

Light is OSRAM

# OPTOTRONIC® Tunable White LED Power Supply

## OTi50W/120-277/1A4/2CH TW L – Technical Specifications



### General Information

Item Number	58287
Type	Constant Current, Class2
Output Power	50W (per channel and combined)
Programming Tool	51645
Software	<a href="#">Download</a>

### Environmental Specifications

Ambient Operating Temperature	-30°C to 40°C
Case Temperature (Tc)	80°C (max)*
Max. Storage Temp.	70°C
Max. Relative Humidity (%)	95% non-condensing
Transient Protection	NEMA SSL-1 2.5kV
UL Environmental Rating	Dry & Damp
UL File number	E320395
EMI Compliance	FCC Part 15 Class A
Sound Rating	Class A

\*5 year warranty at Tc = 75C



### 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)	0.55	0.25A
THD @ Full load	<20%	<20%
Power Factor @ Full load	>0.9	>0.9
Efficiency @ Full load	≥84%	≥85%
Inrush Current (A <sub>pk</sub> )	60 @ 131µs	100 @ 138µs

#### Output

Output Current (mA)	400 - 1400 mA (Default: 400 mA/channel)
Output Voltage (VDC)	20-48VDC
Output Ripple Current	<25%
Max. Output Power (W)	50W(per channel and combined)
LED Power-Up Time	< 750ms
Load Regulation	< 5%
Line Regulation	< 5%
Over Voltage Protection	Yes, non-latching
Over Load Protection	Power fold back @ 52W
Output Short-Circuit	Yes, non-latching
Over Temperature Protection	Yes, Foldback at 105°C, Auto Recovery

#### Dimming

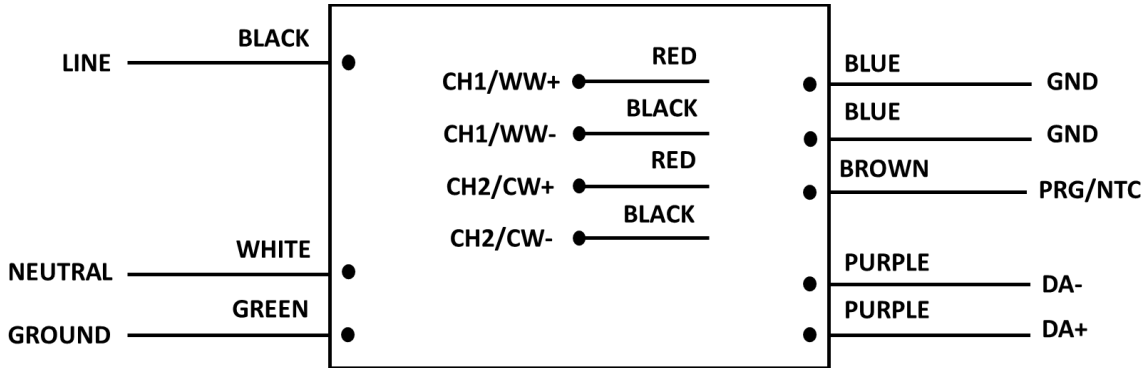
Dimming Control	DALI 2.0
Dimming Range	1-100%
Dimming Type	Analog, Log and Linear

