h failure rate)



It's important to set the output current (AOC value) according to the LED voltage and make sure the power is within 50 W + 3%.

Example of AOC settings

V LED (Vdc)	AOC max	Pout (W)
35.7	1400 mA	50
50	1000 mA	50
50	700 mA	35