eldoLED

Technical Specifications

OPTOTRONIC® OTi 60W Programmable LED Driver

General Information

Item Number	*2743XF (57501)
Type	Constant Current
Output Power	60W (Max.)
Programming Tool	*274A17 (51645)
Software	Download
Programmable Features	Output Current Dimming: Linear & Log. DALI LED Thermal Protection AstroDIM Constant Lumen Output End of life indicator

Find (NAED) as cross reference for new item number i.e. *12345

Environmental Specifications

Ambient Operating Temperature	-40°C to 60°C
Max. Case Temperature (Tc)	80°C*
Max. Storage Temp.	70°C
Max. Relative Humidity (%)	95% non-condensing
Transient Protection	ANSI C62.41 Cat.B 6.0kV
IP Rating	IP66
UL Rating	Dry & Damp, Type HL
UL File number	E333135
EMI Compliance	FCC Part 15 Class A
Sound Rating	Class A

***** - 5 year warranty applicable at 85°C

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Electrical Specifications

Input

Input Voltage (VAC)	120V-277V (+/- 10%)	
Frequency Range (Hz)	50 – 60 Hz (+/- 5%)	
	120V	**277V**
Input Current (A)	0.60	0.25
THD @ Full load	<20%	<20%
Power Factor @ Full load	>0.9	>0.9
Efficiency @ Full load	≥85%	≥87%
Inrush Current (Apk)	26A@ 263µs	57A@ 245µs

Output

Output Current (mA)	500 - 1600 mA (1mA step) (Default: 1050 mA)
Output Voltage (VDC)	15-55 VDC
Output Ripple Current	< 15% @ 1600mA
Max. Output Power (W)	60W
LED Power-Up Time	< 1sec
Load Regulation	< 5%
Line Regulation	< 5%
Over Voltage Protection	Yes, non-latching
Over Load Protection	Power fold back @ 61W
Output Short-Circuit Protection	Yes, non-latching
Over Temperature Protection	Foldback to 60% at 100°C, Auto Recovery

Dimming

Dimming Control	DALI 2.0 Compatible AstroDIM
Dimming Range	10-100% (50mA min)
Dimming Type	Digital

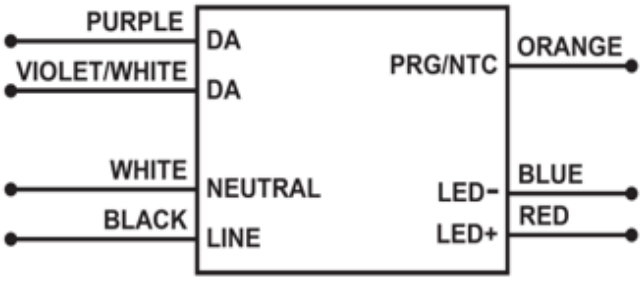
CAUTION: Two power supplies if dimming is connected to non-class 2 circuits.

LED thermal protection (NTC)

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

External NTC cannot leave the fixture.
The PRG/ NTC control circuit terminals or lead wires are not isolated.
The external NTC needs to be isolated or separated by live parts.

