

OPTOTRONIC® LED Power Supply OTi 85W G2 Programmable - Technical Specifications



ELECTRICAL SPECIFICATIONS

Input

Input Voltage (VAC)	120V-277V (+/- 10%)	
Frequency Range (Hz)	50 – 60 Hz (+/- 10%)	
	120V	277V
Input Current (A)	0.83	0.36
THD @ Full Load	<10%	<20%
Power Factor @ Full Load	>0.9	>0.9
Efficiency @ Full Load	>87%	>89%
Inrush Current (A _{pk} , T@50% of A _{pk})	37.4, 150µs	84.7, 160µs

Output

Output Current (mA)	700-2300mA (1mA step)
Output Voltage (VDC)	10-55VDC
Output Ripple Current	<5% @ 2300mA
Max. Output power (W)	85W
LED Power Up Time	<1sec
Load Regulation	<3%
Line Regulation	<3%
Over Voltage Protection	Yes, non-latching
Over Load Protection	Yes, non-latching
Output Short-Circuit Protection	Yes, non-latching
Over Temp. Protection	Foldback to 50% at 105°C

Auxiliary Output (For AUX models only)

Output Voltage (VDC)	12/20/24V ¹ (configurable)
Output Current (mA)	40
Voltage Regulation	±10%

LED Thermal Protection (NTC)

NTC Value Active Range	≤25kΩ
Output level minimum	User defined

GENERAL INFORMATION

Type	Constant Current, Class 2
Output Power	85W (Max.)
Programming Tool	51645 & 51647/51648
Software	Download
Programmable Features	Output current Dimming level Dim-to-off, Soft start LED thermal protection Auxiliary output voltage Constant lumen output End-of-life indicator

DIMMING SPECIFICATIONS

Dimming Control	0 – 10V (Isolated)
Dimming Range	10-100%, 1-100%
Dimming Type	Current Reduction
Dimming Input Isolation	2.5kV
Withstand Voltage	277V _{rms}
Source/Sink Current	0.2mA max
Dim-to-Off Threshold	0.8V
Standby Power	2.9W(120V); 2.5W(277V)

ENVIRONMENTAL SPECIFICATIONS

Ambient Range	-40°C to 55°C
Case Temperature (T _c)	85°C (50kHrs) ³ 90°C max. (30kHrs)
Max. Storage Temp.	70°C
Max. Relative Humidity	85% non-condensing
Transient Protection	NEMA SSL 1-2010 (2.5kV) ANSI C82.77-5-2015(6kV) ²
EFT	IEC61000-4-4, Level 3
UL Rating	Dry & Damp
UL File Number	E320395
EMI Compliance	FCC Part 15 Class A
Sound Rating	Class A

1 - Default AUX voltage is 12V

2 - 6kV transient protection for high-bay (HB) models

3 - Warranty applicable at 85°C



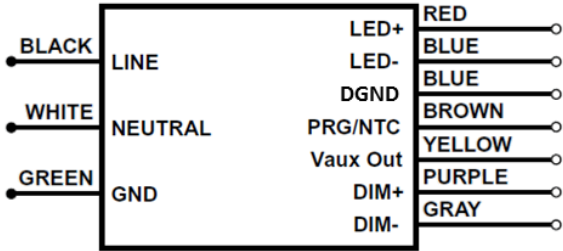
Ordering Guide

NAED	Ordering Description	NAED	Ordering Description
57420	OTi 85/120-277/2A3 DIM-1 L	57424	OTi 85/120-277/2A3 DIM-1 L HB
57421	OTi 85/120-277/2A3 DIM-1 L AUX	57425	OTi 85/120-277/2A3 DIM-1 L HB AUX
57422	OTi 85/120-277/2A3 DIM L	57426	OTi 85/120-277/2A3 DIM L HB
57423	OTi 85/120-277/2A3 DIM L AUX	57427	OTi 85/120-277/2A3 DIM L HB AUX

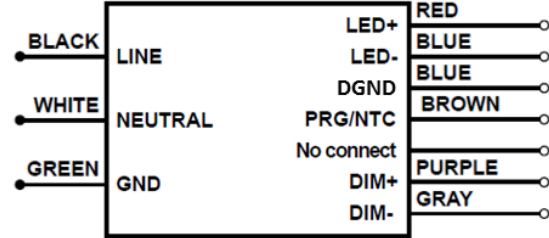
HB refers to High-bay models that have 6kV transient protection