#### LED thermal protection (NTC)

NTC value active range	≤ 25kΩ
Output level minimum	User defined

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## Wiring Diagram



**Note:** Maximum suggested remote mounting distance is 16 feet.

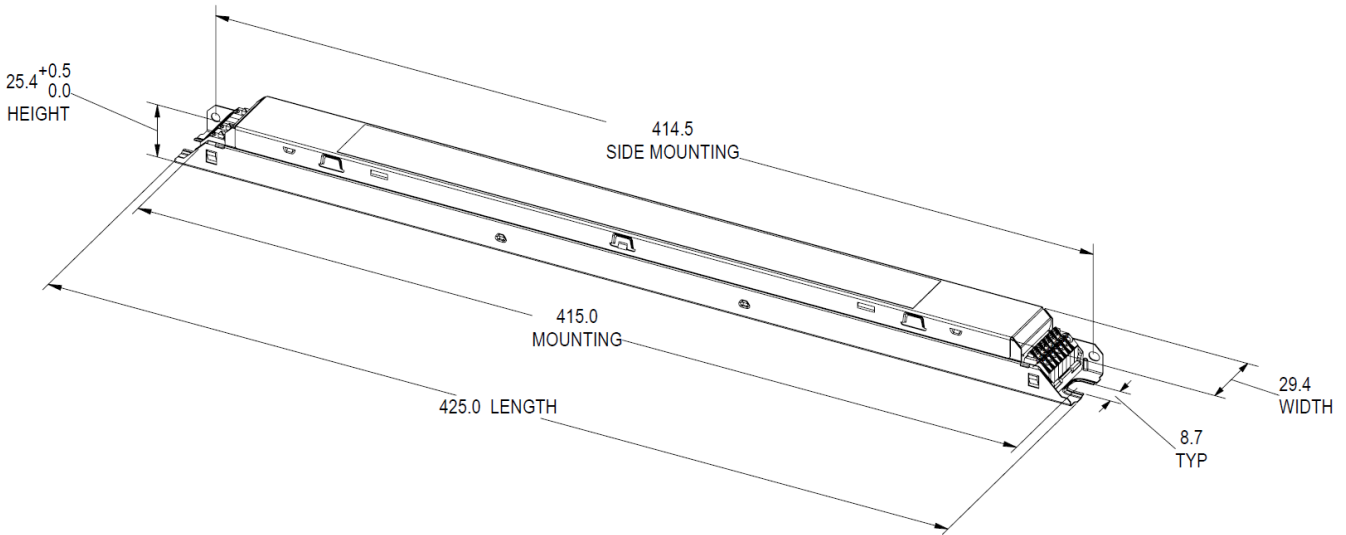
## Ordering Guide

NAED	Ordering Description
58287	OTi50W/120-277/1A4/2CH TW L

## Key Application Notes

- The default dimming mode is DALI (DEXAL power off). To power up the Tunable White Wallstation (NAED: 58289) from the driver, select DEXAL mode in OT Programmer
- DEXAL port is polarity sensitive

