eldoLED

# Technical Specifications
# ECOdrive 30W Programmable LED Driver with D4i Technology

## Electrical Specifications

### Input

| | | |
|---|---|---|
| Input Voltage (VAC) | 120V-277V (+/- 10%) | |
| Frequency Range (Hz) | 50 – 60 Hz (+/- 5%) | |
| | **120V** | **277V** |
| Input Current (A) | 0.31 | 0.14 |
| THD @ Full load | <20% | <20% |
| Power Factor @ Full load | >0.9 | >0.9 |
| Efficiency @ Full load | ≥86% | ≥86% |
| Inrush Current (Apk, T@50% of Apk) | 15.9, 200µs | 39.7, 165µs |

### General Information

| | |
|---|---|
| Item Number | *2743Y8 (78033) |
| Type | Constant Current, Class 2 |
| Output Power | 30W (Max.) |
| Programming Tool | *274A17 (51645) & *2747CR (51647) / *2743V1 (51648) |
| Software | Download |
| Programmable Features | Output Current<br>Dimming: Linear & Log.<br>DALI-2/D4i<br>LED thermal protection<br>Constant lumen output<br>End-of-life indicator |

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

### Output

| | |
|---|---|
| Output Current (mA)[1] | 150-1050mA (1mA step) |
| Output Voltage (VDC) | 10-56VDC |
| Output Ripple Current | <20% @ 1400mA |
| Max. Output Power (W) | 30W |
| 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 95ºC |

1 – The lowest output current is 1.5mA and the minimum percentage of dimming is dependent on the programmed output current of the driver.

### Environmental Specifications

| | |
|---|---|
| Ambient Operating Temperature | -20ºC to 50ºC |
| Max. Case Temperature (Tc) | 75 ºC (50kHrs)[1] |
| Max. Storage Temp. | 70ºC |
| Max. Relative Humidity (%) | 85% non-condensing |
| Transient Protection | NEMA SSL 1 - 2010<br>Non-Roadway 2.5KV |
| UL Environmental Rating | Dry & Damp |
| UL File number | E320395 |
| IEC | IEC 61347-1 |
| EMI Compliance | FCC Part 15 Class A |
| Sound Rating | Class A |

1 - Warranty applicable at 85ºC

### Dimming

| | |
|---|---|
| Dimming Control | DALI-2/D4i |
| Dimming Range | 1-100% |
| Dimming Type | Digital |
| Voltage Rating (DALI-2/D4i) | 12V typ. |
| Current Rating (DALI-2/D4i) | 50mA (typ.), 62mA (max) |
| Dim-to-Off Threshold | 0 (digital Level) |
| Standby Power[1] | 0.40W(120V);<br>0.55W(277V) |

**CAUTION: More than one power supply present.**

1 – This does not include the sensor power in DALI-2/D4i mode.

### LED thermal protection (NTC)

| | |
|---|---|
| NTC Value Active Range | ≤25kΩ |
| Temperature Derating Start | 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.