WIRING DIAGRAM

Wiring diagram for AUX output models



Wiring diagram for non-AUX output models



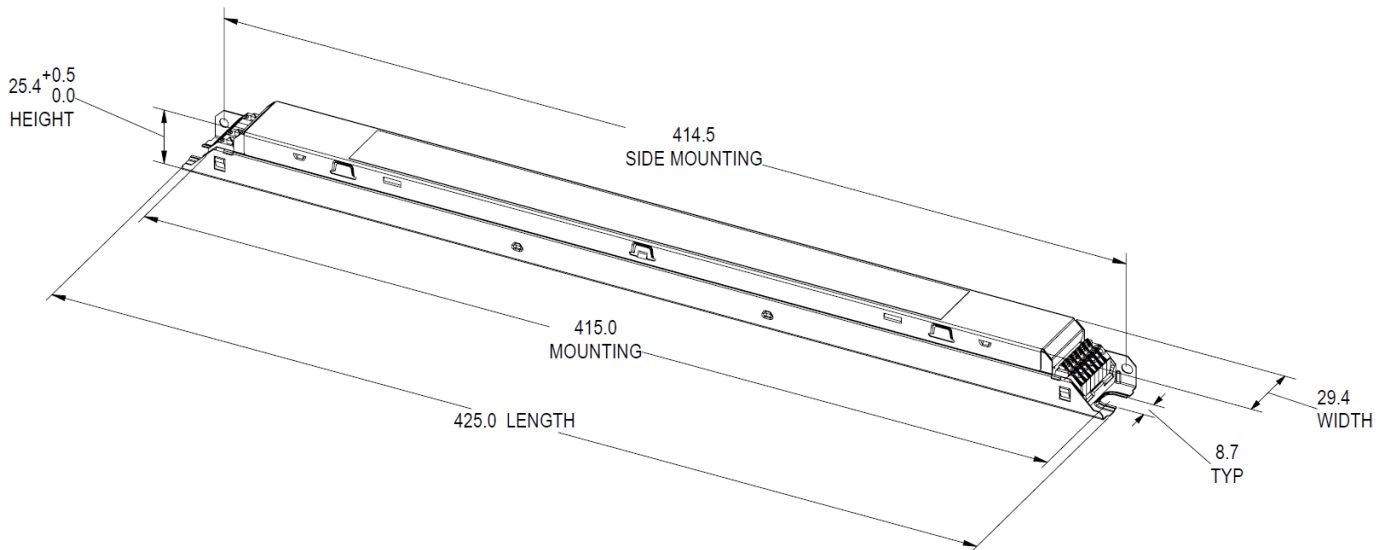
Note 1: The Vaux Out (YELLOW) and DGND- (BLUE) will provide the DC Auxiliary output. Yellow is "+ve" polarity and DGND is "-ve" polarity.

Note 2: 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.

