



Light is OSRAM

# OPTOTRONIC® Programmable Outdoor LED Driver

## OTi100W/UNV/1600C/2DIM+/P6/AUX



### General Information

Item Number	57505
Type	Constant Current
Output Power	100W (Max.)
Programming Tool	51645
Software	<a href="#">Download</a>
Programmable Features	Output Current
	Dimming level
	Dim-to-Off
	Soft Start
	LED thermal protection
	AstroDIM
	Vaux (12/20/24V)
	Constant lumen output
	End-of-life indicator

### Environmental Specifications

Ambient Operating Temperature	-40°C to 55°C
Case Temperature (T <sub>c</sub> )	80°C (50kHrs) <sup>3</sup> 85°C (max)
Max. Storage Temp.	70°C
Max. Relative Humidity (%)	95% non-condensing
Transient Protection	ANSI C82.77-5-2015 6.0kV EFT ANSI C136.2 2kV
IP Rating	IP66
UL Environmental Rating	Dry & Damp
UL File number	E320395
EMI Compliance	FCC Part 15 Class A
Sound Rating	Class A

- 1- Class 2 or non-Class 2 wiring allowed
- 2- PWM dimming below 180 mA
- 3- Warranty applicable only at 85°C



### Electrical Specifications

#### Input

Input Voltage (VAC)	120V-277V (+/- 10%)	
Frequency Range (Hz)	50 – 60 Hz (+/- 10%)	
	<b>120V</b>	<b>277V</b>
Input Current (A)	1.03	0.47
THD @ Full load	<10%	<10%
Power Factor @ Full load	>0.95	>0.95
Efficiency @ Full load	91%	91%
Inrush Current (A <sub>pk</sub> )	43A(279 μs)	69A(317 μs)

#### Output

Output Current (mA)	500-1600mA (1mA step) 1050mA default
Output Voltage (VDC)	40-185VDC
Output Ripple Current	< 25% @1600mA
Max. Output Power (W)	100W
LED Power-Up Time	<1 sec
Load Regulation	<5%
Line Regulation	<5%
Over Voltage Protection	Yes, non-latching
Over Load Protection	Power fold back @10W
Output Short-Circuit Protection	Yes, non-latching
Over Temperature Protection	Yes, Foldback at 90°C, Auto recovery

#### Dimming

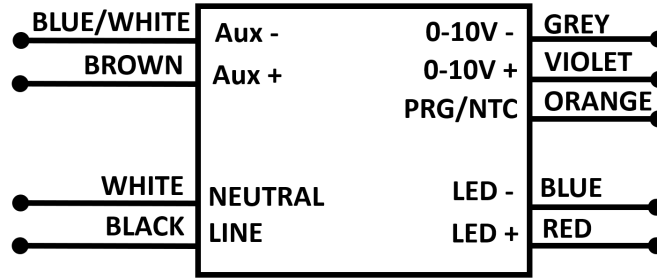
Dimming Control	0 – 10V (Isolated) <sup>1</sup> AstroDIM
Dimming Range	10-100%
Dimming Type	Analog, PWM <sup>2</sup> (>1kHz)
Source/Sink Current	0.17mA
Dim-to-Off OFF/ON Threshold	0.91V/1.01V