Wiring Diagram

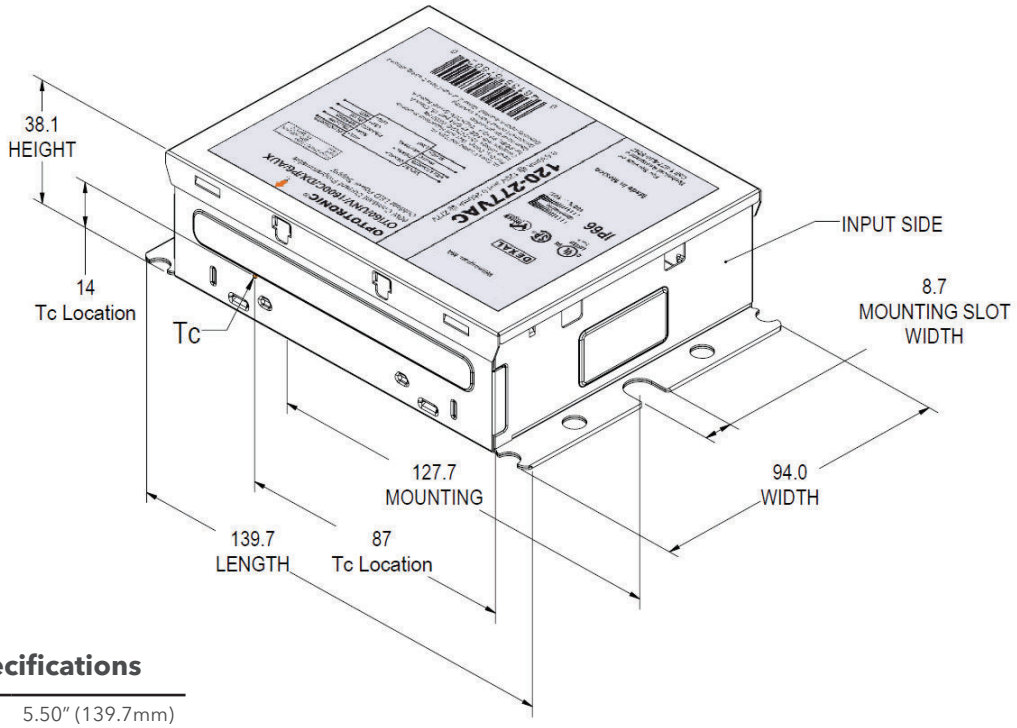


Note: Maximum suggested remote mounting distance is 16 feet.

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.