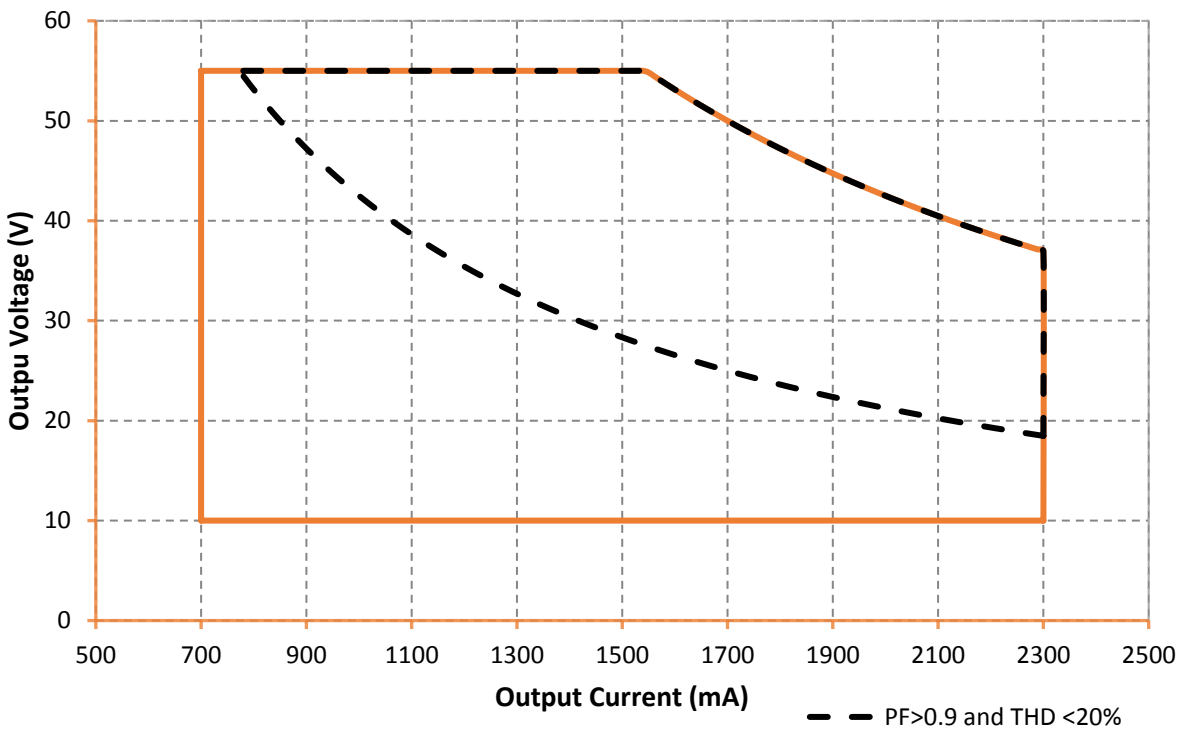
MECHANICAL DIAGRAM



MECHANICAL SPECIFICATIONS

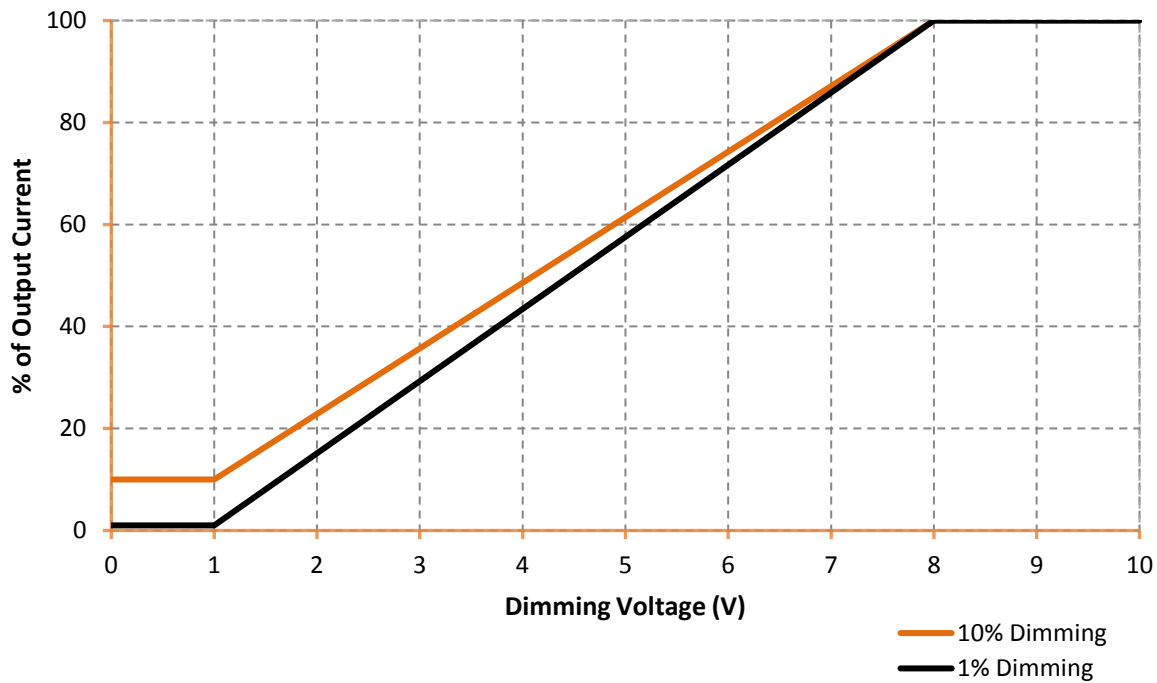
Length	16.73" (425mm)
Width	1.15" (29.4mm)
Height	1.0" (25.4mm)
Mounting Length	16.34" (415mm)