#### LED thermal protection (NTC)

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

# OTi100W/UNV/1600C/2DIM+/P6 - Technical Specifications

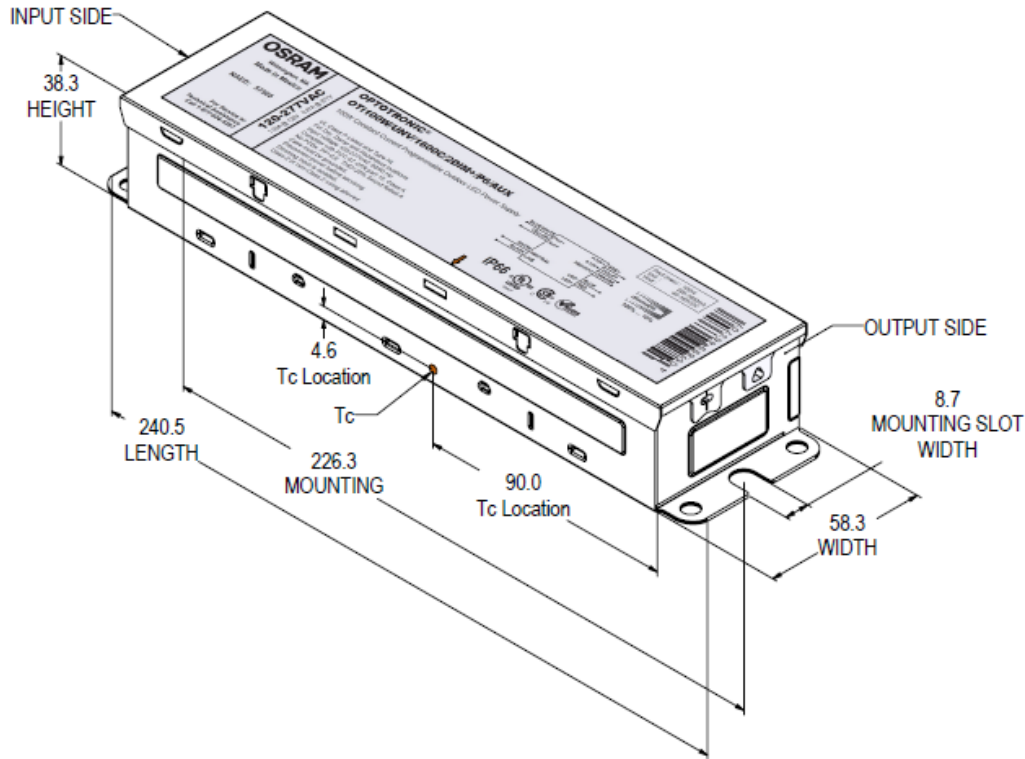
## Wiring Diagram



**Note:** Maximum suggested remote mounting distance is 16 feet. For additional information on further distances and EMI compliance reference application note LED126.

