

Light is OSRAM

## OPTOTRONIC® LED Power Supply

## OTi 50W Programmable G2 - Technical Specifications



## General Information

Item Number	57452, 57456
Type	Constant Current, Class2
Output Power	50W (Max.)
Programming Tool	51645 & 51647/51648
Software	<a href="#">Download</a>
Programmable Features	Output current
	Dimming level
	Dim-to-off, Soft Start
	LED thermal protection
	Auxiliary output voltage
	Constant lumen output
	End-of-life indicator

## Environmental Specifications

Ambient Operating Temperature	-30°C to 50°C
Case Temperature (Tc)	85°C Max <sup>1</sup>
	75°C – 5 Year Warranty
Max. Storage Temp.	70°C
Max. Relative Humidity (%)	85% non-condensing
Transient Protection	NEMA SSL 1 - 2010
	Non-Roadway 2.5KV
UL Rating	Dry & Damp
UL File number	E320395
EMI Compliance	FCC Part 15 Class A
Sound Rating	Class A

1- Warranty applicable only at 75°C  
 2- Default Vaux is 12V



## Electrical Specifications

## Input

Input Voltage (VAC)	120V-277V (+/- 10%)	
Frequency Range (Hz)	50 – 60 Hz (+/- 10%)	
	120V	277V
Input Current (A)	0.52	0.23
THD @ Full load	<10%	<20%
Power Factor @ Full load	>0.9	>0.9
Efficiency @ Full load	≥88%	≥89%
Inrush Current (A <sub>pk</sub> , T@10% of A <sub>pk</sub> )	1.33, 57μs	2.66, 46μs

## Output

Output Current (mA)	400-1400mA (1mA step) Default 1050mA
Output Voltage (VDC)	10-55VDC
Output Ripple Current	<20% @ 1400mA
Max. Output Power (W)	50W
LED Power-Up Time	<1sec
Load Regulation	<5%
Line Regulation	<5%
Over Voltage Protection	Yes, non-latching
Over Load Protection	Yes, non-latching
Output Short-Circuit Protection	Yes, non-latching
Over Temperature Protection	Foldback at 110°C

## Dimming

Dimming Control	0 – 10V (Isolated)
Dimming Range	1-100%
Dimming Type	Analog
Dimming Input Isolation	2.5kV
Source/Sink Current	0.2mA max
Dim-to-Off OFF/ON Threshold	0.7V/1V
Stand-by Power (max)	1.4W(120V); 1.7W(277V)

## Auxiliary Output (Model: 57456 only)

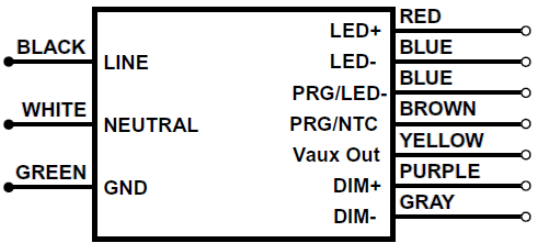
Output Voltage (VDC)	12/20/24V <sup>2</sup> (configurable)
Max Output Power (W)	1W
Voltage Regulation	±10%

## LED thermal protection (NTC)

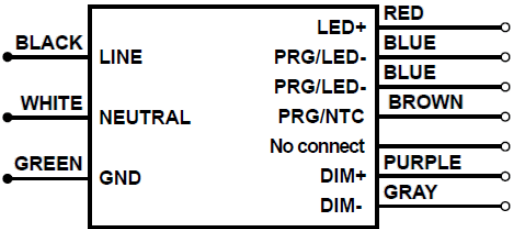
NTC Value Active Range	≤25kΩ
Temperature Derating Start	User defined