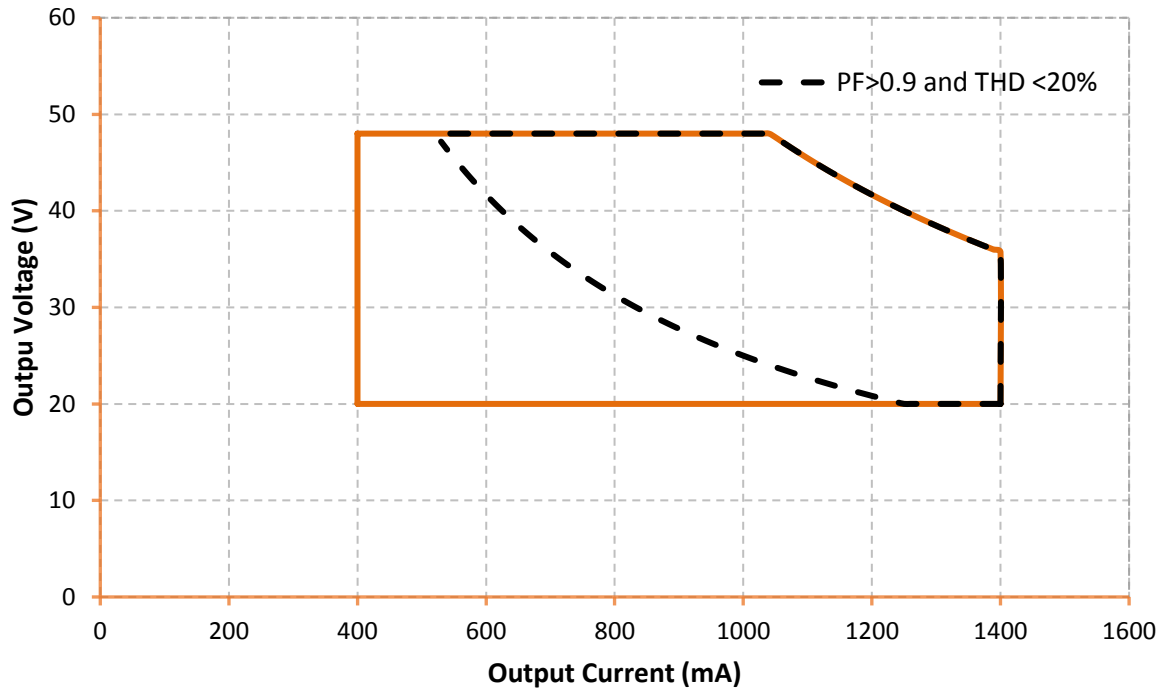
## Mechanical Diagram



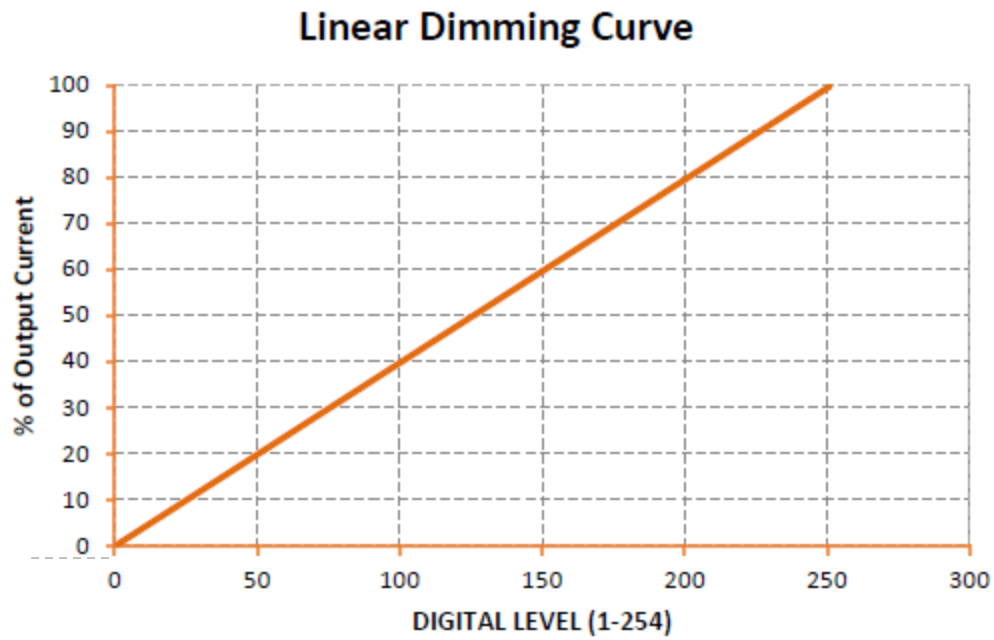
## Mechanical Specifications

Length	16.73" (425mm)
Width	1.15" (29.4mm)
Height	1.0" (25.4mm)
Mounting Length	16.34" (415mm)