**Note:** The Dimming input is isolated and will allow Class 2 or non-Class 2 wiring across Purple and Gray wires

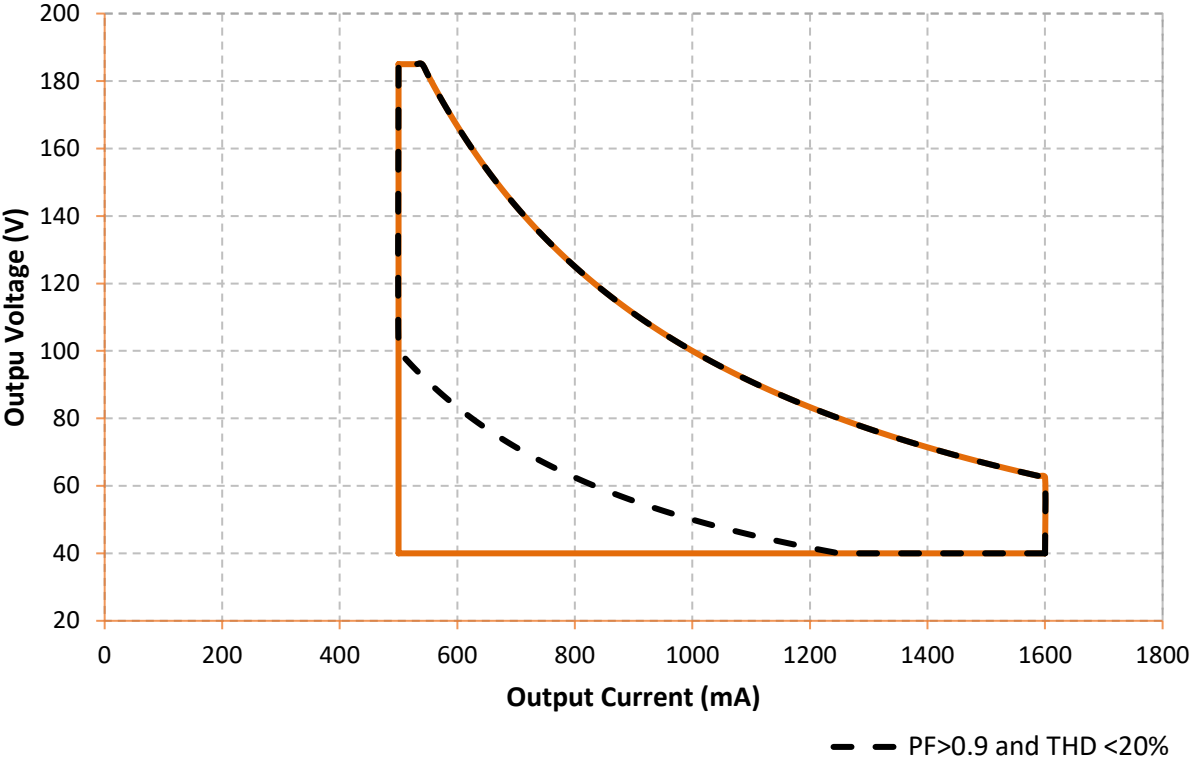
## Mechanical Diagram



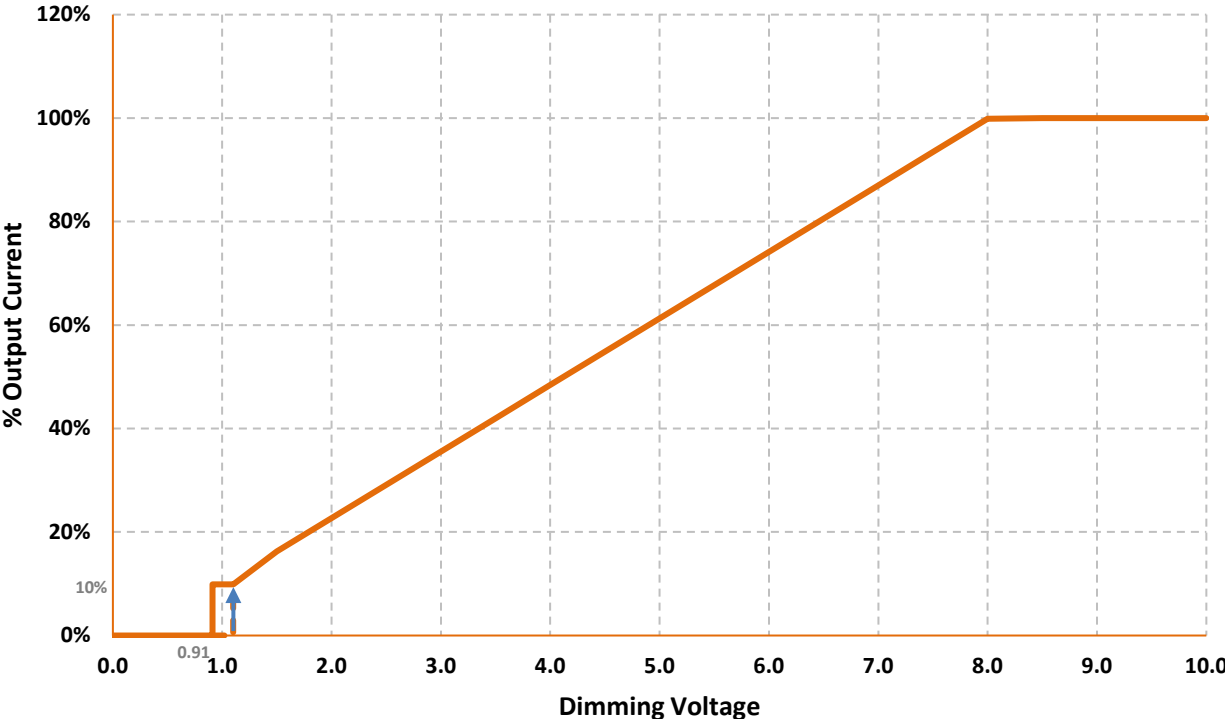
## Mechanical Specification

Length	9.46" (240.5mm)
Width	2.29" (58.3mm)
Height	1.5" (38.3mm)
Mounting Length	8.9" (226.3mm)
Mounting slot width	0.34" (8.7mm)