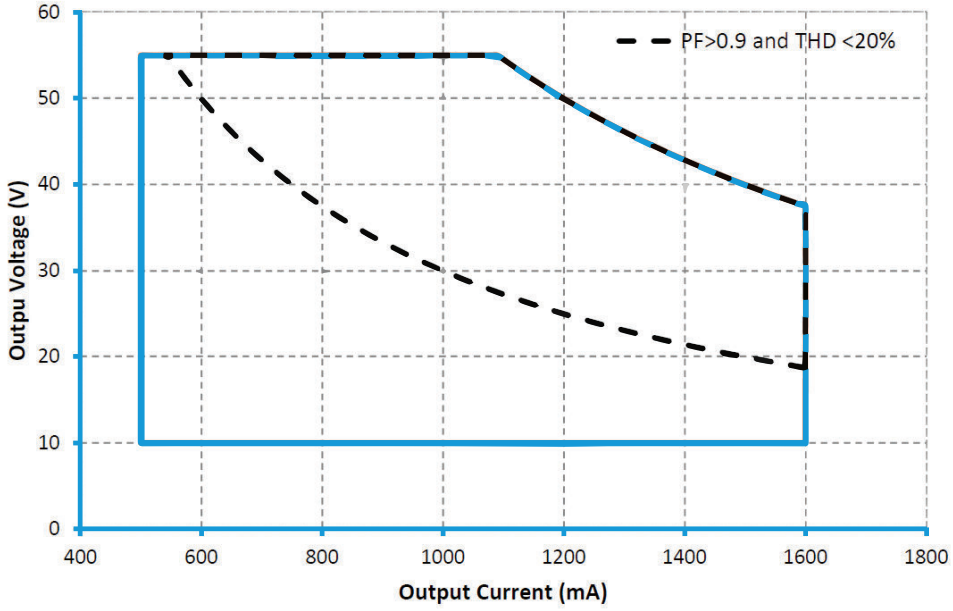
Mechanical Diagram



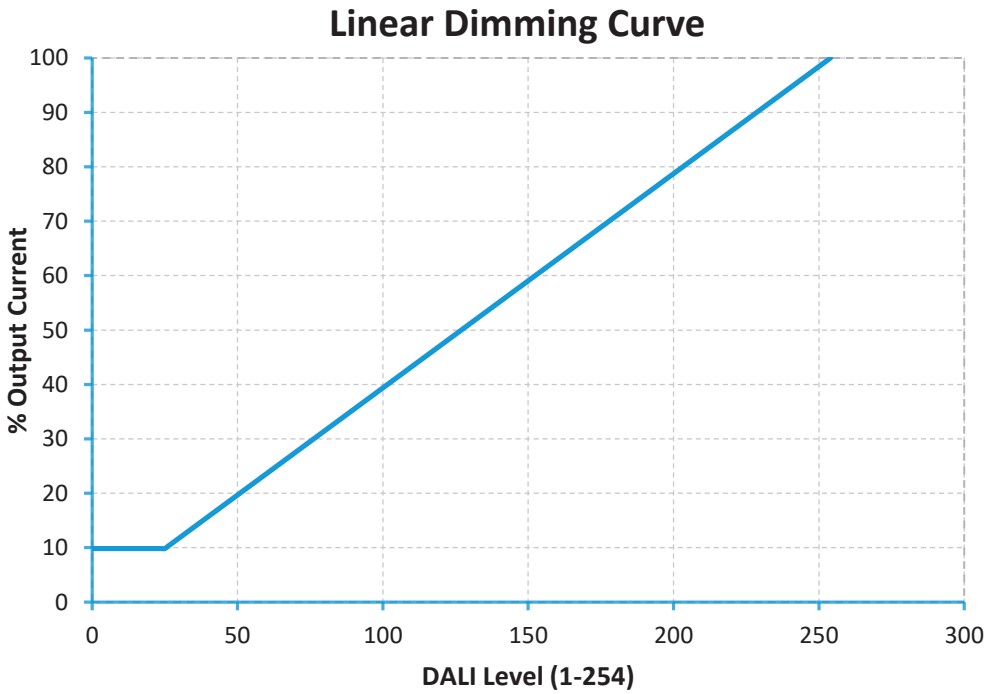
Mechanical Specifications

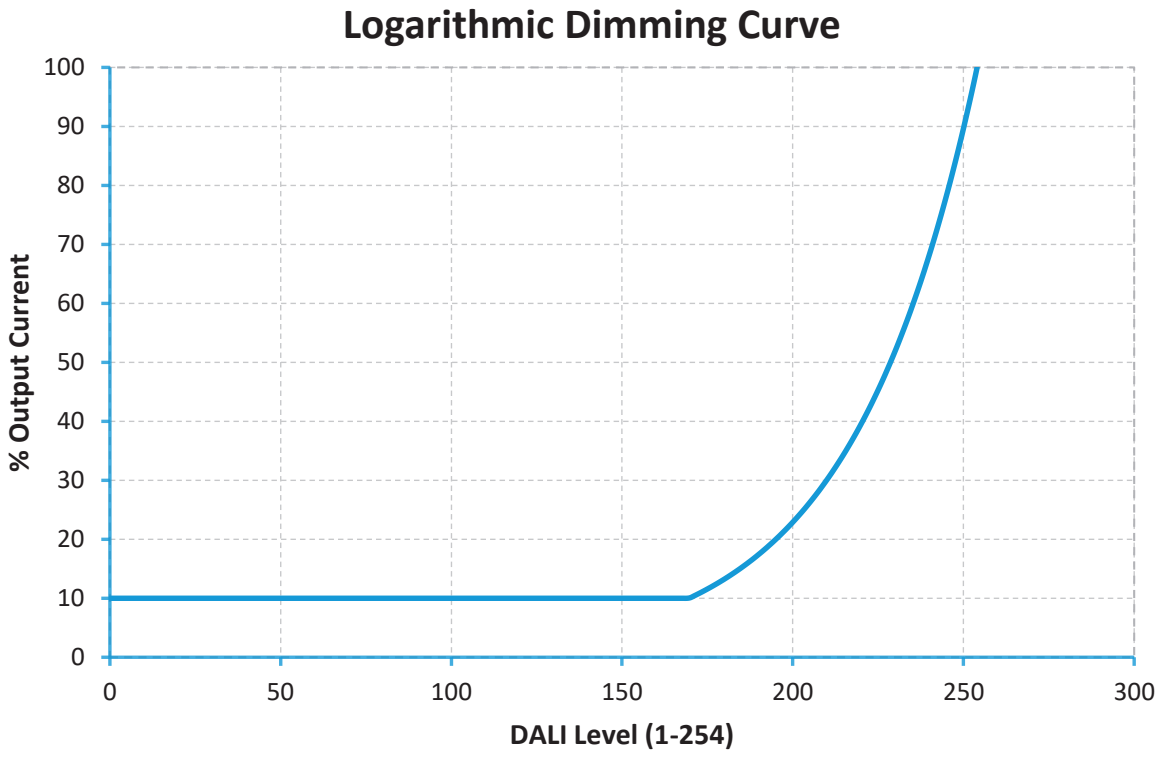
Length	5.50" (139.7mm)
Width	3.7" (94mm)
Height	1.5" (38.3mm)
Mounting Length	5.03" (127.7mm)
Mounting Slot Width	0.34" (8.7mm)