Wiring Diagram

Wiring diagram for AUX output models



Wiring diagram for non-AUX output models

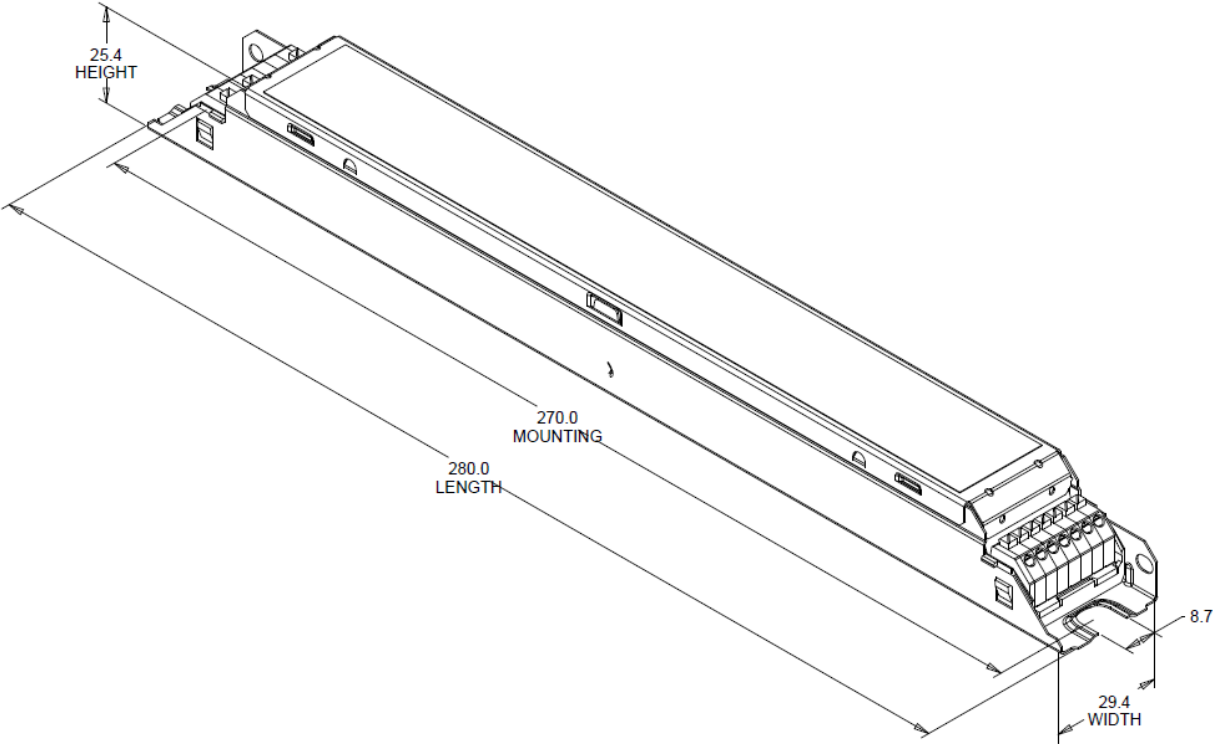


**Note:** The Vaux Out (YELLOW) and LED- (BLUE) will provide the DC Auxiliary output. Yellow is “+ve” polarity and blue is “-ve” polarity.  
**Note:** Maximum suggested remote mounting distance is 16 feet.

Key Application Notes

- Dim-to-off and Soft Start are programmable (enable/disable) features. The default mode for both features is disabled for out-of-the-box products. If these features are required, they must be enabled in the programming software.