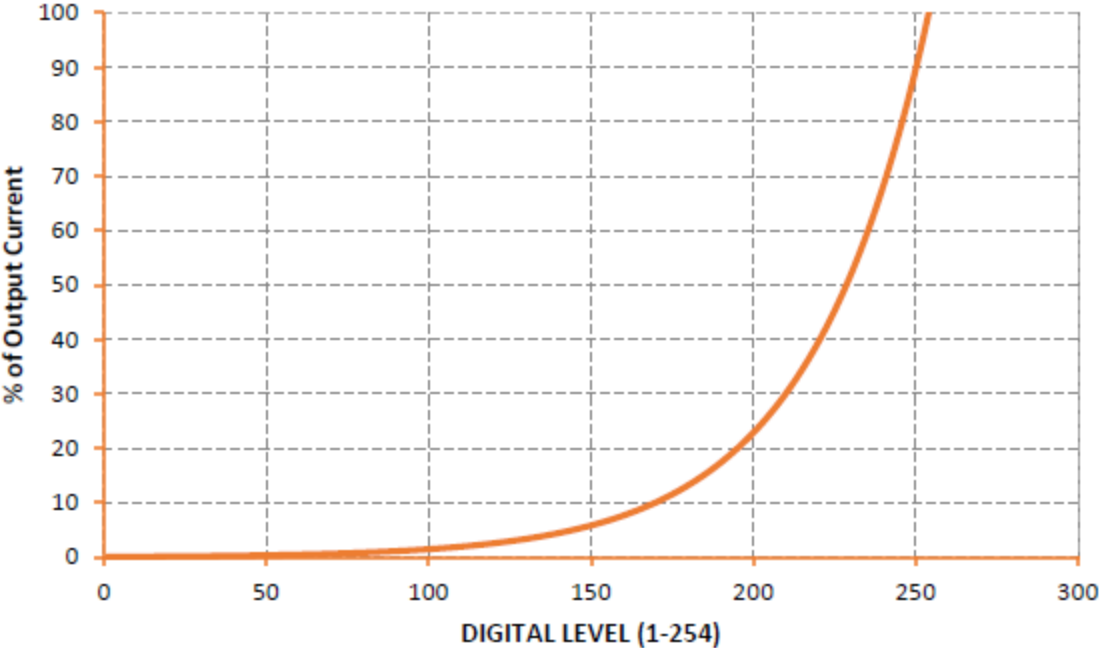
Operating Curve



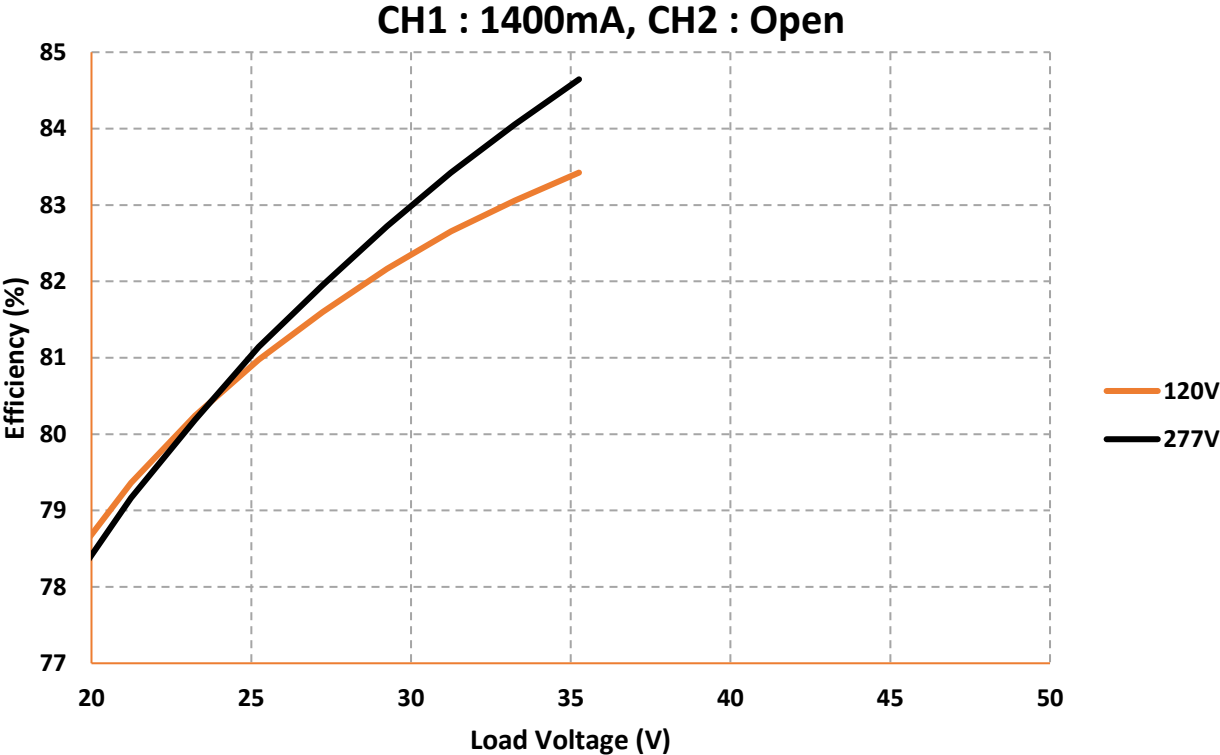
Dimming Curve

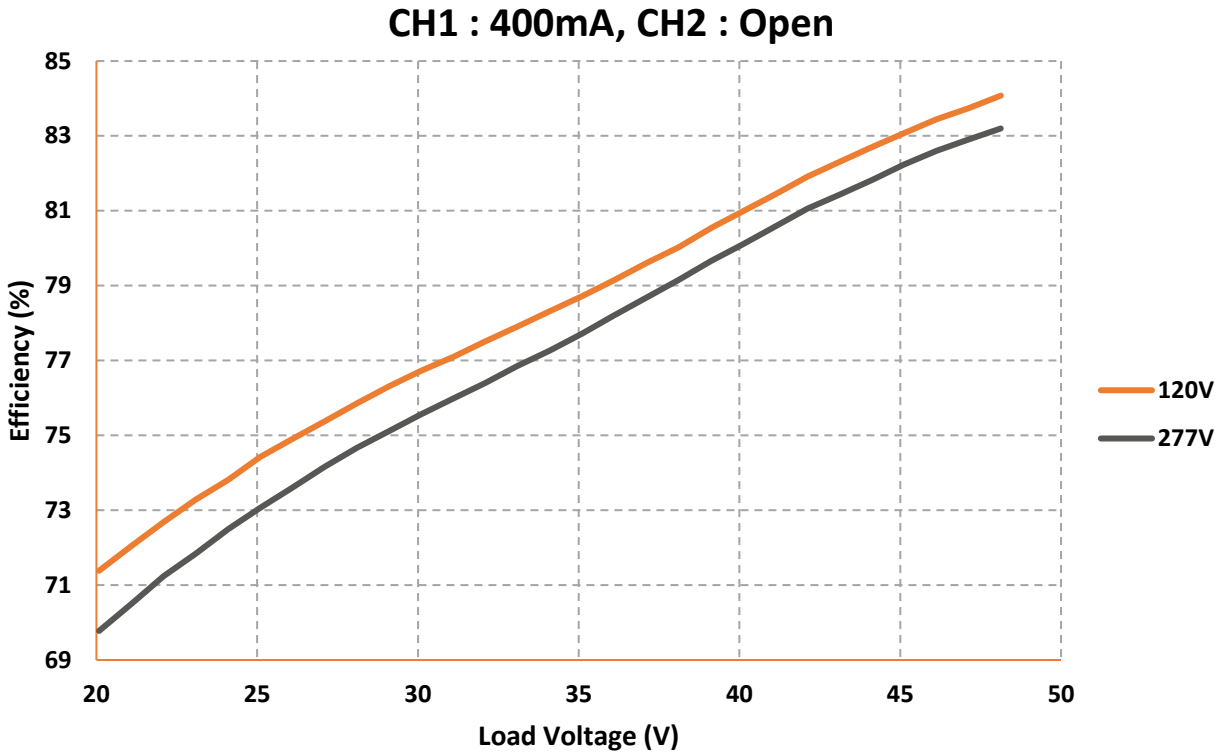


### Logarithmic Dimming Curve

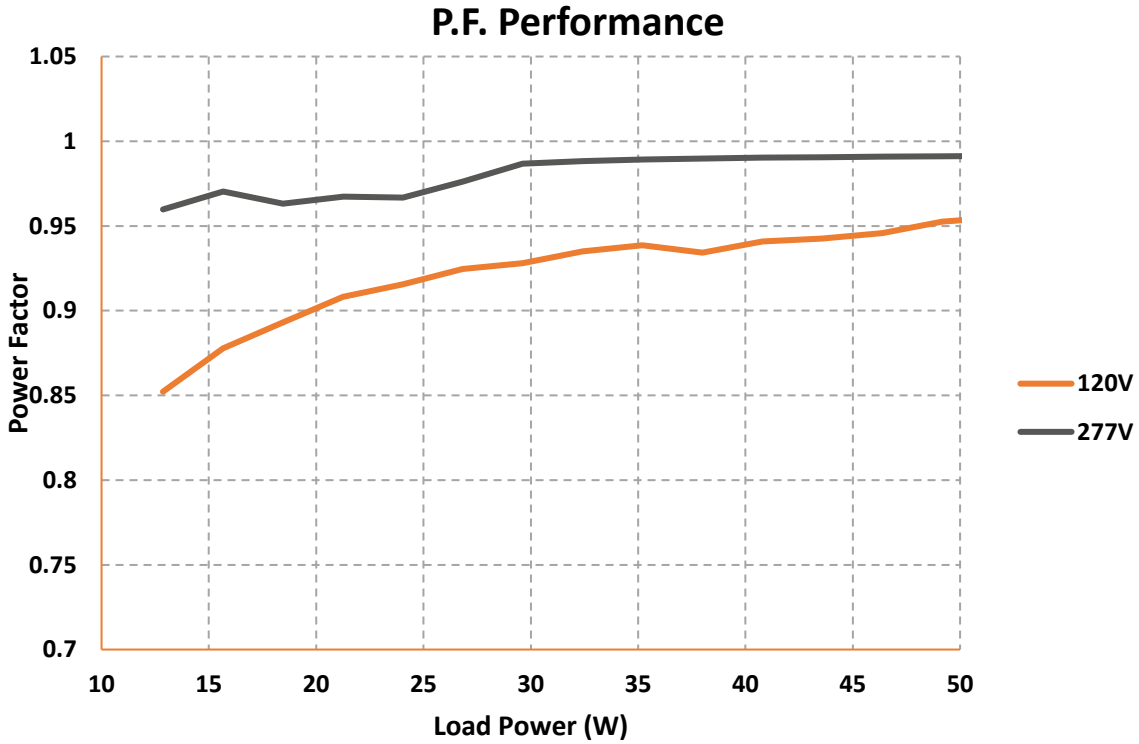