Operating Curve



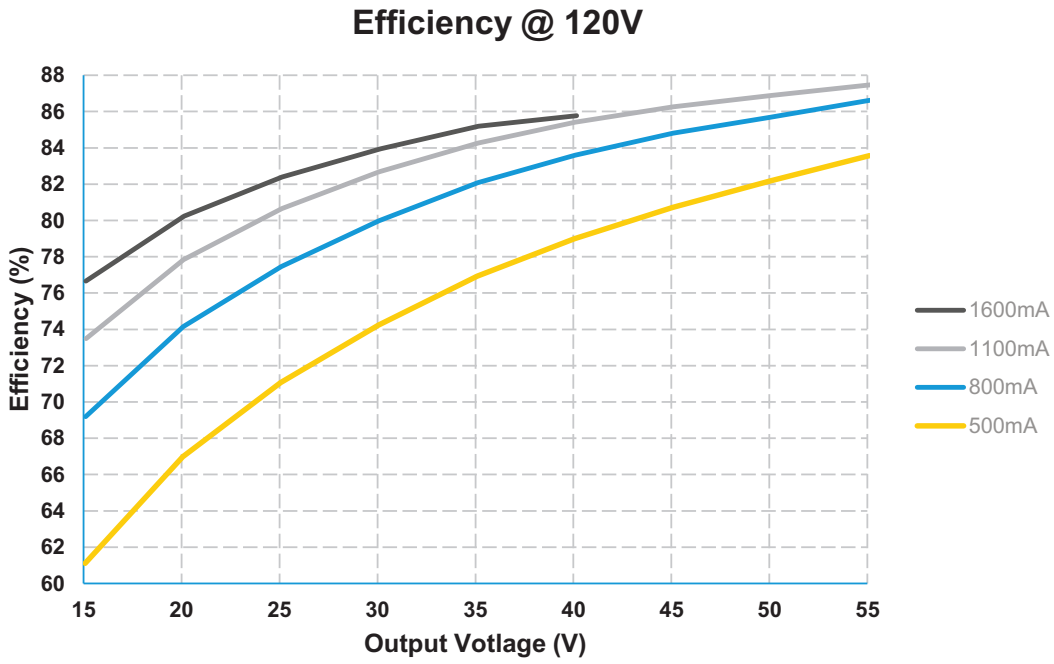
Dimming Curve

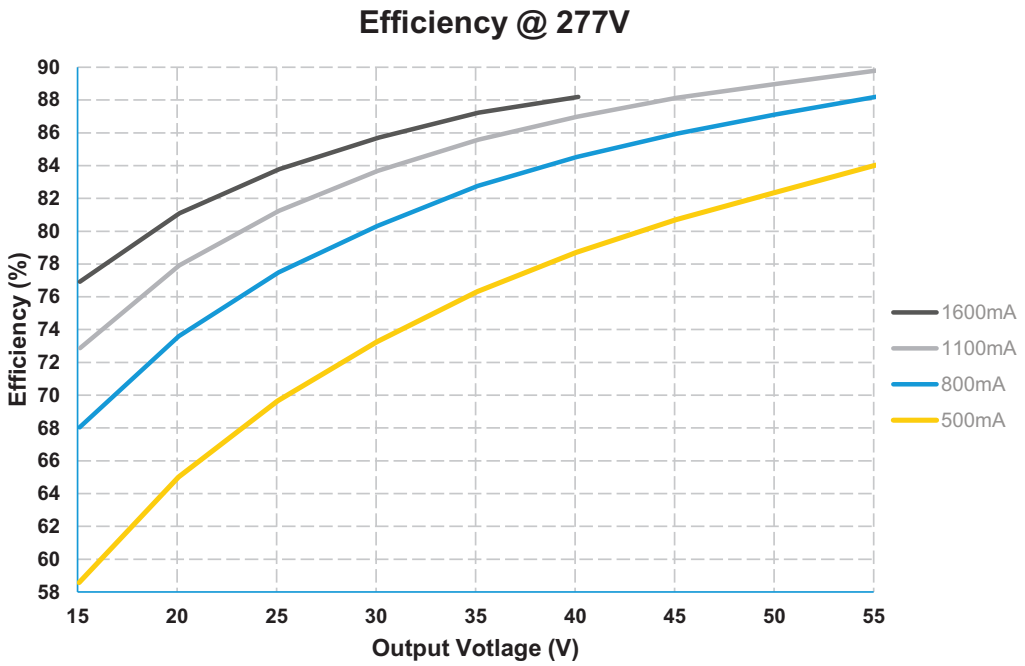