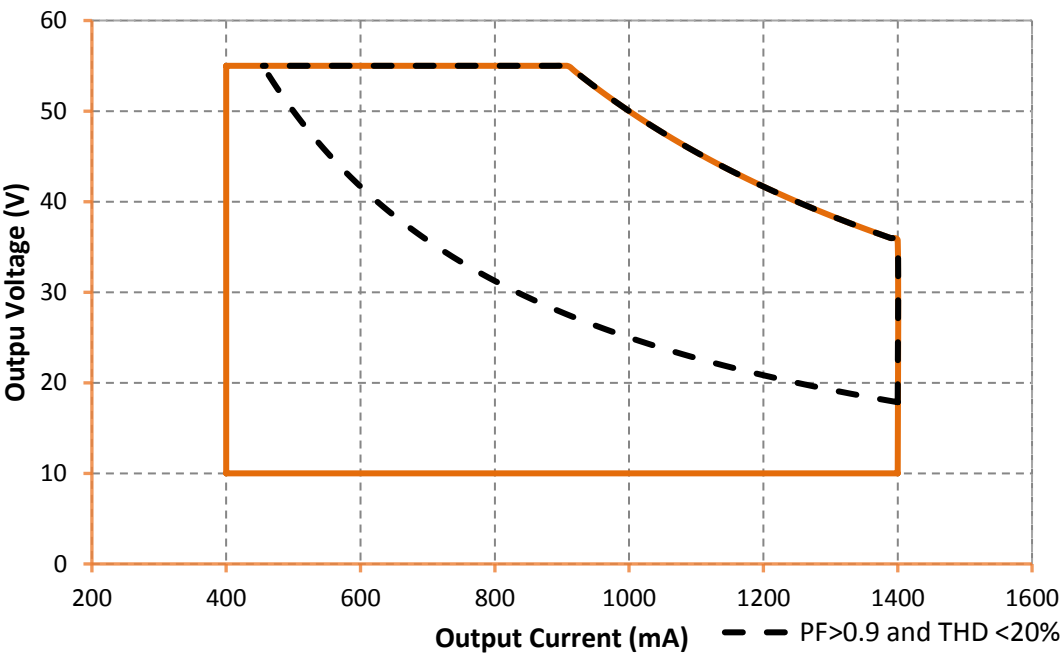
Mechanical Diagram



Mechanical Specification

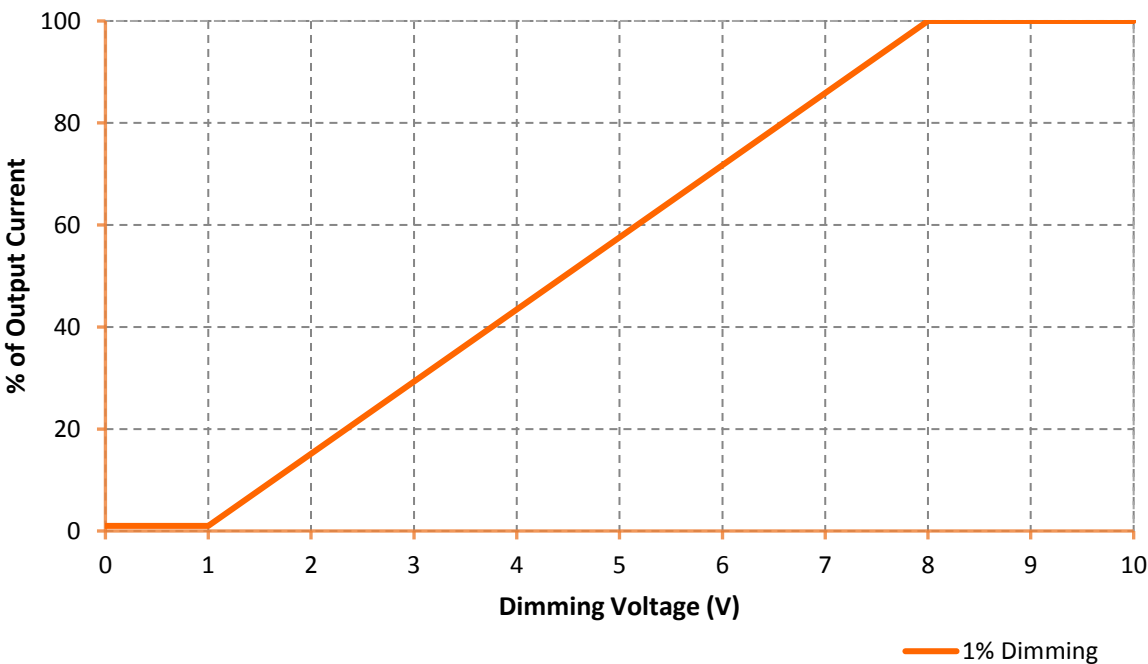
Length	11.02" (280mm)
Width	1.15" (29.4mm)
Height	1.0" (25.4mm)
Mounting Length	10.63" (270mm)

Operating Range

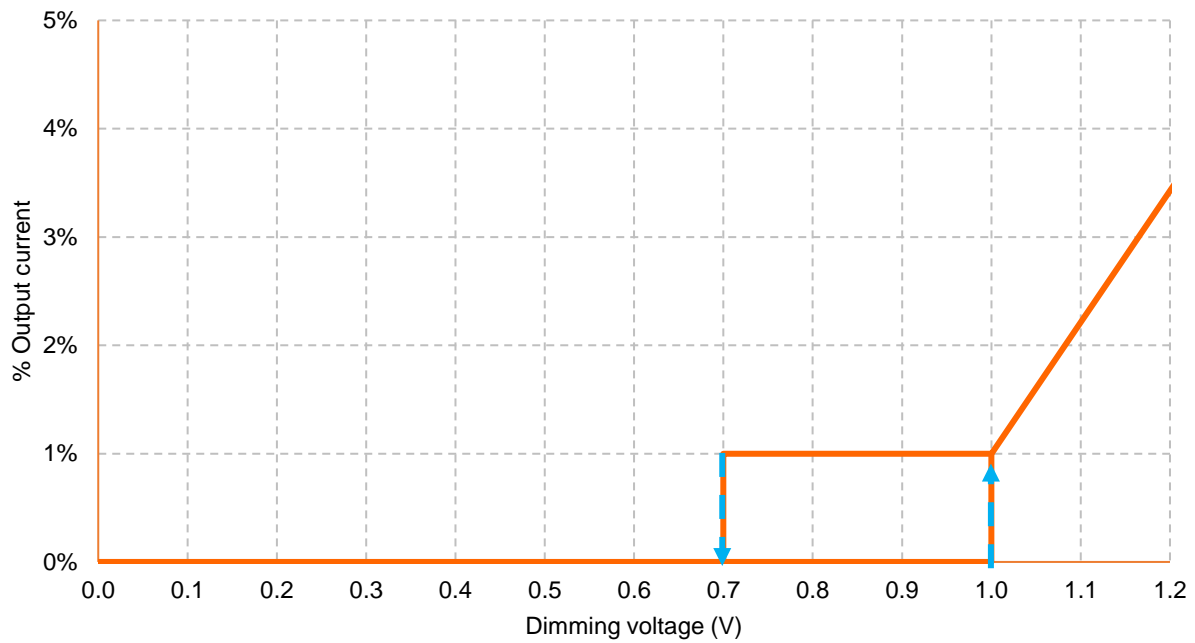


Note: meeting DLC requirements requires minimum 50% loading.