### Efficiency vs. Output Voltage

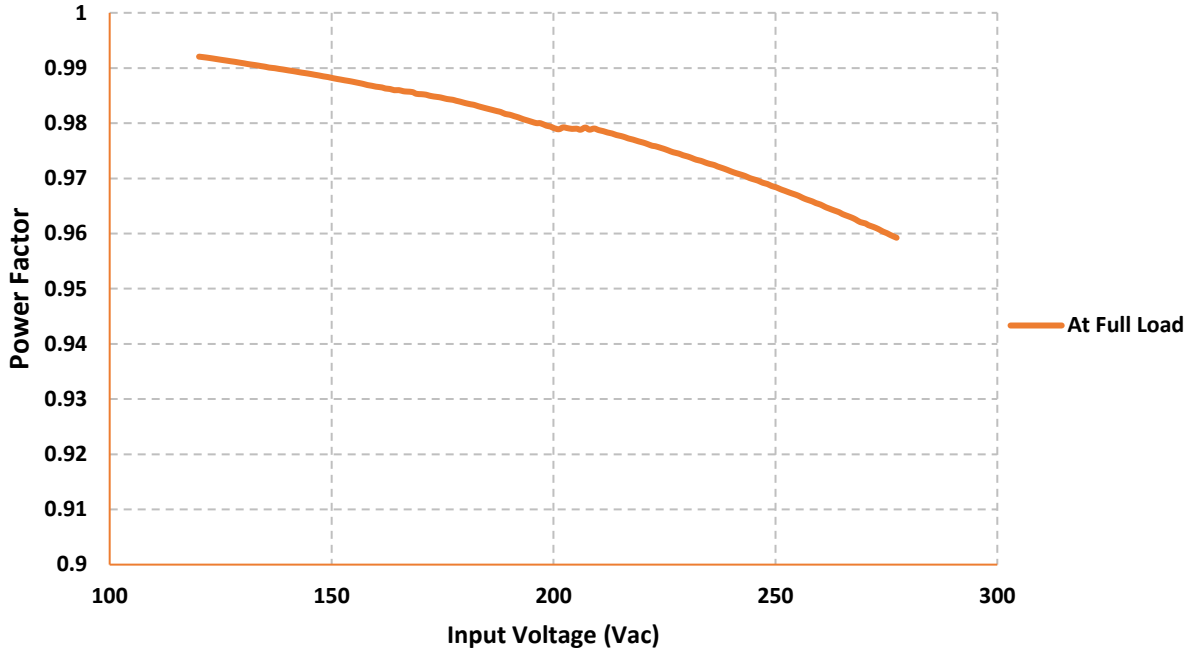




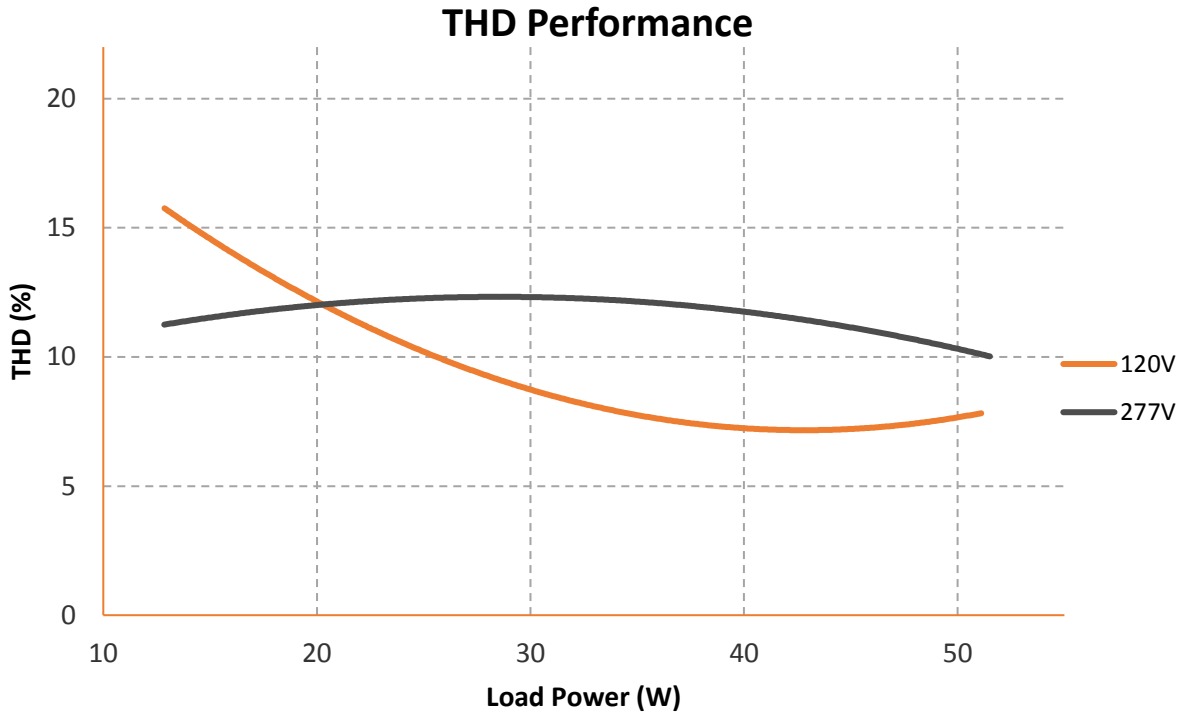
Power Factor Performance



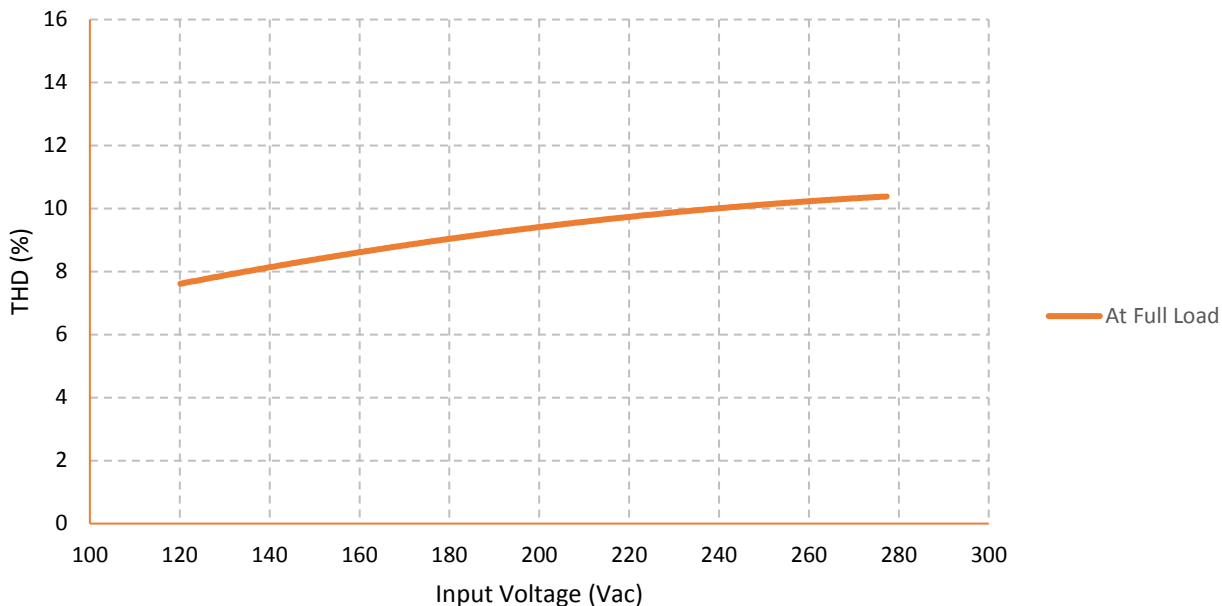
### Pf vs Input Voltage



### THD