c UL us LISTED Class P

CE

RoHS compliant

D4i

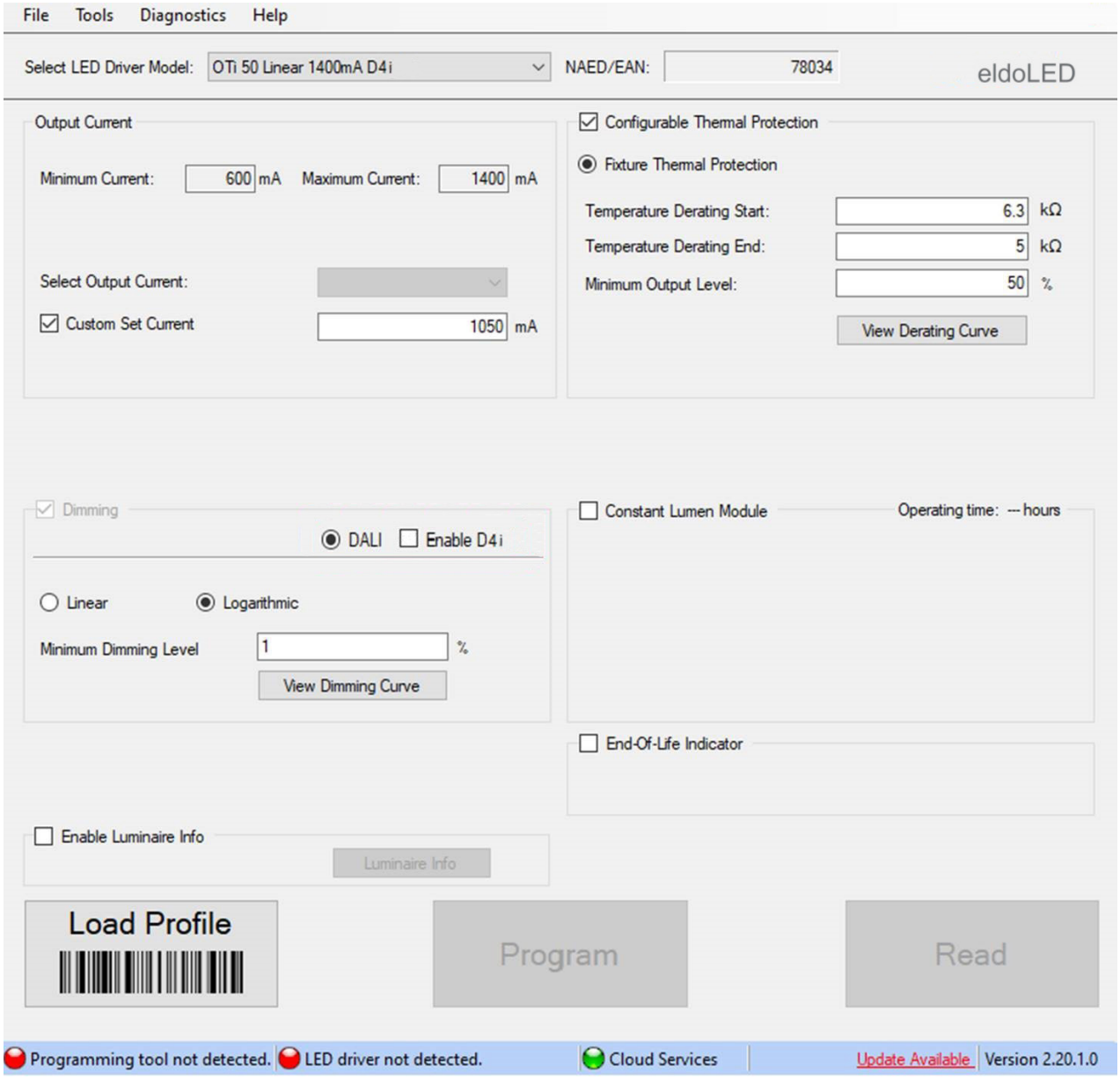
DALI 2

## DALI-2/D4i Interface

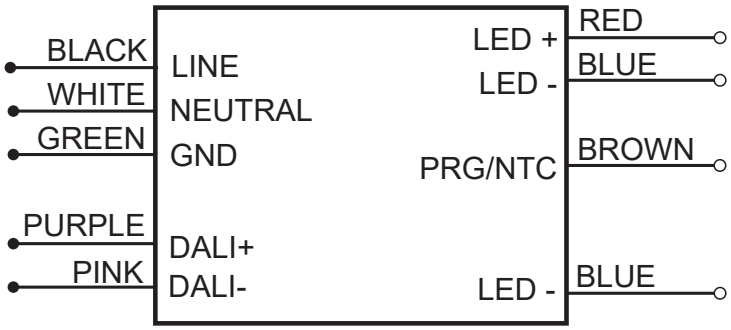
The default setting of the digital dimming interface is set to Enable D4i. It delivers power to sensors and the following data:

| | |
|---|---|
| Input Power Consumption | 5% accuracy above 15W threshold |
| Operating Time | Updated rate: 1 minute |
| Max. Case Temperature | ± 5°C (41°F) accuracy |
| Current Case Temperature | ± 5°C (41°F) accuracy |

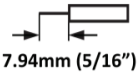
When using DALI-1.0 systems, choose the DALI option and deselect Enable D4i in the programming software. This will turn off the power delivery on the DALI interface. The interface is non-polarized in this mode.