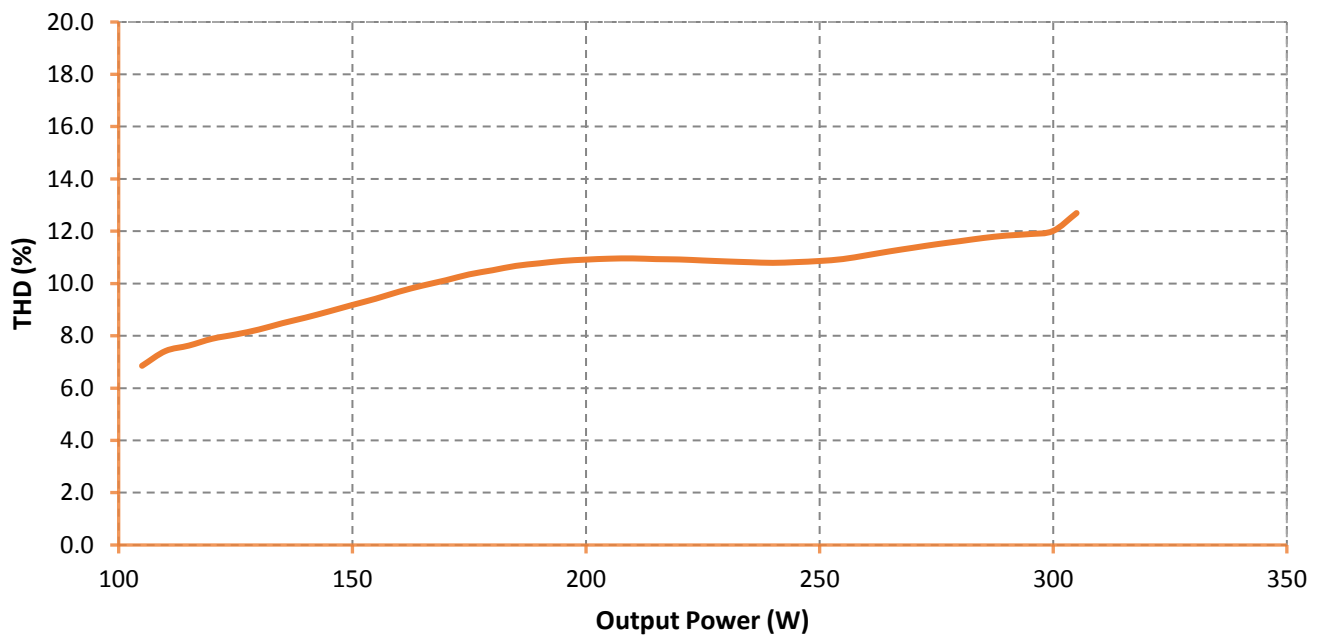
Dimming Curve



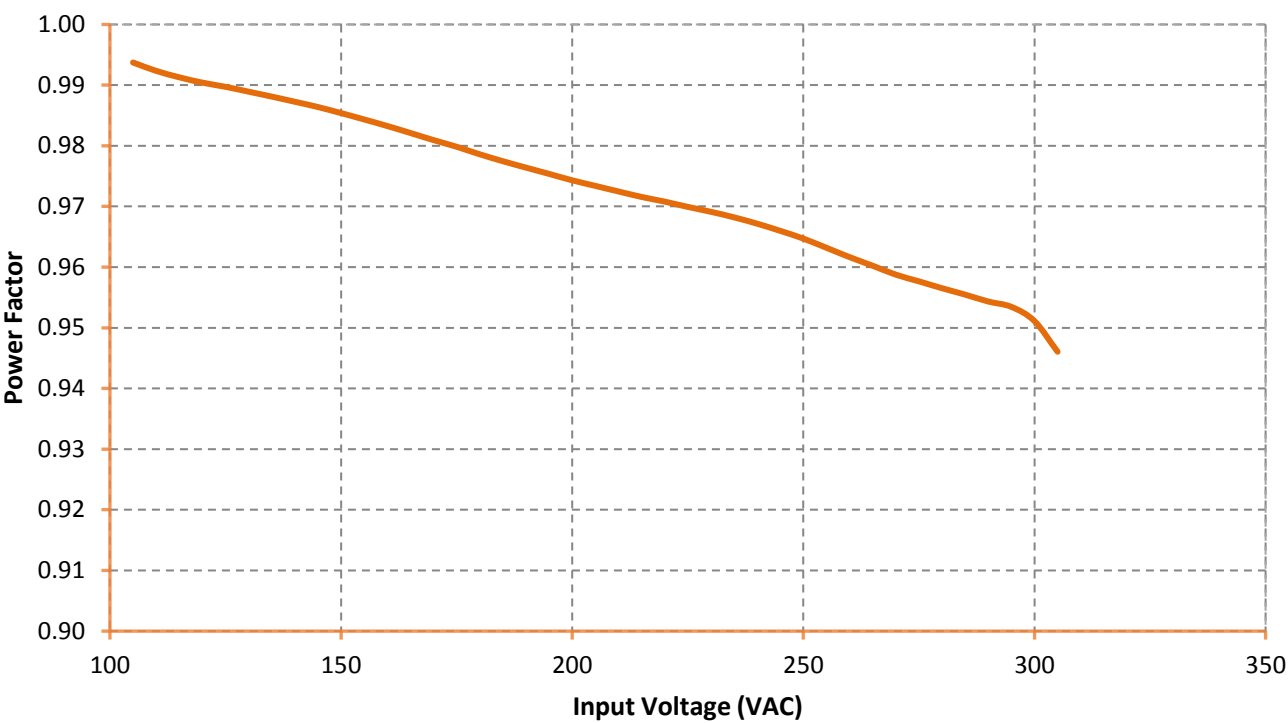
