Light is OSRAM

OPTOTRONIC® LED Power Supply

OTi180W/UNV/1800C/2DIM/P6/G2 – Technical Specifications



General Information

Item Number	57538
Type	Constant Current
Output Power	180W (Max.)
Programming Tool	51645
Software	Download
Programmable Features	Output Current Dimming level Configurable thermal protection AstroDIM Constant lumen output End-of-life indicator

Environmental Specifications

Ambient Operating Temperature	-40ºC to 55ºC
Case Temperature (Tc)	85ºC[1] 90ºC (max)
Max. Storage Temp.	70ºC
Max. Relative Humidity (%)	95% non-condensing
Transient Protection	ANSI C62.41 Cat B 6.0kV, 4kV EFT
IP Rating	IP66
UL Environmental Rating	UL Class P, Dry & Damp Type HL
UL File number	E320395
EMI Compliance	FCC 47 Part 15 Class A
Sound Rating	Class A

1 – Warranty applicable only at 85ºC
2 – Class 2 or non-Class 2 wiring allowed

c UL us LISTED Class P

Electrical Specifications

Input

Input Voltage (VAC)		120V-277V (+/- 10%)
Frequency Range (Hz)		50 – 60 Hz (+/- 10%)
	120V	**277V**
Input Current (A)	1.65	0.71
THD @ Full load	<10%	<10%
Power Factor @ Full load	>0.9	>0.9
Efficiency @ Full load	>90%	>93%
Inrush Current (A_{pk})	42A, 412µs	97A, 412µs

Output

Output Current (mA)	1000-1800mA (1mA step)
Output Voltage (VDC)	50-150VDC
Output Ripple Current	< 20% @ 1800mA
Max. Output Power (W)	180W
LED Power-Up Time	<1 sec
Load Regulation	<3%
Line Regulation	<3%
Over Voltage Protection	Yes
Over Load Protection	Current fold back @183W, non-latching
Output Short-Circuit Protection	Yes, non-latching

Dimming

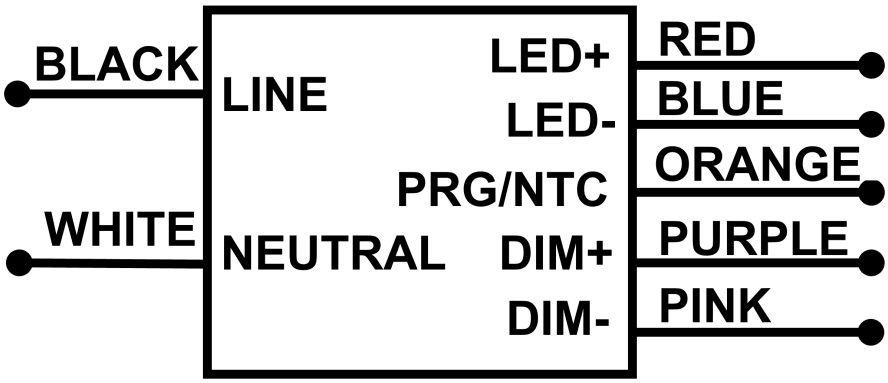
Dimming Control	0 – 10V (Isolated)[2] AstroDIM
Dimming Range	10-100%
Dimming Type	Analog
Source/Sink Current	0.8mA

LED thermal protection (NTC)