OPERATING RANGE

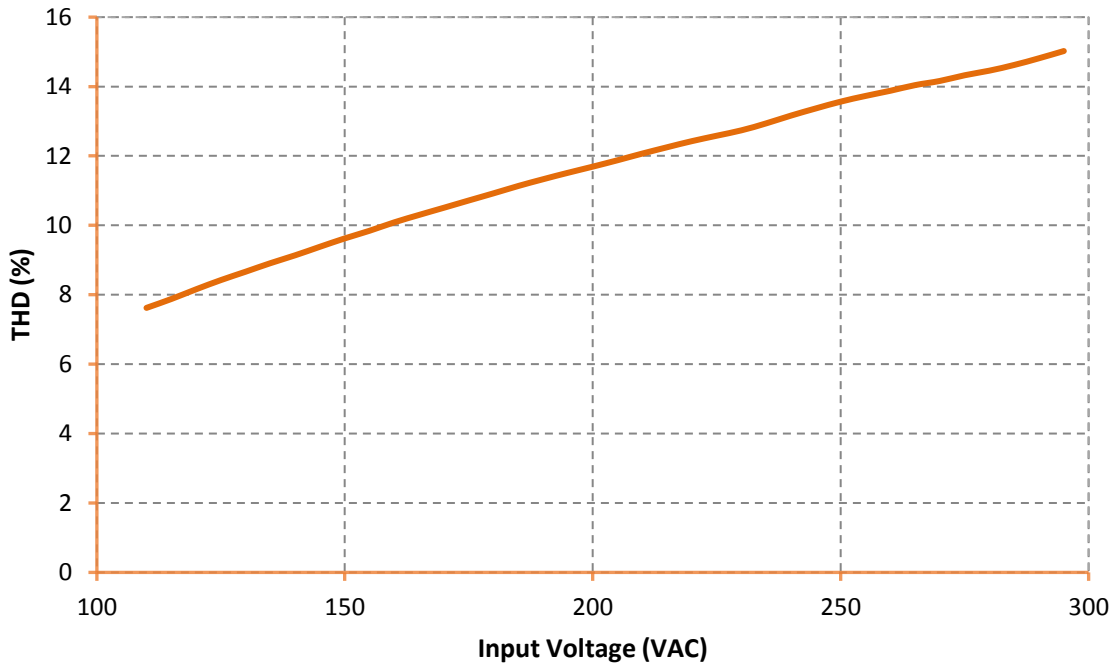


Note: Meeting DLC requirements requires minimum 50% loading

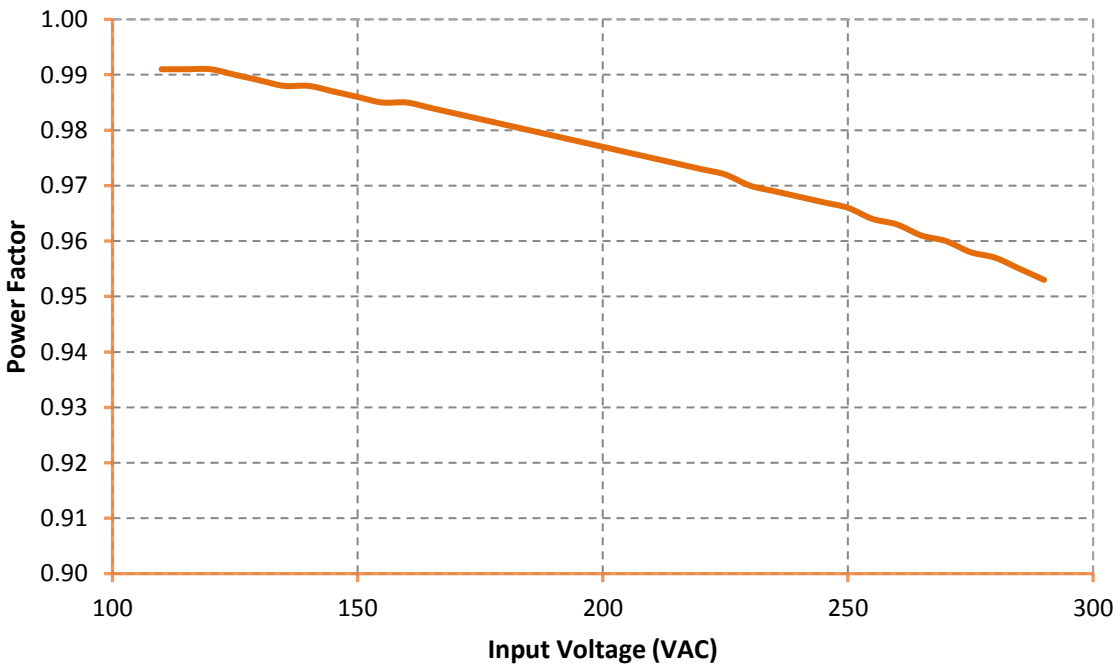
DIMMING CURVE