Performance



### THD vs Input Voltage



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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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#### 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 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.

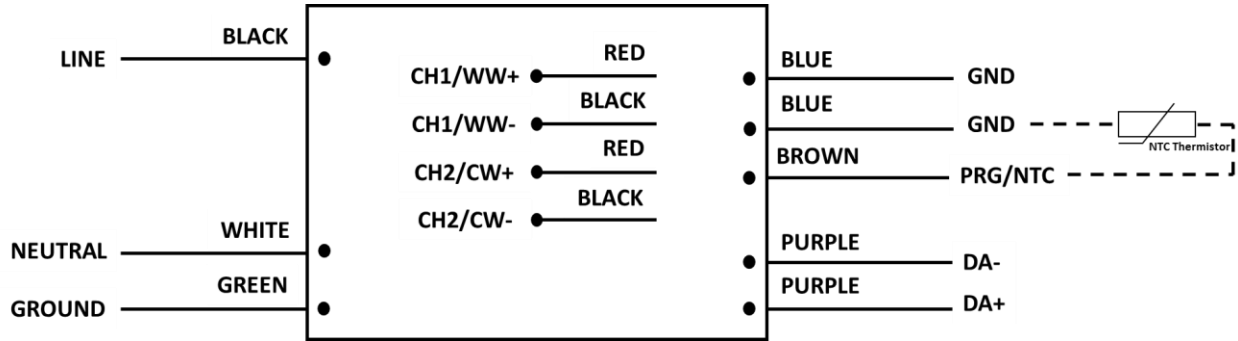
**Note:** A detailed step-by-step instructions are outlined in the Help section of the OT Programmer software.