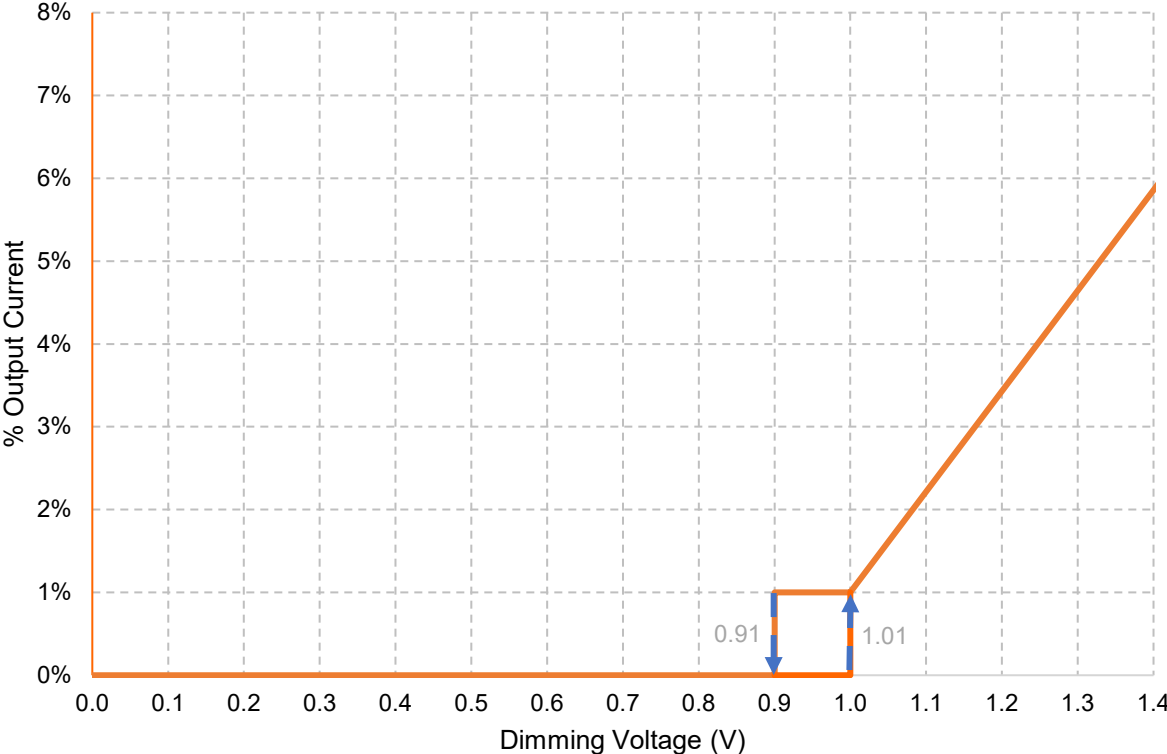
Operating Range



Dimming Curve

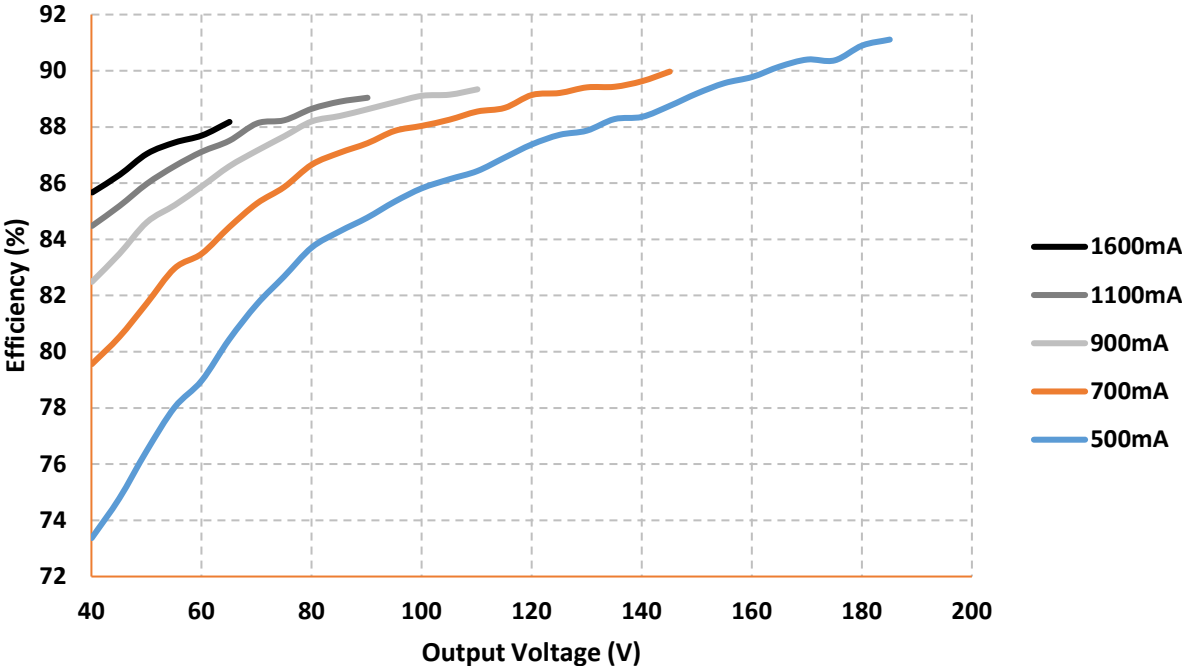