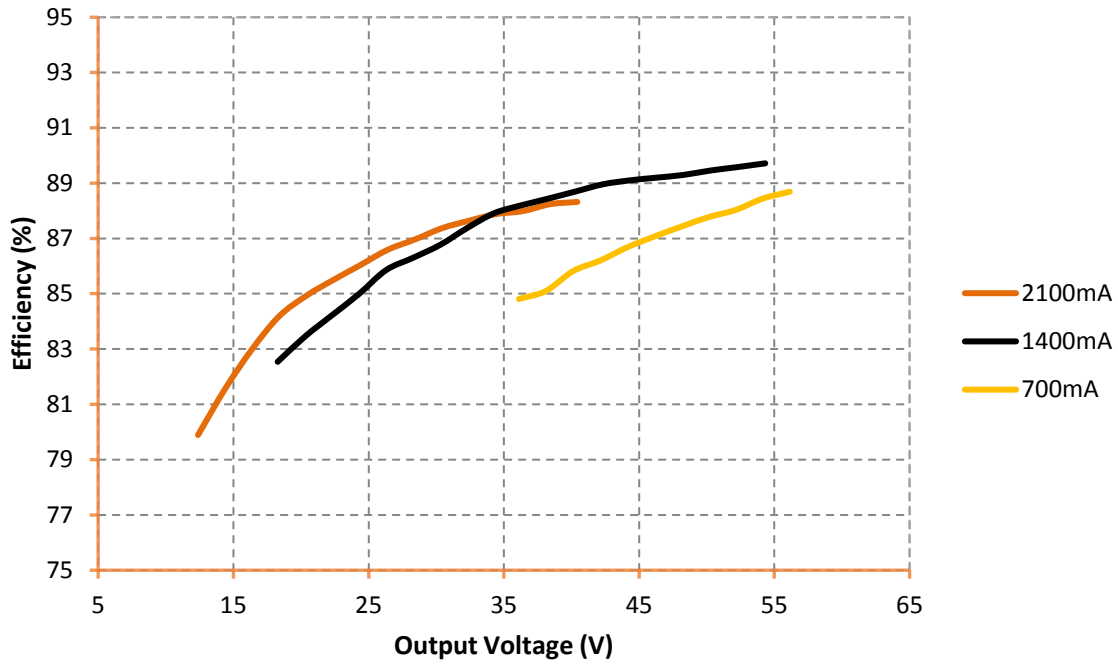
THD VS INPUT VOLTAGE (FULL LOAD)



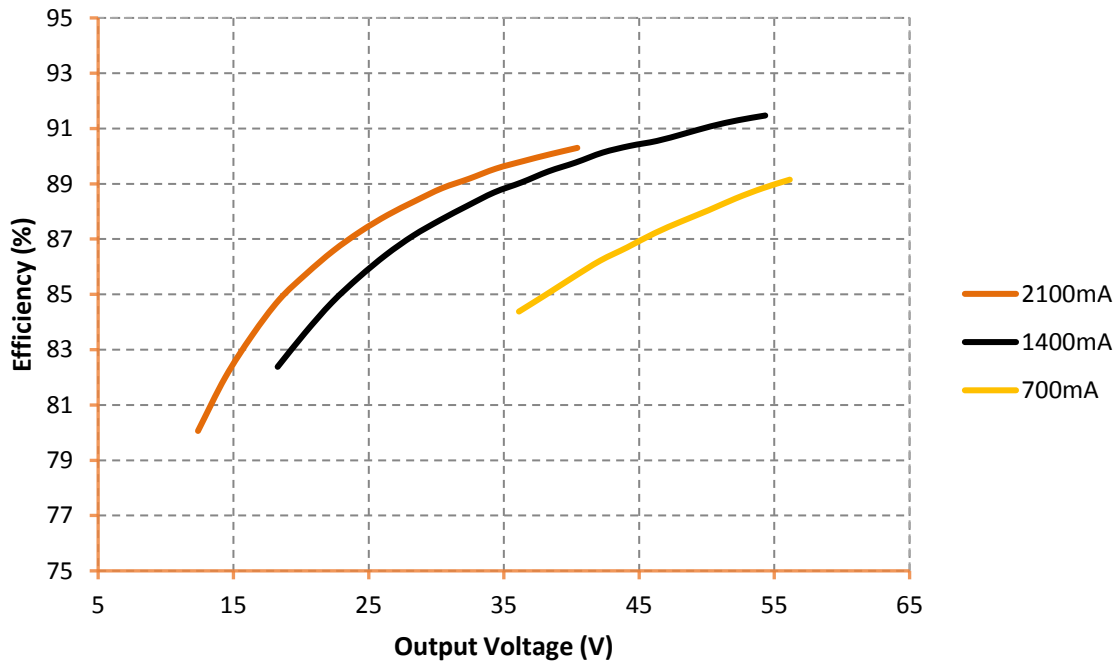
POWER FACTOR VS INPUT VOLTAGE (FULL LOAD)