## Dim-To-Off Hysteresis



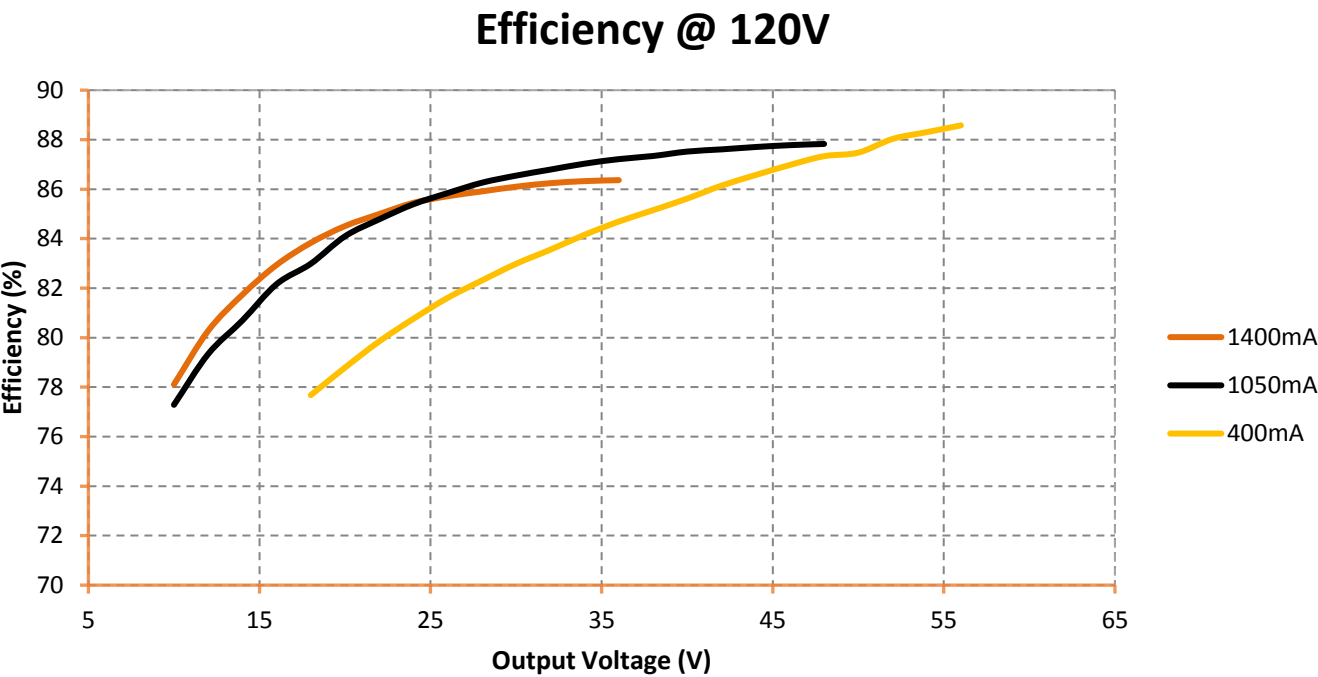
## THD vs. Input Voltage (Full Load)