Dim to off Hysteresis

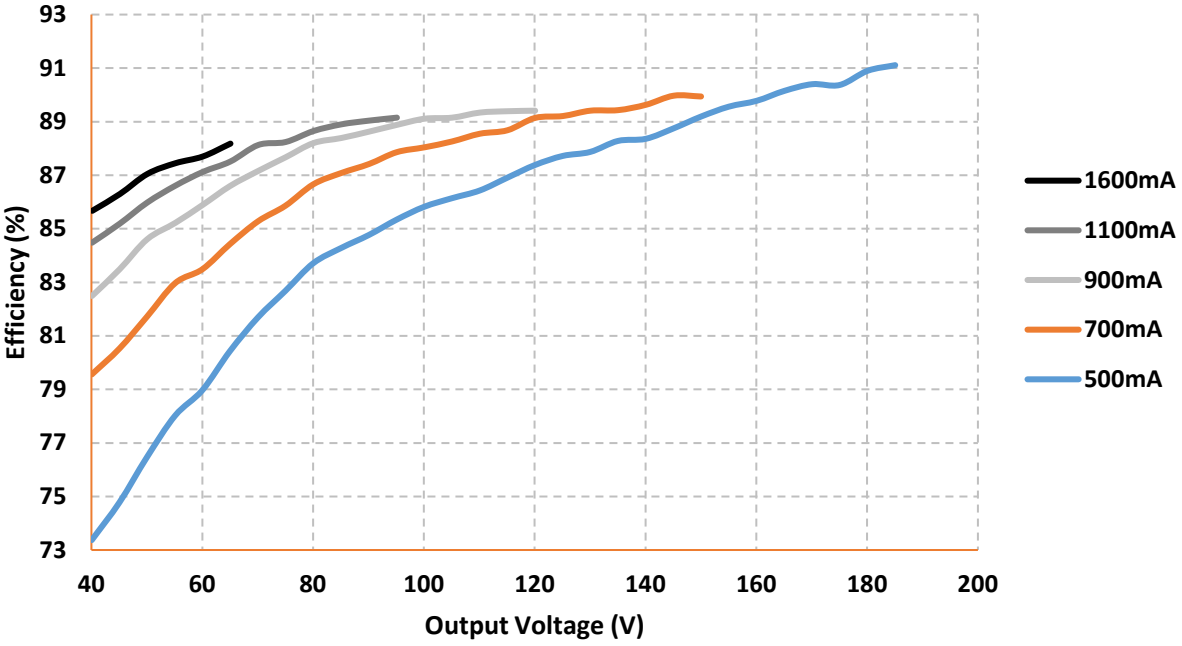


Efficiency vs Output Voltage