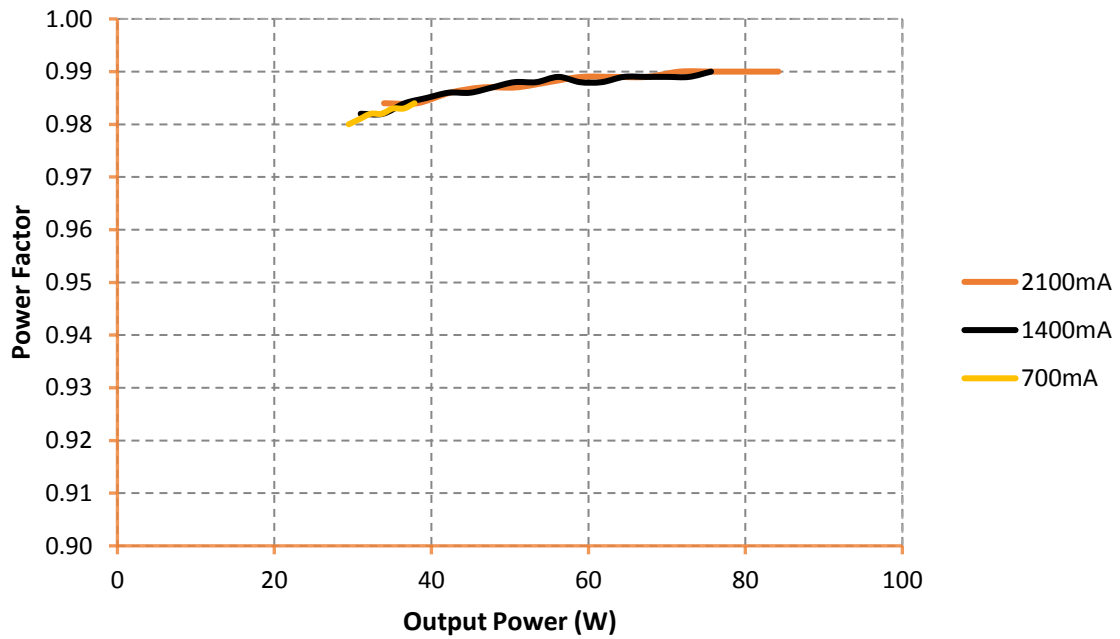
Efficiency @ 120V



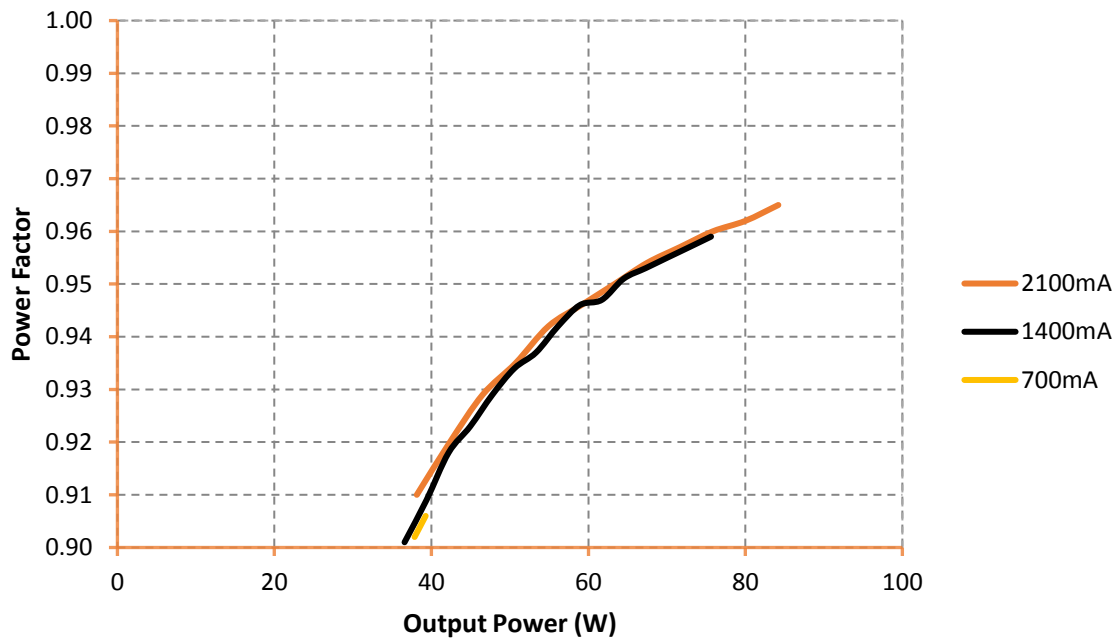
Efficiency @ 277V