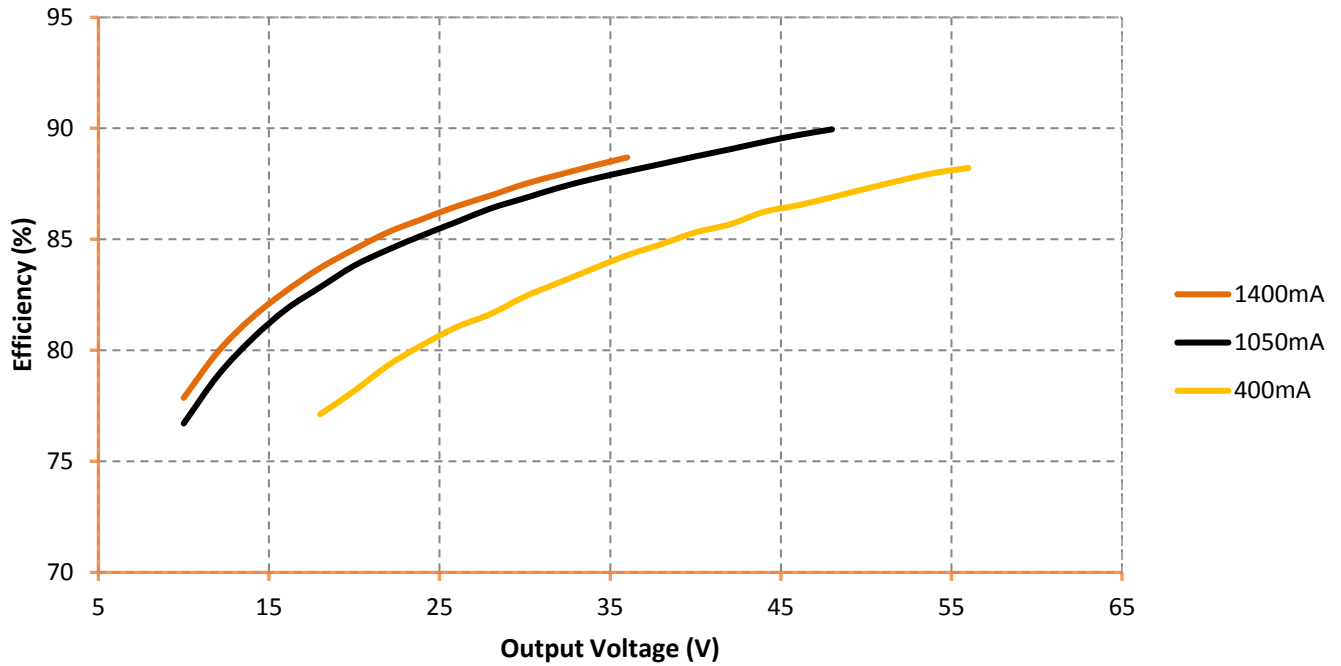
Power Factor vs. Input Voltage (Full Load)