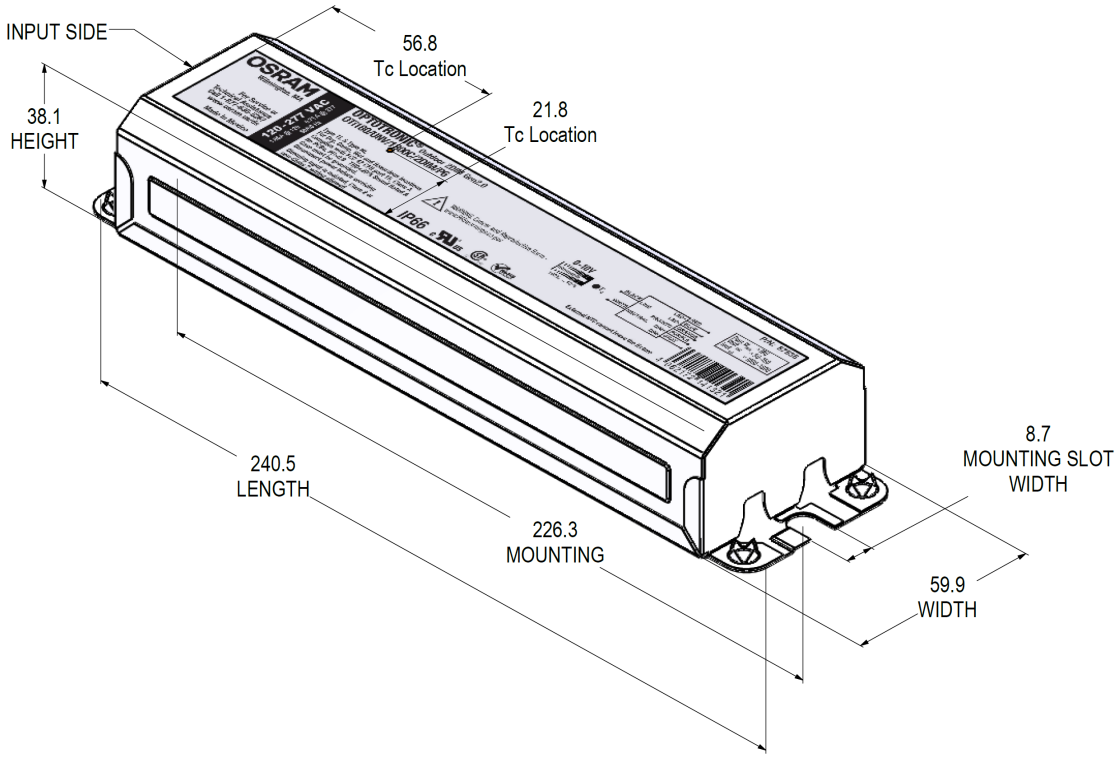
NTC Value Active Range	≤25kΩ
Temperature Derating start	User defined

External NTC cannot leave the fixture
The PRG/ NTC control circuit terminals or lead wires are not isolated