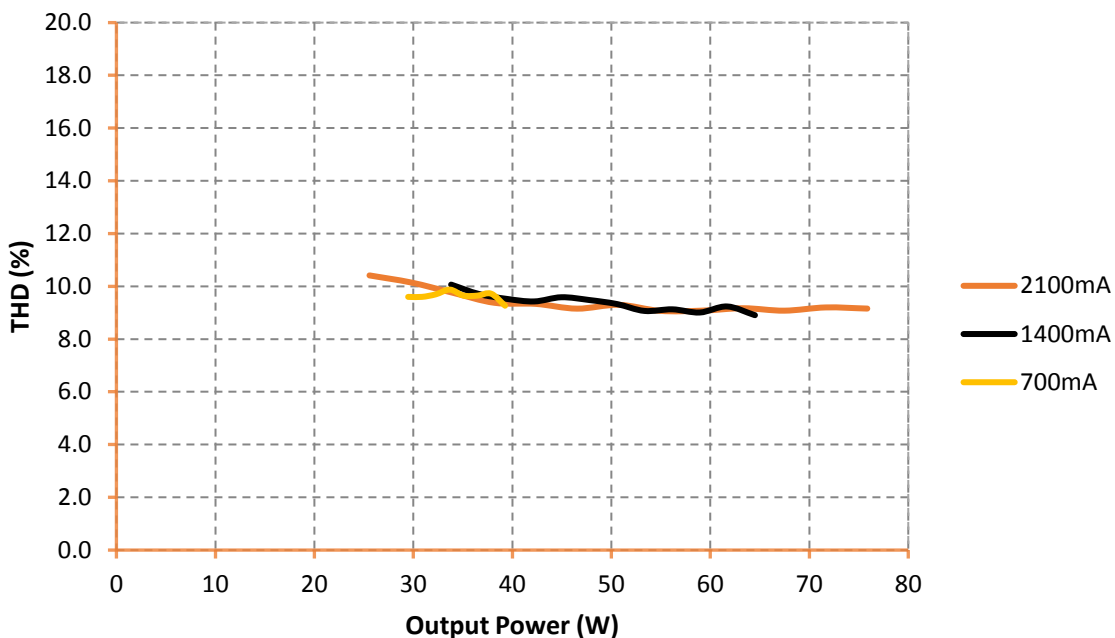
Power Factor vs Output Power (120V)



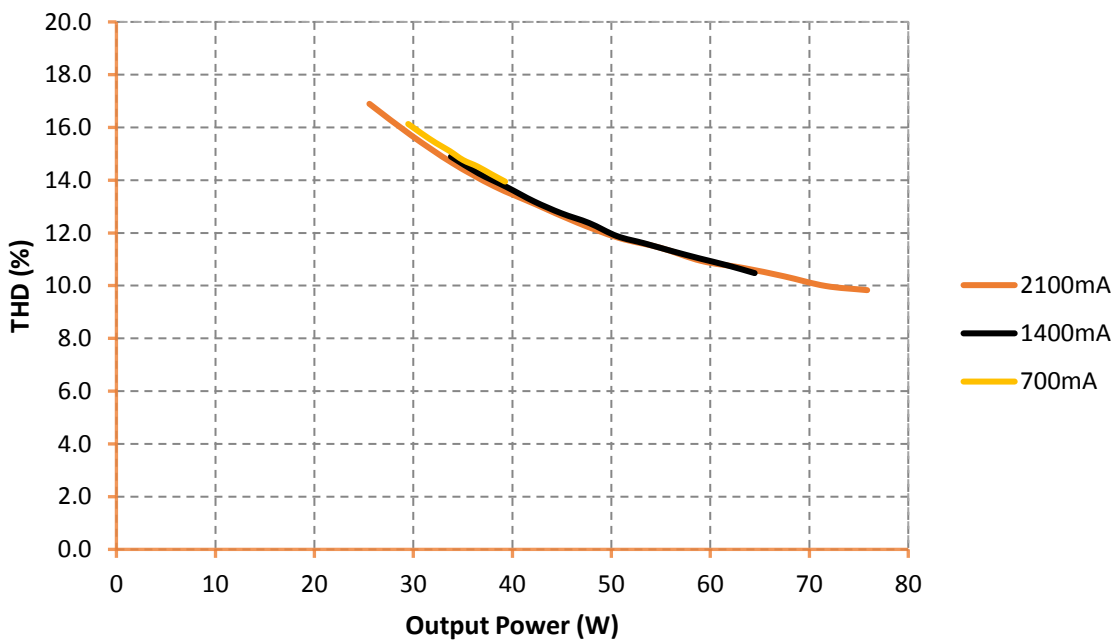
Power Factor vs Output Power (277V)