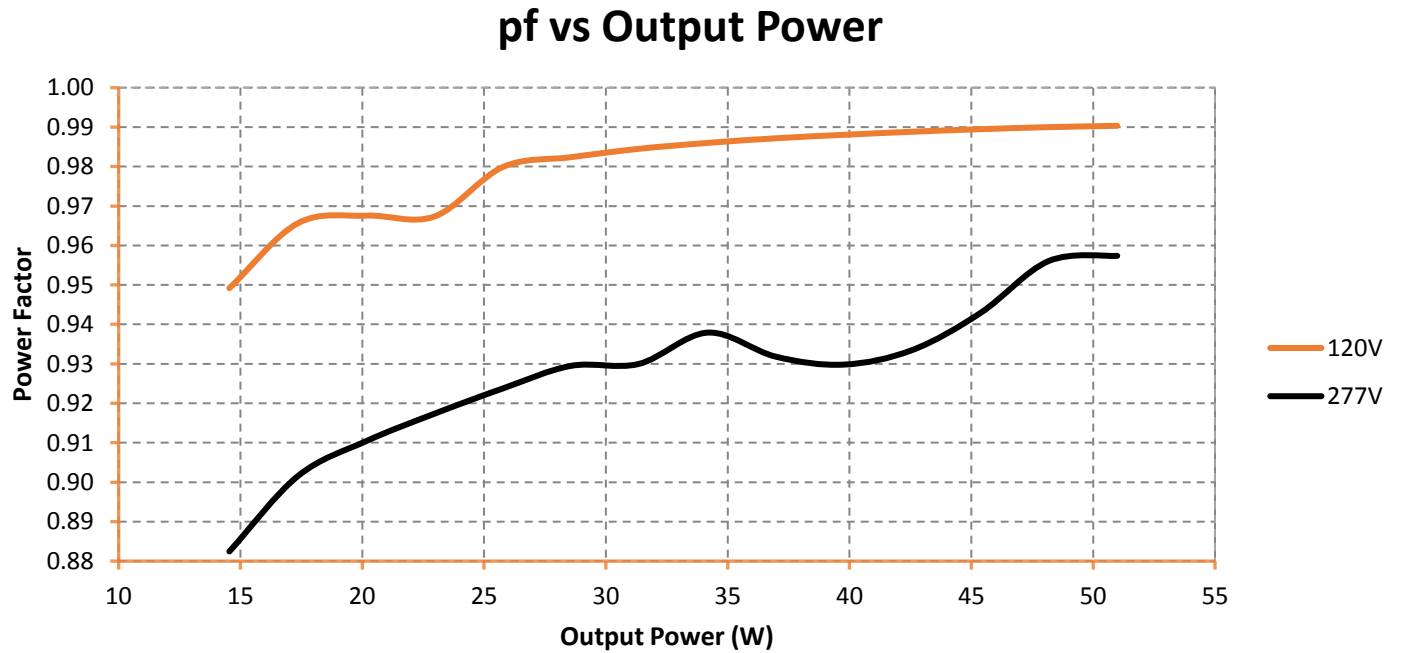
Efficiency vs. Output Voltage



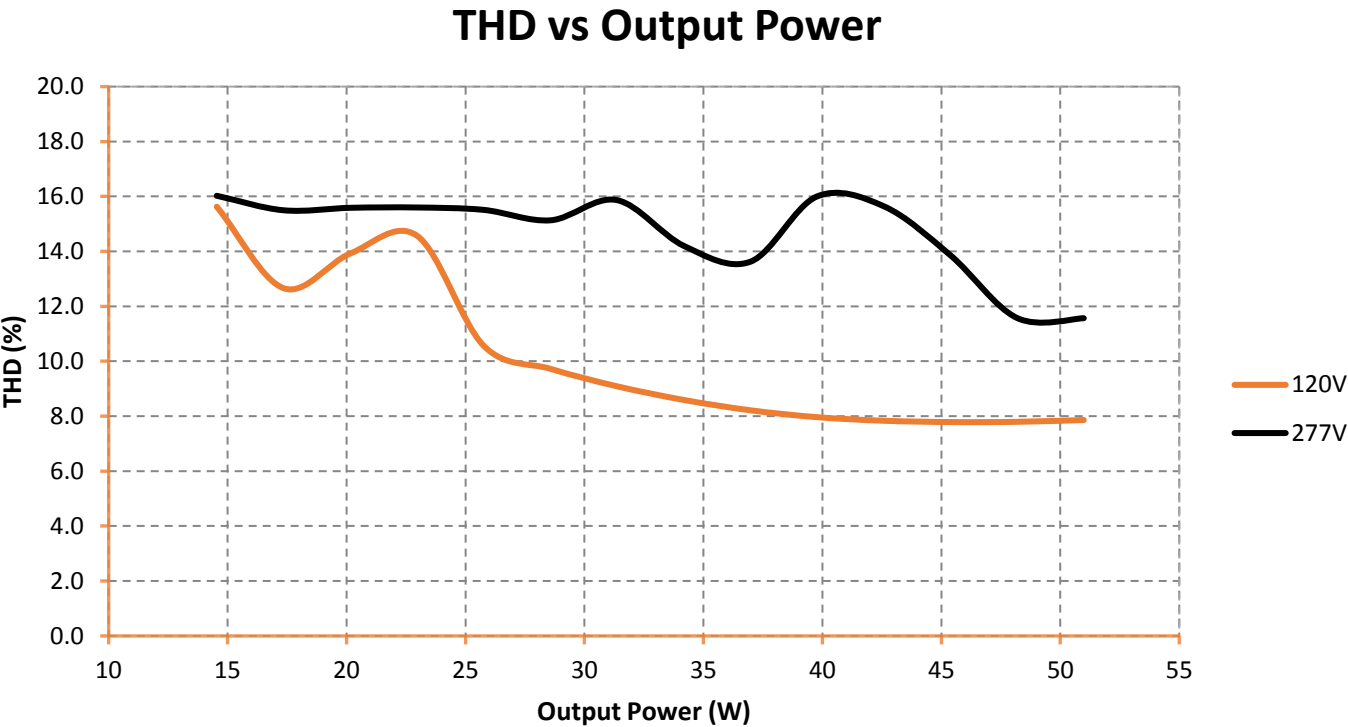
## Efficiency @ 277V



## Power Factor vs Load

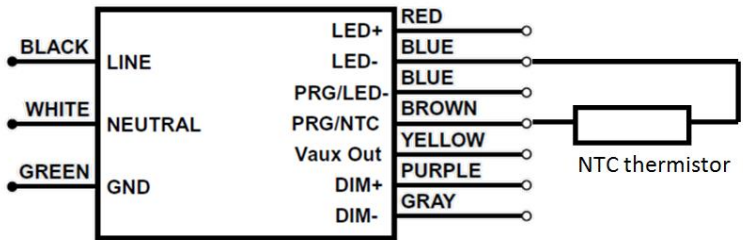


THD vs Load



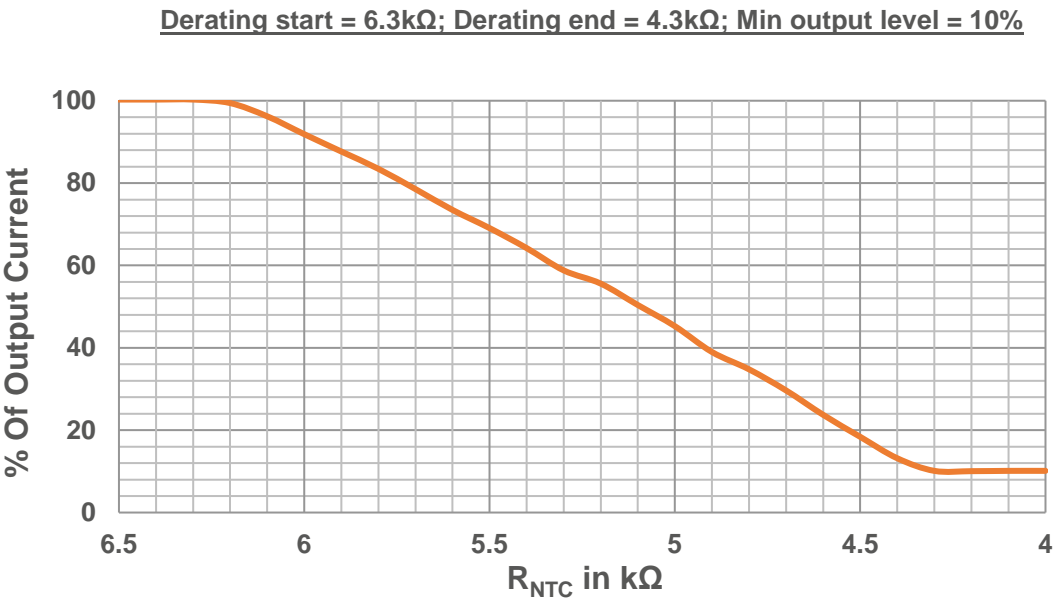
LED Thermal Protection (NTC) Characteristic

The LED thermal protection feature of the OTi 50W 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 derating limits can be programmed using the OT Programmer



To learn more about this feature, please refer to the technical application guide for [LED Thermal Protection](#) (ECS304).

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**Constant lumen Maintenance**

The Constant Lumen Maintenance feature of the OTi 50W 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 LEDs 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 Help section of the OT Programmer software

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**End-of-Life Indicator**

The End-of-Life indicator 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.

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**Inrush Characteristics**

Vin (V)	Ipeak (A)	T(@ 10% of Ipeak)
120	1.33	57 μs
277	2.66	46 μs