## Wiring Diagram

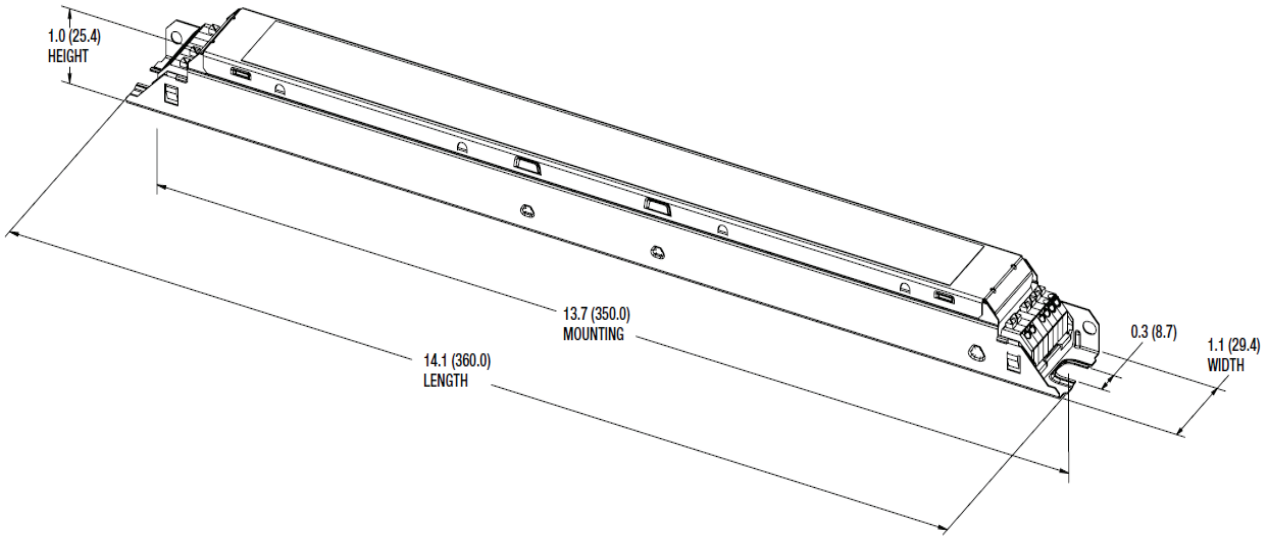



**Note:** - Maximum suggested remote mounting distance is 16 feet.
- Use solid copper wire only: 16-20 AWG. Strip all wires as such:




- For wiring the output ports for the LED load, Vaux and DIM wire, 16 to 22 AWG is acceptable for use. For more detailed information and requirements, consult the light engine information and or information pertaining to the light engine connectors