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#### LED Thermal Protection (NTC) Characteristic

The LED thermal protection feature of the OTi50W 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.

## OTi50W/120-277/1A4/2CH TW L – Technical Specifications



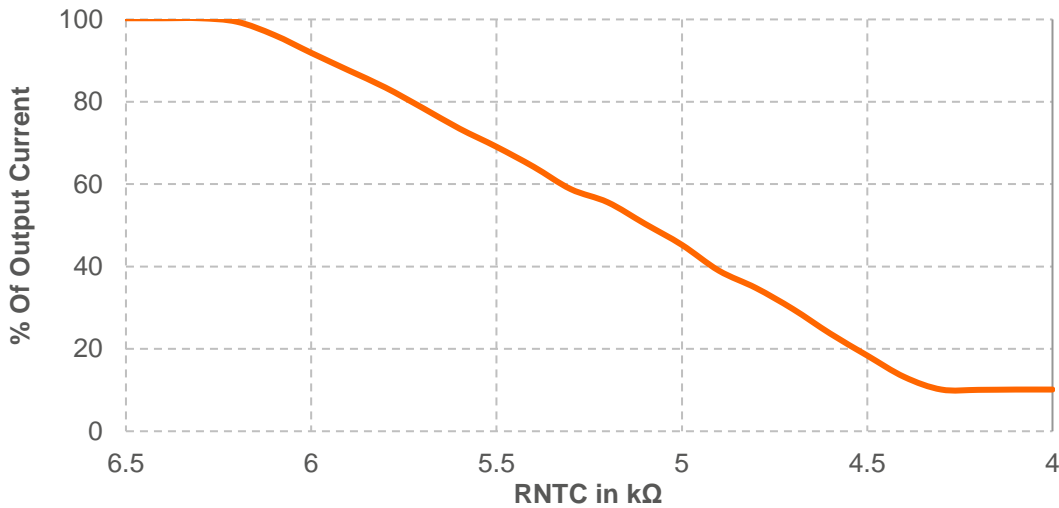
In the end application, care must be taken to place the NTC thermistor close to the hottest spot on the LED module. If LED thermal protection is not required the NTC port on the LED power supply connector can be left open.

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)

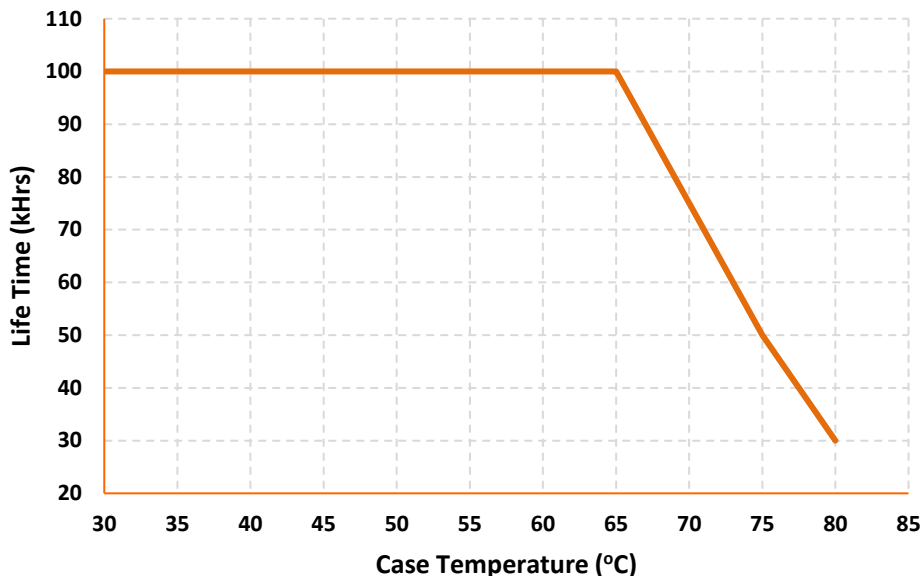
**Note:** Graphs for reference. The de-rating limits can be programmed using the OT Programmer

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





**Lifetime vs TCase**



**Inrush Characteristics**

Vin (V)	Ipeak (A)	T(@ 50% of Ipeak)
120	60.0	131 μs
277	100.0	138 μs

**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-americas.com/optotronic](http://www.osram-americas.com/optotronic)

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