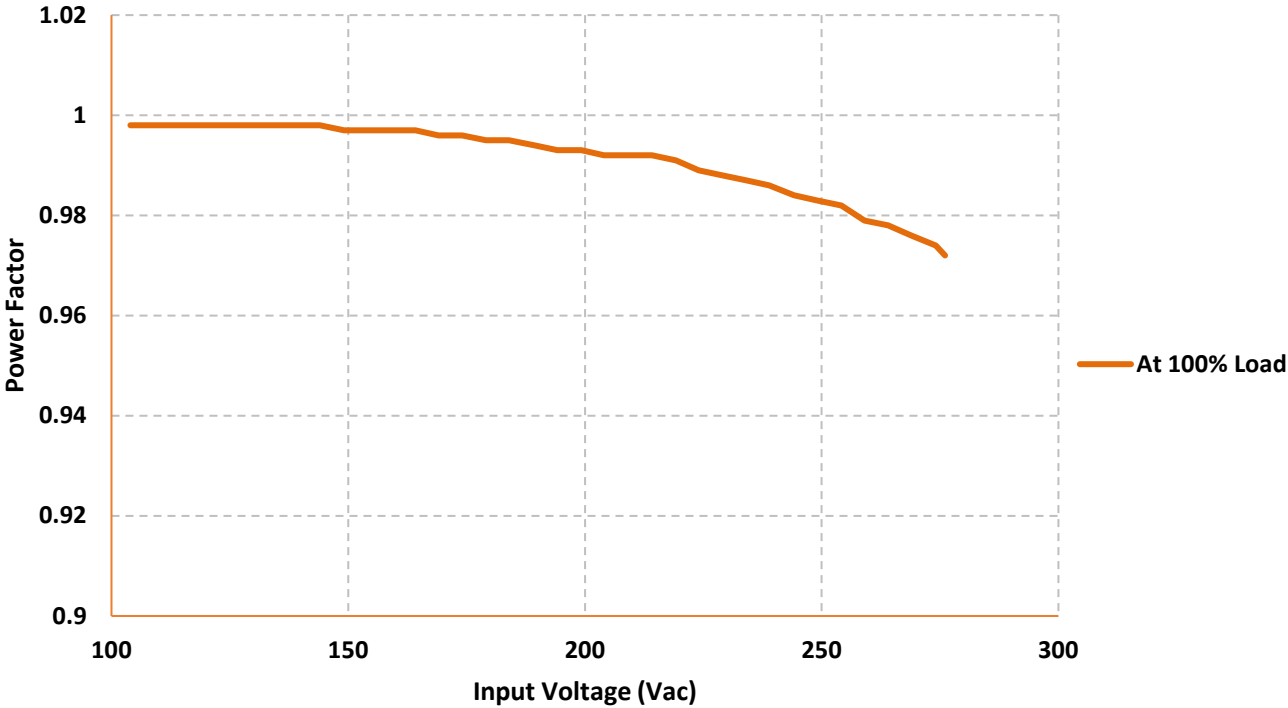
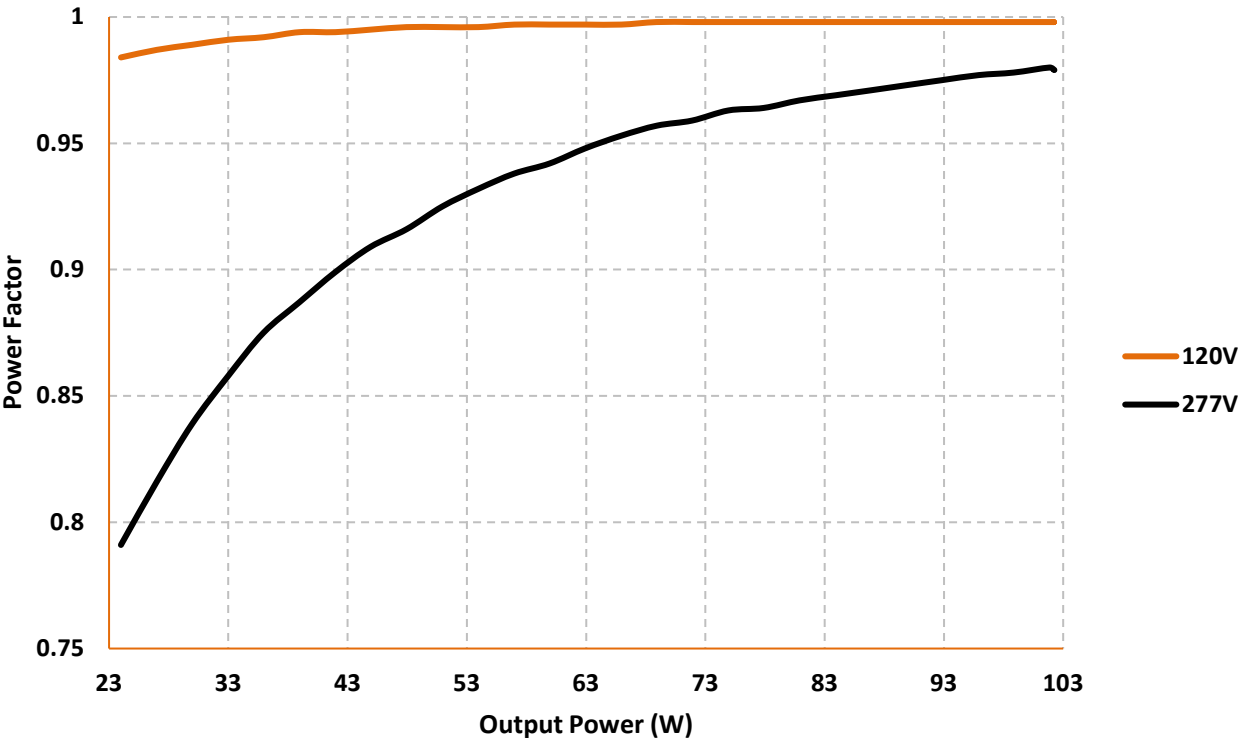
Efficiency @ 120V