Wiring Diagram



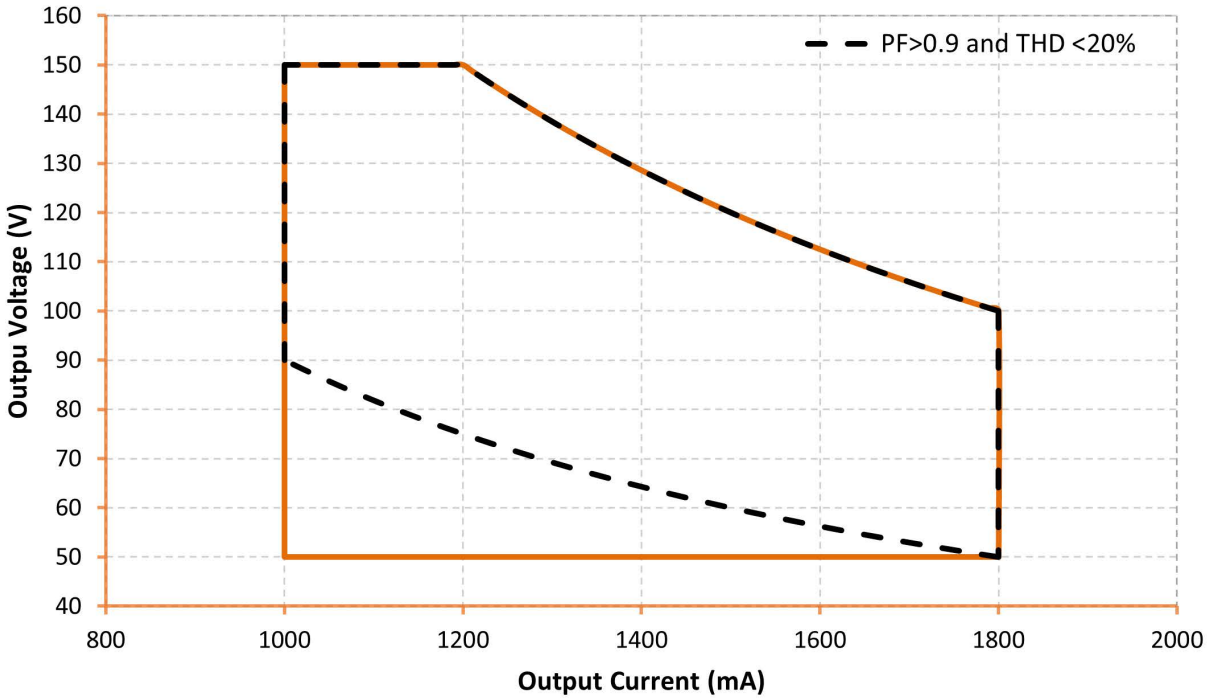
Mechanical Diagram



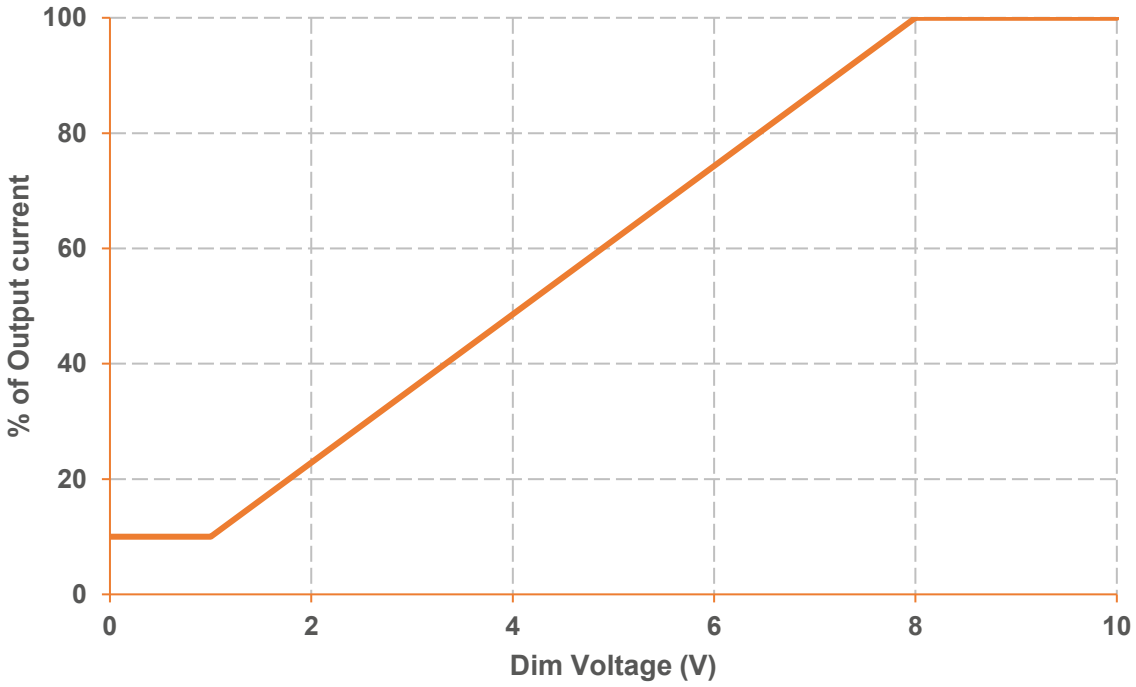
Mechanical Specification

Length	9.47” (240.5mm)
Width	2.36” (59.9 mm)
Height	1.5” (38.1mm)
Mounting Length	8.9” (226.3mm)
Mounting slot width	0.34“ (8.7mm)