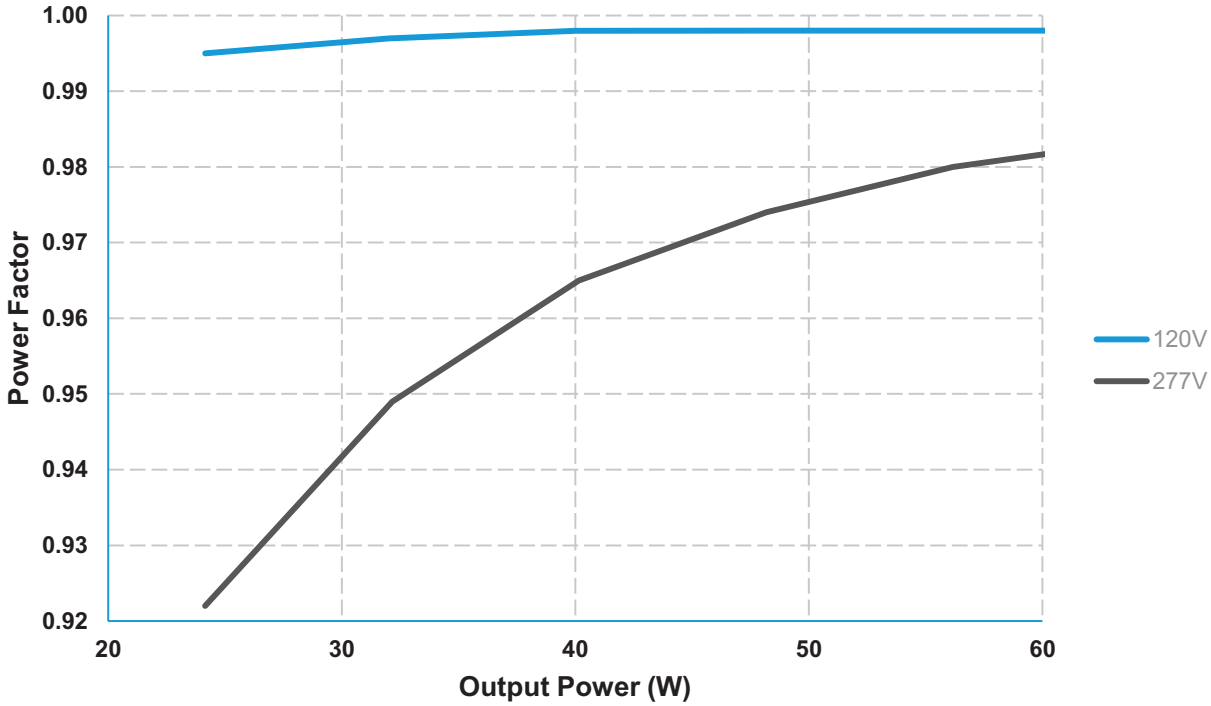
*The absolute minimum current the driver can deliver is 50mA