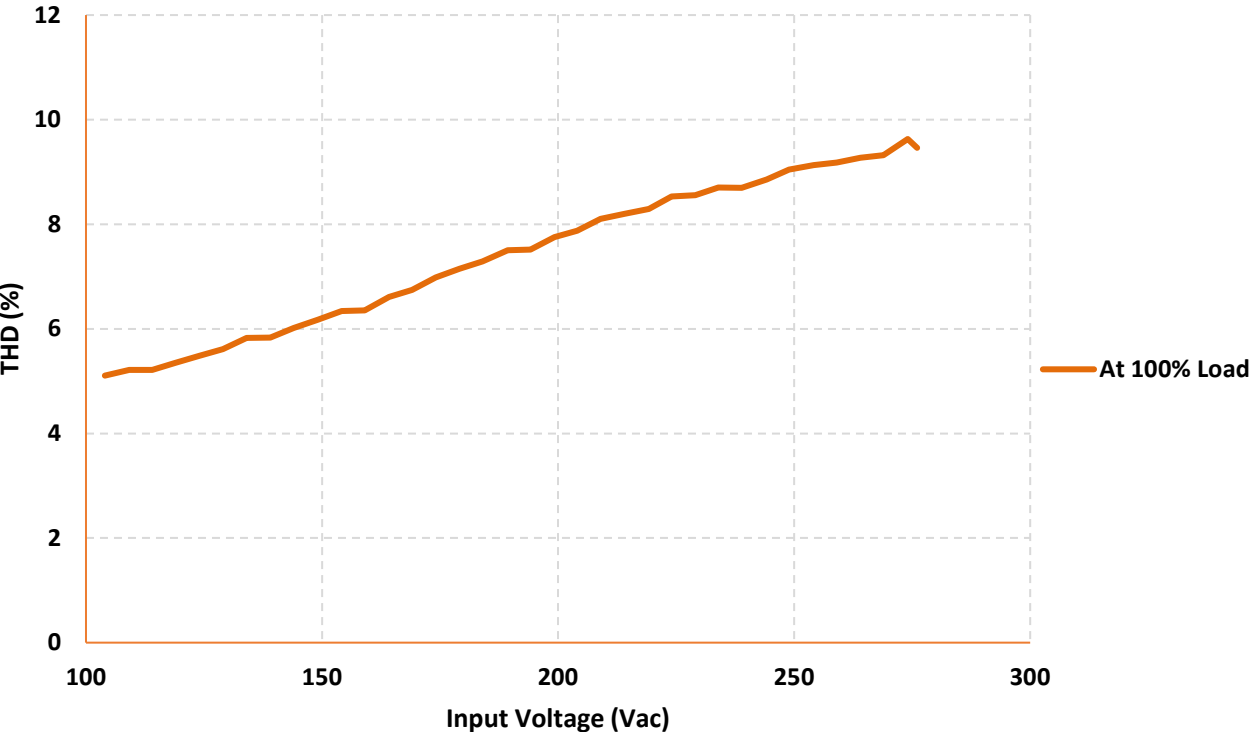
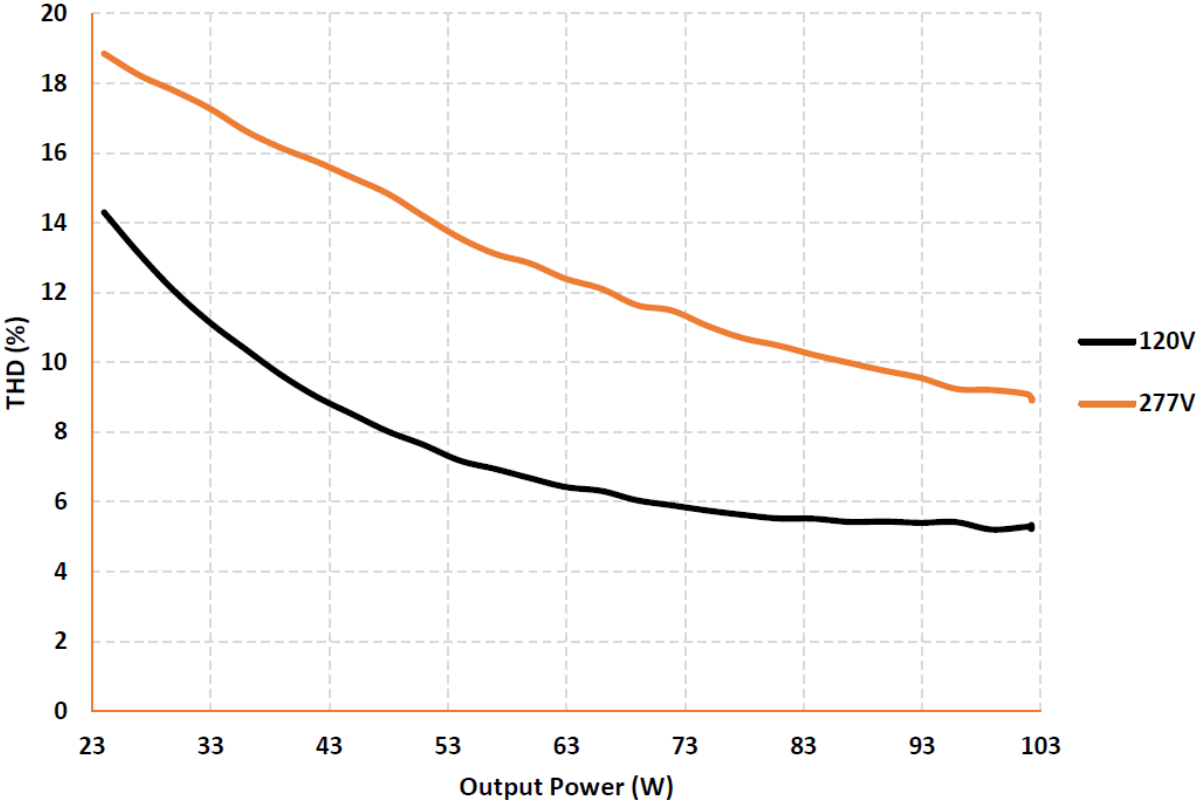
Efficiency @ 277V