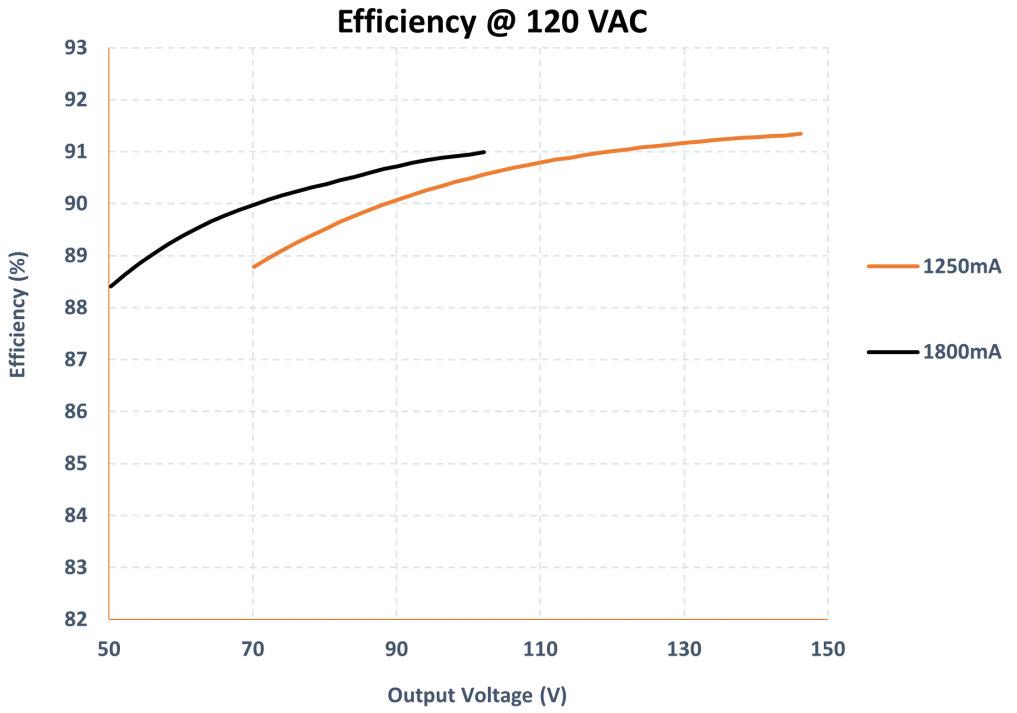
Operating Range

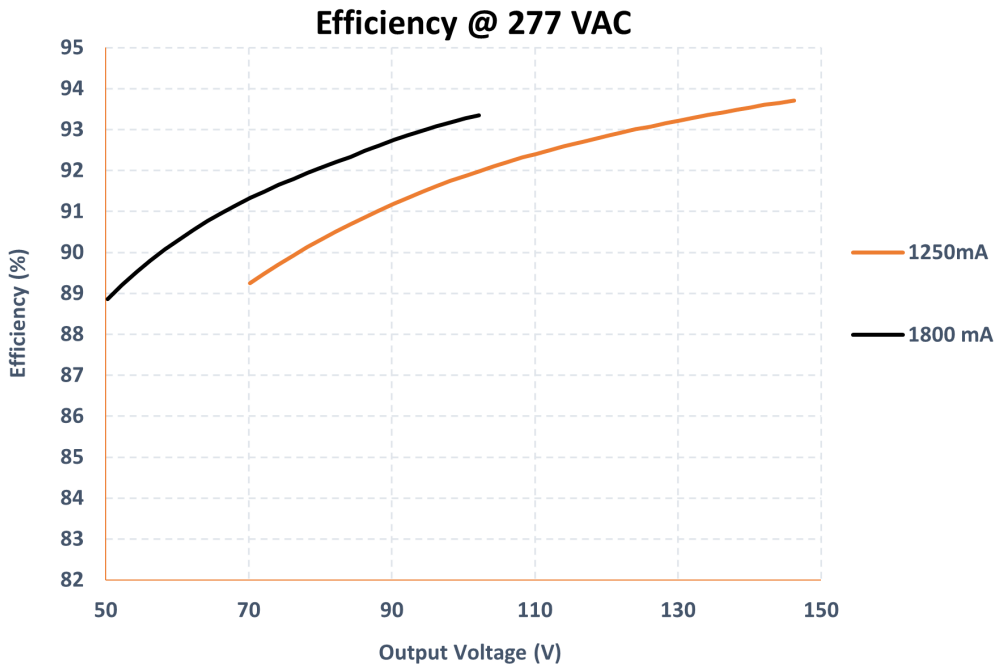


Dimming Curve

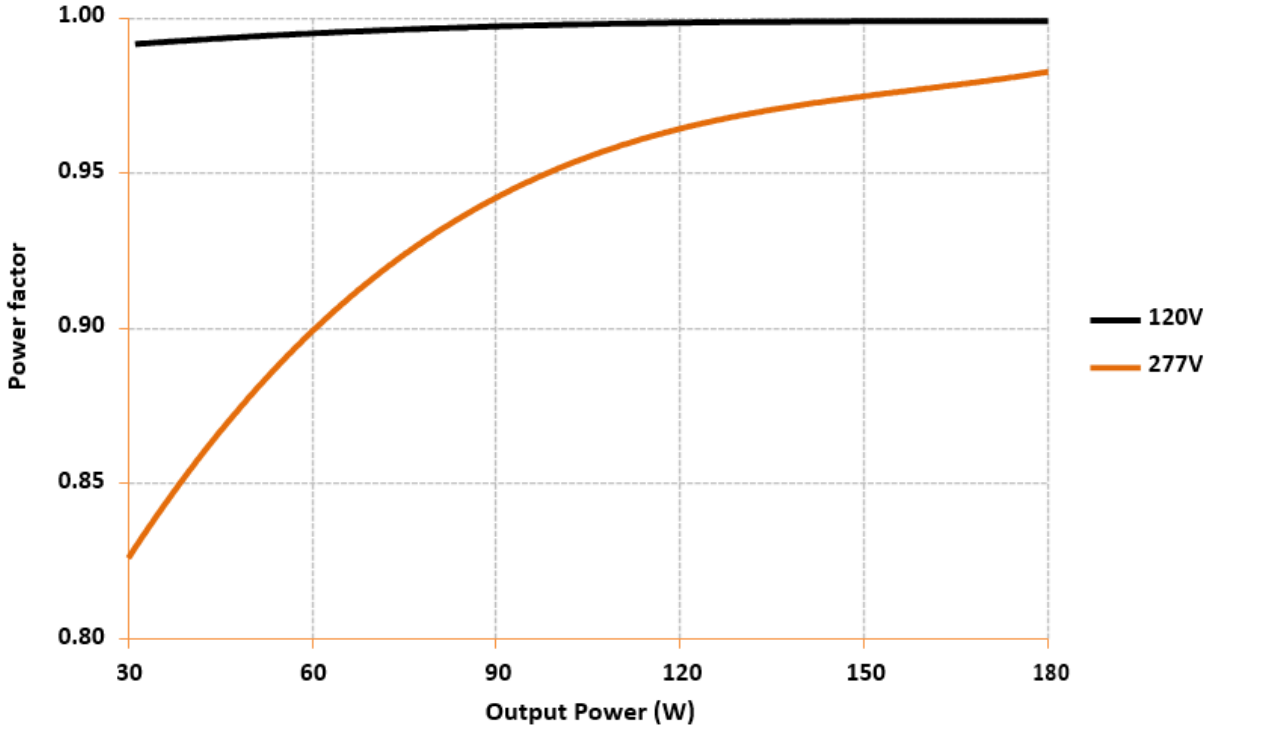


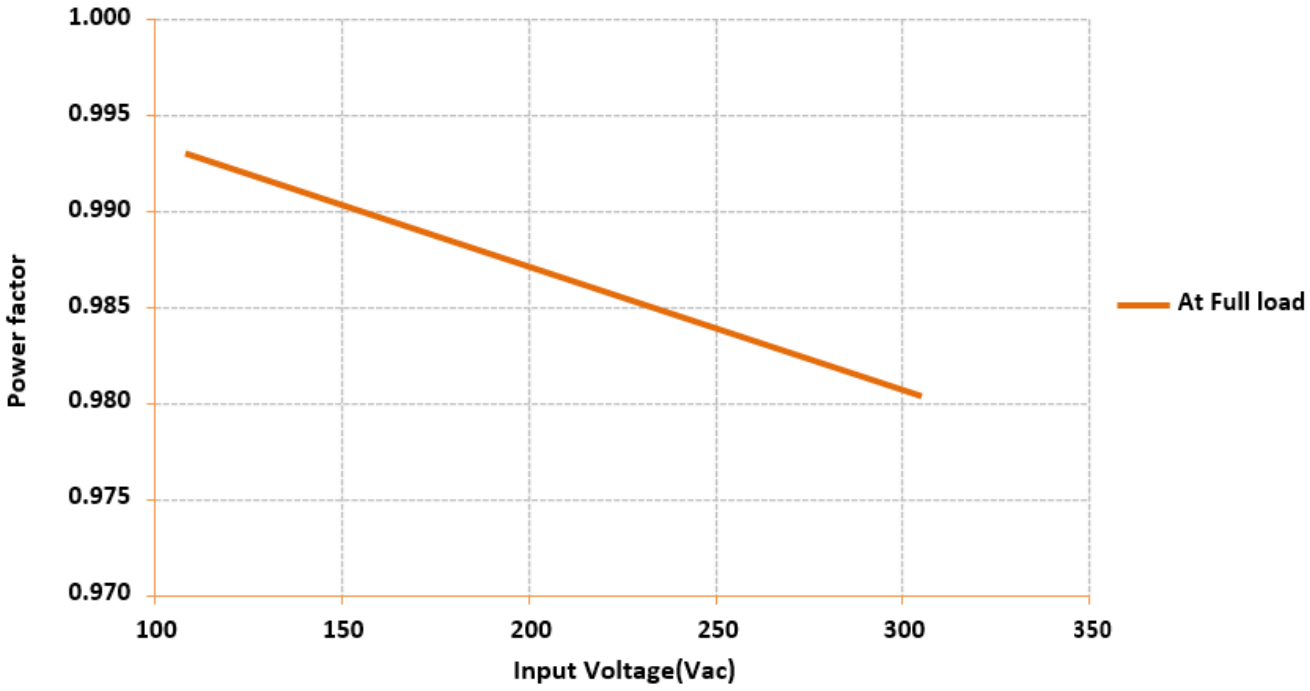
Efficiency vs Output Voltage



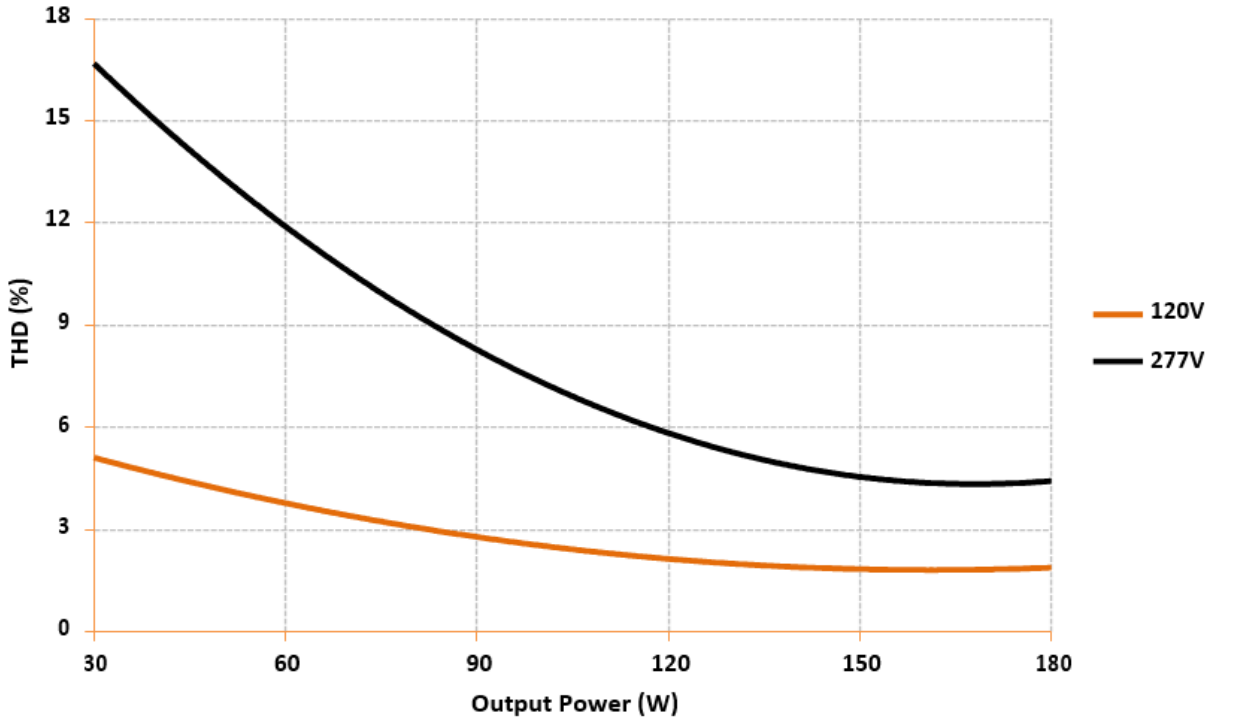


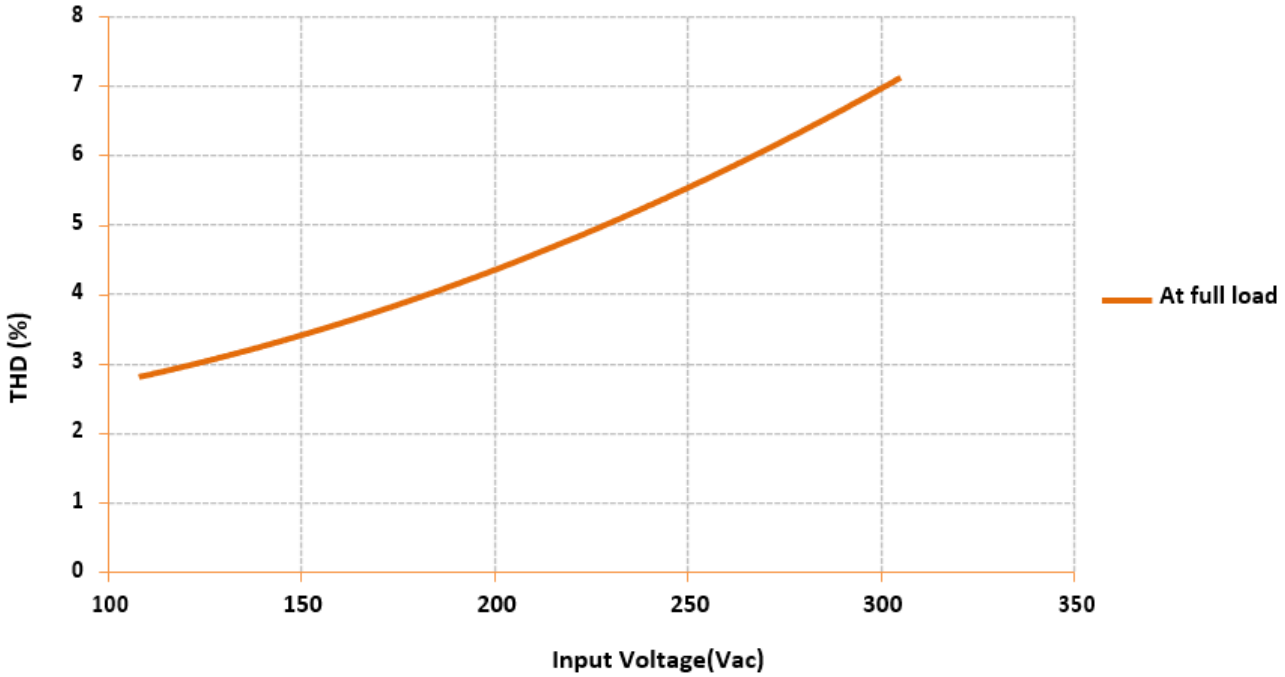
Power Factor Performance





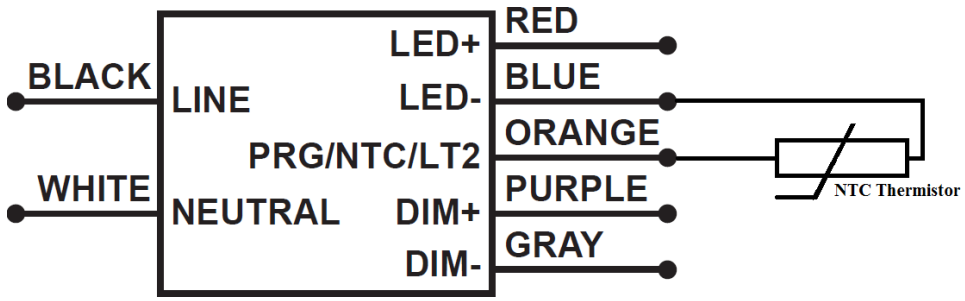
THD Performance





LED Thermal Protection (NTC) Characteristic

The LED thermal protection feature of the OT180W helps reduce the temperature of the LED module by reducing the output current in case of abnormal temperature conditions. To use this feature a third party NTC thermistor should be connected to the LED power supply as shown in the wiring diagram below.