Efficiency vs. Output Voltage

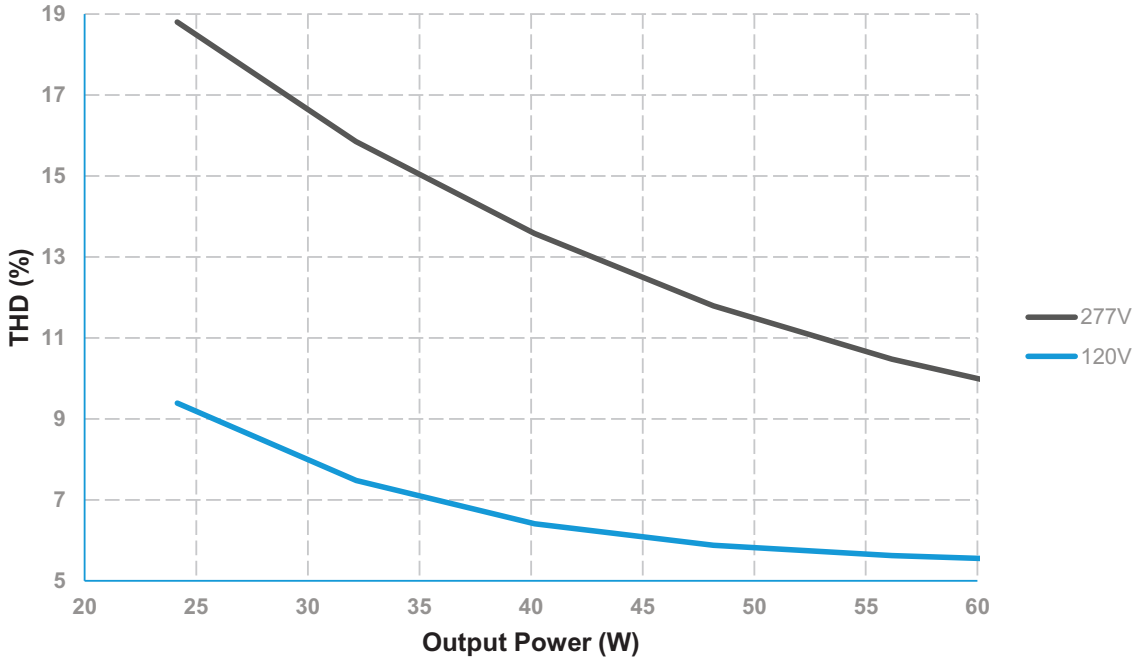




Power Factor Performance

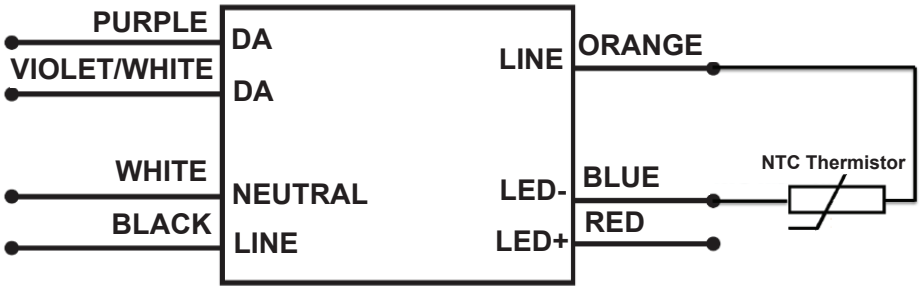


THD Performance



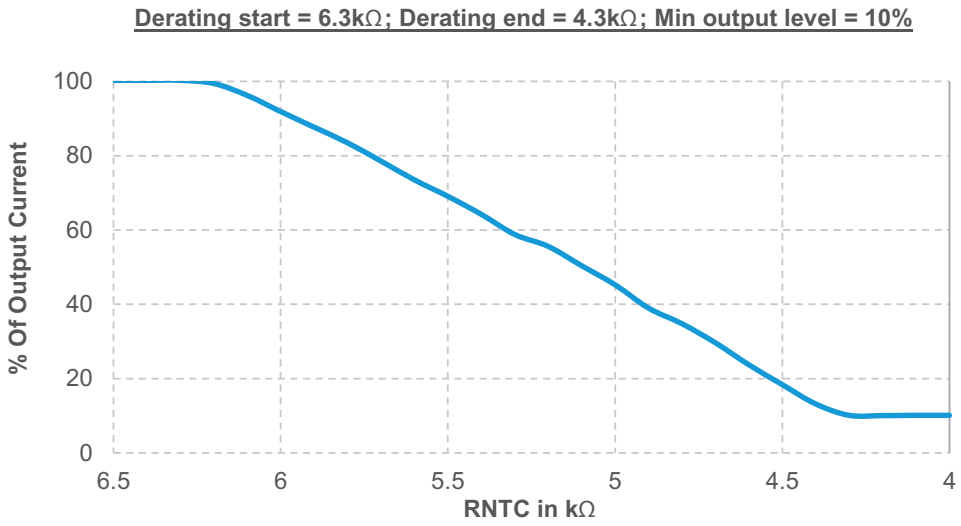
LED Thermal Protection (NTC) Characteristic

The LED thermal protection feature of the OTi60W 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)**.
To learn more about this feature, please refer to the Technical Guide for LED Thermal Protection (ECS304).