Power Factor Performance



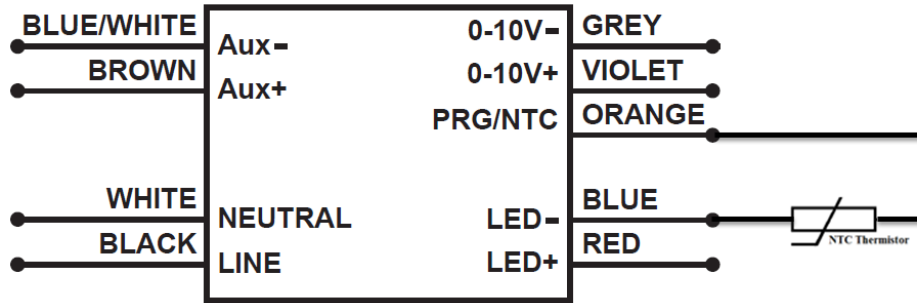
THD Performance



# OTi100W/UNV/1600C/2DIM+/P6 - Technical Specifications

## LED Thermal Protection (NTC) Characteristic

The LED thermal protection feature of the OT100W 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.

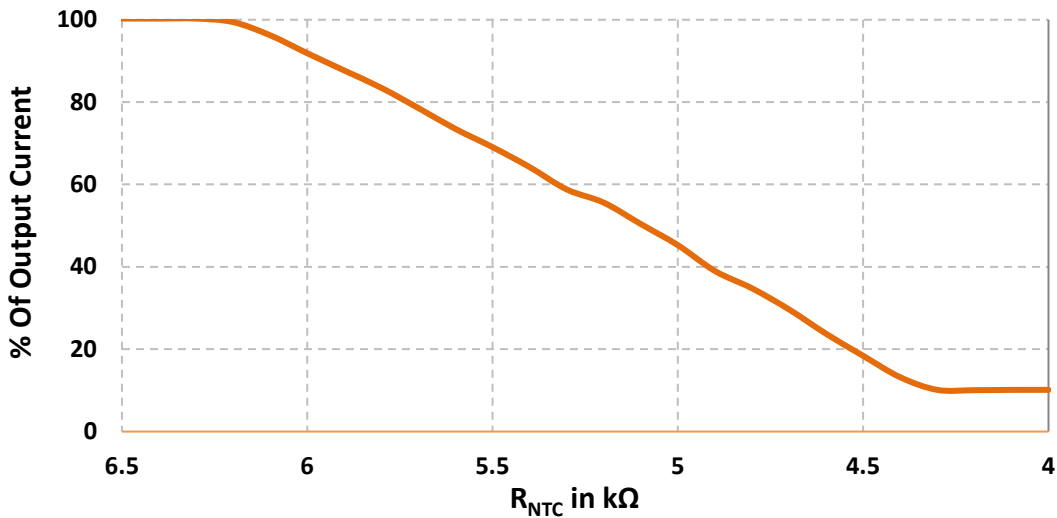


In the end application, care must be taken to place the NTC thermistor close to the hottest spot on the LED module. If LED thermal protection is not required the NTC port on the LED power supply connector can be left open.

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)**

**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%**





## OTi100W/UNV/1600C/2DIM+/P6 - Technical Specifications

### 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 OT100W 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'

### INRUSH CHARACTERISTICS

Vin (V)	Ipeak (A)	T (@ 10% of Ipeak)
120	43	279 $\mu$ s
277	69	317 $\mu$ s

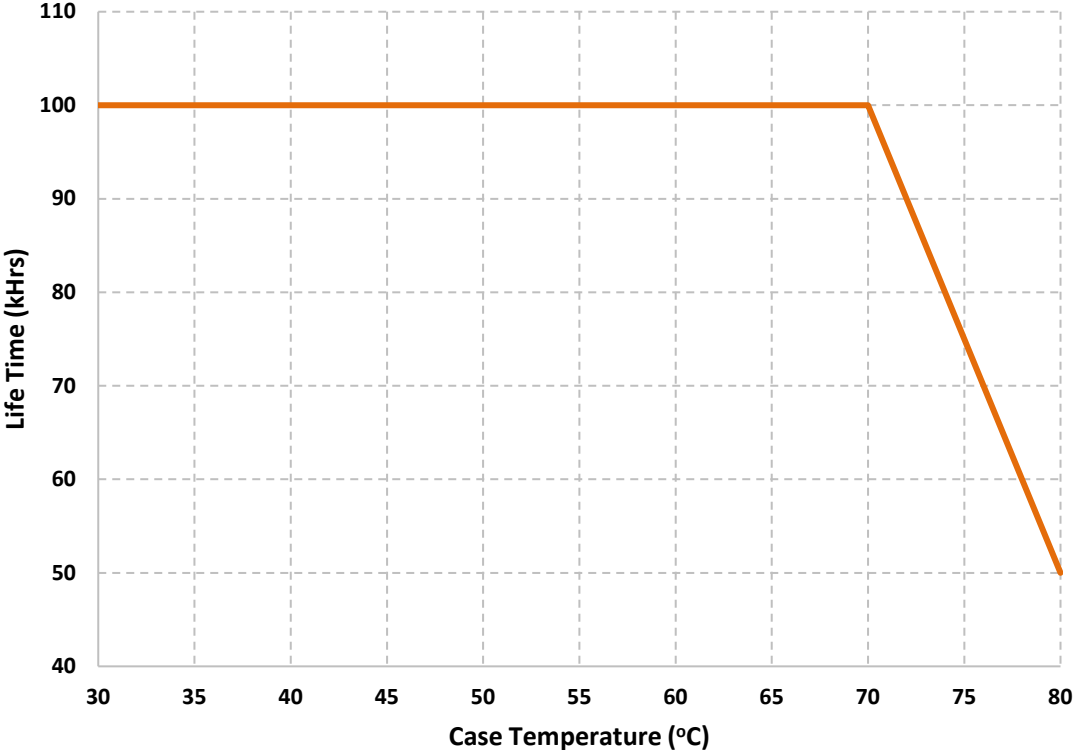
Complies to NEMA 410 for inrush current requirements

### 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
Leviton	IP710-DLZ
Lutron	DVTV-XX
Wattstopper	ADF-120277
SYLVANIA	ELMC-SL3W-TVWBX/UNV
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 (LED395) available at [www.osram.us/warranty](http://www.osram.us/warranty)

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