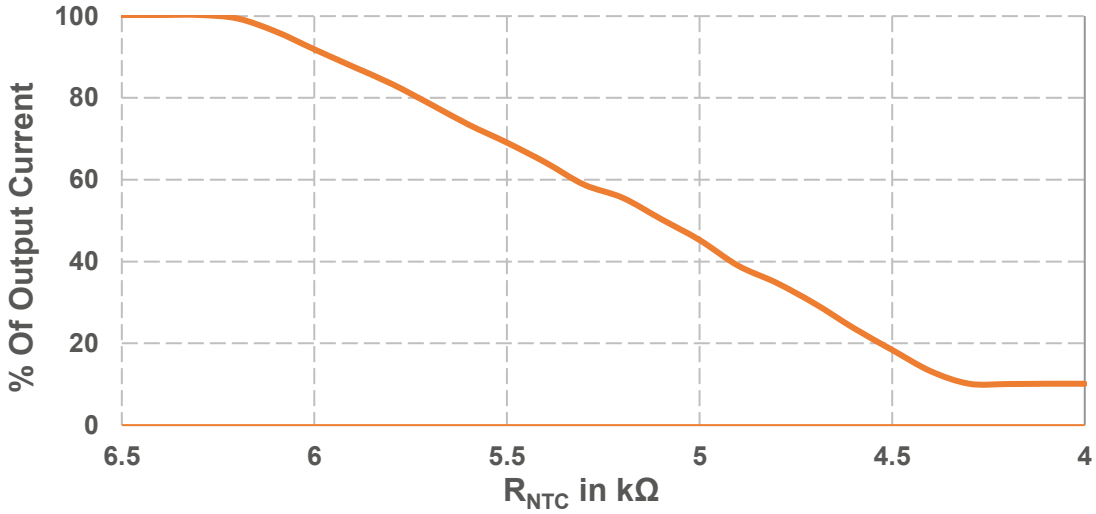


In the end application, care must be taken to place the NTC thermistor close to the hottest spot on the LED module. If LED thermal protection is not required the NTC port on the LED power supply connector can be left open.
Vishay, EPCOS, Murata, Panasonic are some of the manufacturers of NTC thermistor. EPCOS part number for reference only **B57164K153J (15kΩ @ 25°C)**. Murata part number for reference only - **NCP03XH223J05RL (22kΩ @ 25°C)**

For detailed information on LED Thermal Protection, please refer to Technical Application guide (ECS 304)

Note: Graphs for reference. The de-rating limits can be programmed using the OT Programmer

Derating start = 6.3kΩ; Derating end = 4.3kΩ; Min output level = 10%



End-of-Life Indicator

The End-of-Life indicator feature helps the end user to receive a signal from the fixture indicating that it has reached its programmed life-time. After the LED driver reaches the programmed life-time, whenever it is turned ON, it stays at 'Dim' level (10%) for 10 minutes and reaches its appropriate level.

AstroDIM

AstroDIM is an autonomous five level (1 Power ON & 4 Dimming levels) dimming protocol. It provides multi-stage night-time power reduction based on an internal timer; there is no need for an external control infrastructure. The ECG is automatically aligned to the on and off times for the street lighting and provide a defined output for the particular period of time. Compared with conventional systems there are significant cost savings. AstroDIM is designed for dimming without any external control wiring. Therefore, AstroDIM helps to save energy, extend the life of the driver and the LED module and reduce light pollution, even if only a power line is available. In AstroDIM operation, the driver executes a preset dimming profile, which can be reconfigured via the OT Programming Tool. The autonomous dimming is regulated by an integrated timer (no real-time clock), which adjusts the dimming profile according to the previous night (operation from switch-on to switch-off).