*Complies with NEMA 410 inrush current requirements*



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## Dimmer/Sensor Compatibility

Manufacturer	Part Number
OSRAM	ZBHA-CLM DIM (NAED: 45678) EN-CLM-PIR-DD-ZB (NAED: 58286)
Encelium EMS	EN-LCM-1R10V-GB2-BK EN-LCM-1R10V-GB2-BK/DR EN-ALC-1R10V-GB2-BK EN-ALC-1R10V-GB2-BK-DR
Leviton	IP710-DLX
Lutron	DVTV-XX
Wattstopper	ADF-120277
Synergy lighting Controls	ISD BC
Wattstopper	FD-301
Wattstopper	FSP-202
Enlighted Inc.	SU-3E-00 (Enlighted Compact Sensor)
Magnum Energy Solutions	Mx-OPUS-ML10V
Magnum Energy Solutions	Mx-USR-L1

**Note:** Please reference the dimmer manufacturer's instructions for installation. The absence of a dimmer from this chart does not necessarily imply incompatibility. Please contact your OSRAM Digital Lighting Systems representative for compatibility queries.

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## 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/optotronic](http://www.osram.us/optotronic)

OSRAM SYLVANIA Inc.  
200 Ballardvale Street  
Wilmington, MA 01887 USA  
877-636-5267  
[www.osram.us/ds](http://www.osram.us/ds)

ECS289 07-19

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