Note: Graphs for reference. The derating limits can be programmed using the OT Programmer.

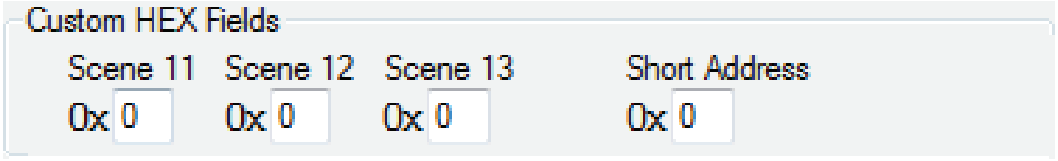


End-of-Life Indicator

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.

Hex Codes and Short Adress

The OTi60W driver gives additional flexibility to OEMs and utilities by allowing them to assign a unique short address and hex codes to the driver. These addresses can be programmed into the driver using the OT Programmer software. There are three, 1 byte, hexadecimal code fields which are stored in Scene 11, 12, 13 address locations in the DALI memory bank. The short address field is also a 1 byte hexadecimal number but can be only 6 bits long (64 short addresses, other 2 bits are masked). Following is a snapshot of how the Custom HEX Fields section looks in the OT Programmer.



AstroDIM

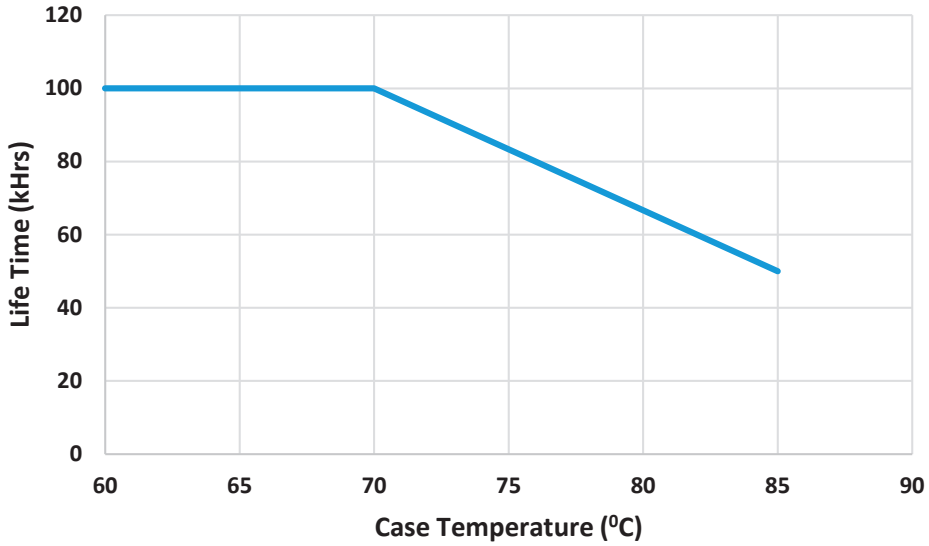
AstroDIM is an autonomous five level (1 Power ON & 4 Dimming levels) dimming protocol. It provides multi-stage night-time power reduction based on an internal timer; there is no need for an external control infrastructure. The ECG is automatically aligned to the on and off times for the street lighting 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).

Constant Lumen Maintenance

The Constant Lumen Maintenance feature of the OTi60W 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: Step-by-step instructions are outlined in the OT Programmer User Manual embedded in the software.

Lifetime vs TCase



Warranty

eldoLED OPTOTRONIC® Products are covered by a 5-year limited warranty.
Complete warranty terms can be found at: www.eldoled.com/legal/terms-and-conditions

eldoLED
One Lithonia Way
Conyers, GA 30012
United States

+1 877 353 6533

nasupport@eldoLED.com
www.eldoLED.com

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