For detailed information on AstroDIM please refer to Technical Application guide 2DIM feature (LED 408)

Constant Lumen Maintenance

The Constant Lumen Maintenance feature of the OT180W helps to maintain the required lumen output of the fixture at a constant level throughout its lifetime. In general LED's lumen output will depreciate over time and in order to maintain sufficient light level towards the end of lifetime, the LED's are driven at high current initially and will result in more energy consumption. The constant lumen maintenance will give the flexibility to drive the LEDs at optimal driving current throughout its lifetime. This helps in energy savings, constant light output and enhanced reliability of the system.

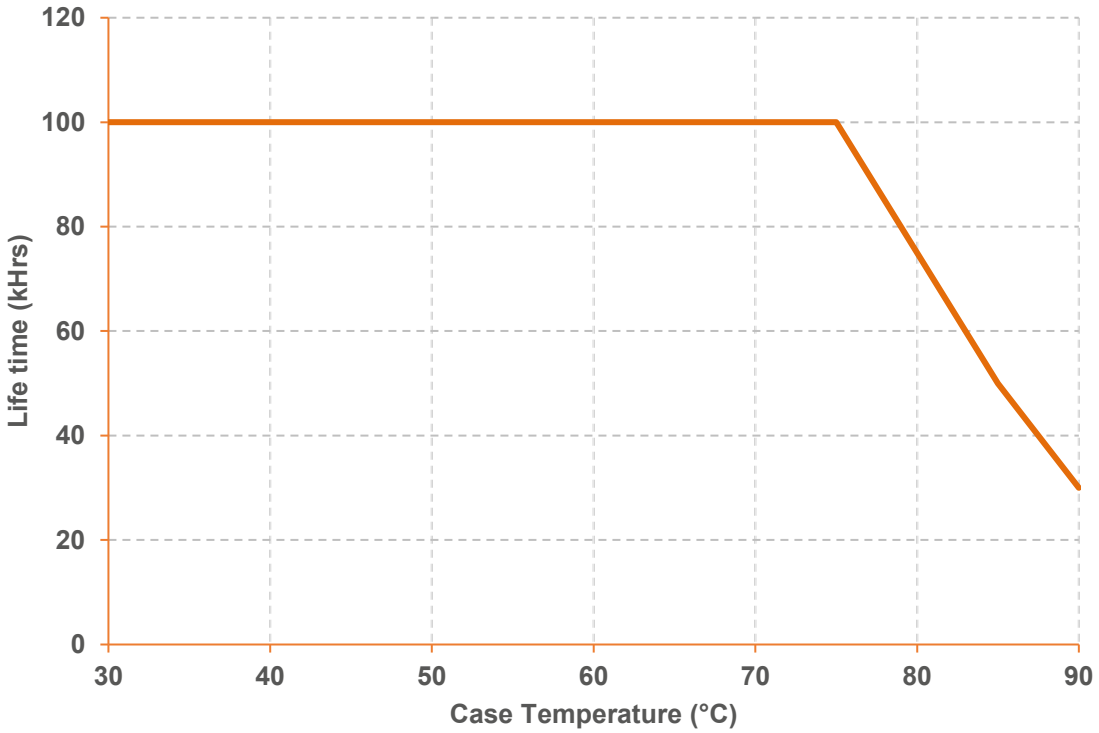
Note: A detailed step-by-step instructions are outlined in the 'OT Programmer User Manual V2.1'

Dimmer Compatibility

Manufacturer	Part Number
OSRAM	EN-LCM-1R10V-GB2-BK EN-LCM-1R10V-GB2-BK/DR EN-ALC-1R10V-GB2-BK EN-ALC-1R10V-GB2-BK-DR
Sylvania	ELMC-SL3W-TVWBX/UNV
Leviton	IP710-DLX
Lutron	DVTV-XX
Wattstopper	ADF-120277
Synergy Lighting Controls	ISD BC

Note: The absence of a dimmer from this chart does not necessarily imply incompatibility. Please reference the dimmer manufacturer's instructions for installation.

Lifetime vs Case Temperature



Warranty

OPTOTRONIC® products are covered by our LED Module, OPTOTRONIC Power Supply or Control Warranty. For additional details, refer to the latest version of the warranty (LED089) available at www.osram.us/optotronic

OSRAM SYLVANIA Inc.
200 Ballardvale Street
Wilmington, MA 01887
USA 877-636-5267
www.osram.us/ds

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