THD vs Output Power (120V)

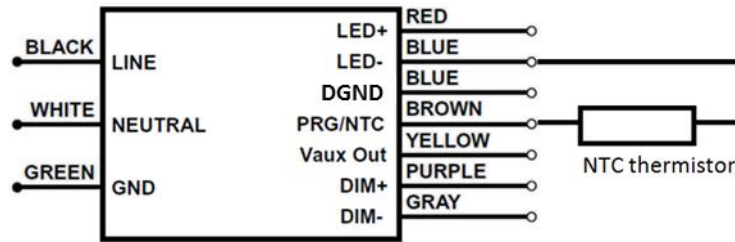


THD vs Output Power (277V)



LED THERMAL PROTECTION (NTC) CHARACTERISTIC

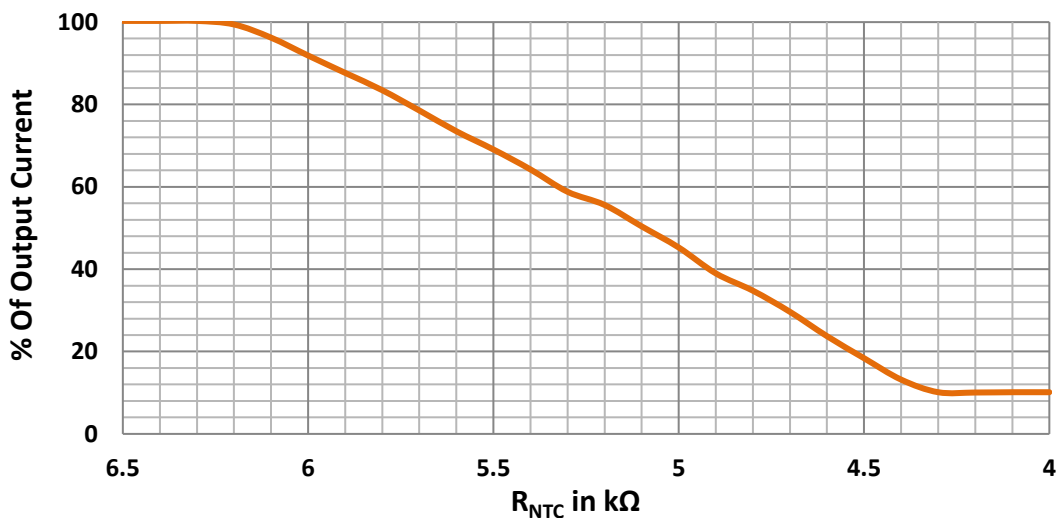
The LED thermal protection feature of the OTi 85W helps reduce the temperature of the LED module by reducing the output current in case of abnormal temperature conditions. To use this feature, a third party NTC thermistor should be connected to the LED power supply as shown in the wiring diagram below.



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)**

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



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

CONSTANT LUMEN MAINTENANCE

The Constant Lumen Maintenance feature of the OTi 85W 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 4: A detailed step-by-step instructions are outlined in the Help section of the OT Programmer software.

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.

INRUSH CHARACTERISTICS

Vin (V)	Ipeak (A)	T (@ 50% of Ipeak)
120	37.4	150µs
277	84.7	160µs

Complies to NEMA 410 inrush current requirements

DIMMER/SENSOR COMPATIBILITY

Manufacturer	Part no
OSRAM	ZBHA-CLM DIM (NAED: 45678)
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)

Note 5: The absence of a dimmer from this chart does not necessarily imply incompatibility. Please reference the dimmer manufacturer's instructions for installation.

WARRANTY

OPTOTRONIC® products are covered by our LED Module, OPTOTRONIC Power Supply or Control Warranty. For additional warranty information or to download the warranty registration form visit www.osram.us/warranty.

OSRAM

ECS308 8/2017