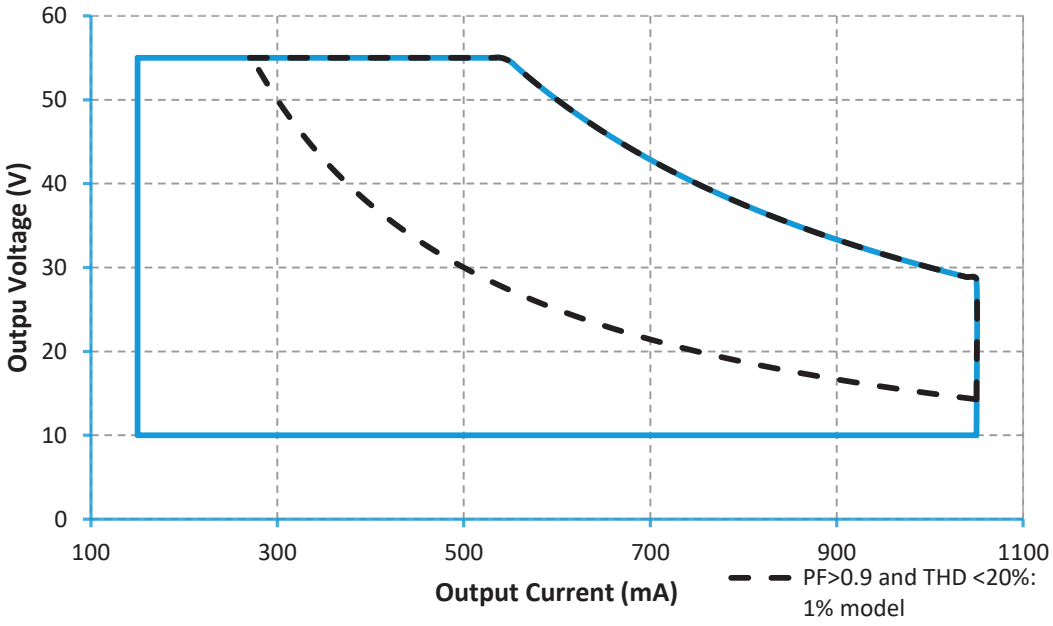
## Mechanical Diagram




## Mechanical Specification

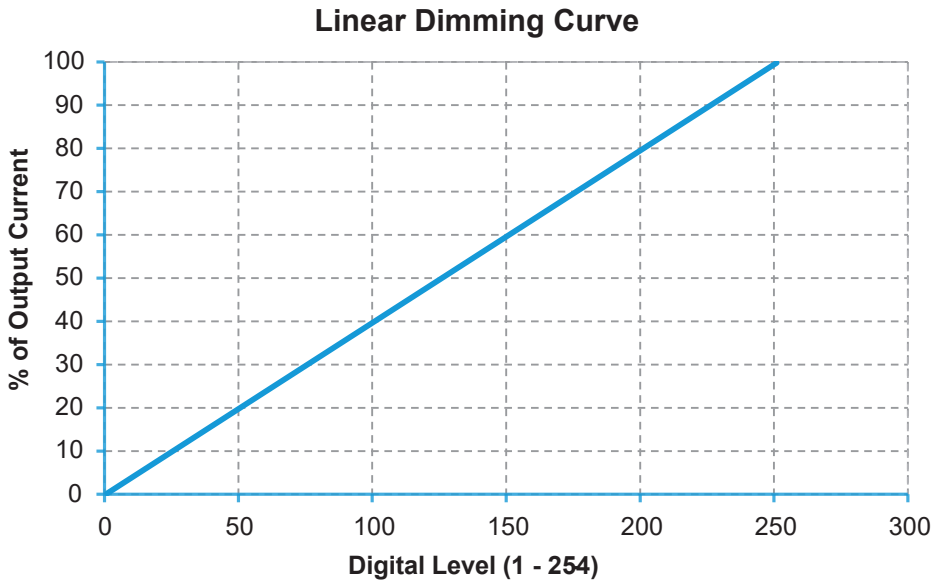
| | |
|---|---|
| Length | 14.20” (280mm) |
| Width | 1.15” (29.4mm) |
| Height | 1.0” (25.4mm) |
| Mounting Length | 13.77” (270mm) |

## Operating Range

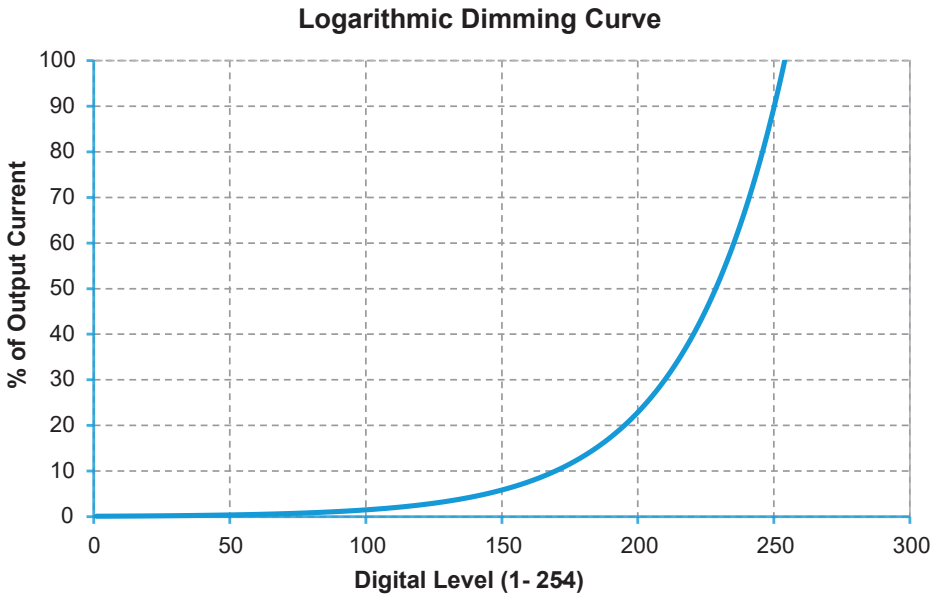



**Note:** Meeting DLC requirements requires minimum 50% loading.

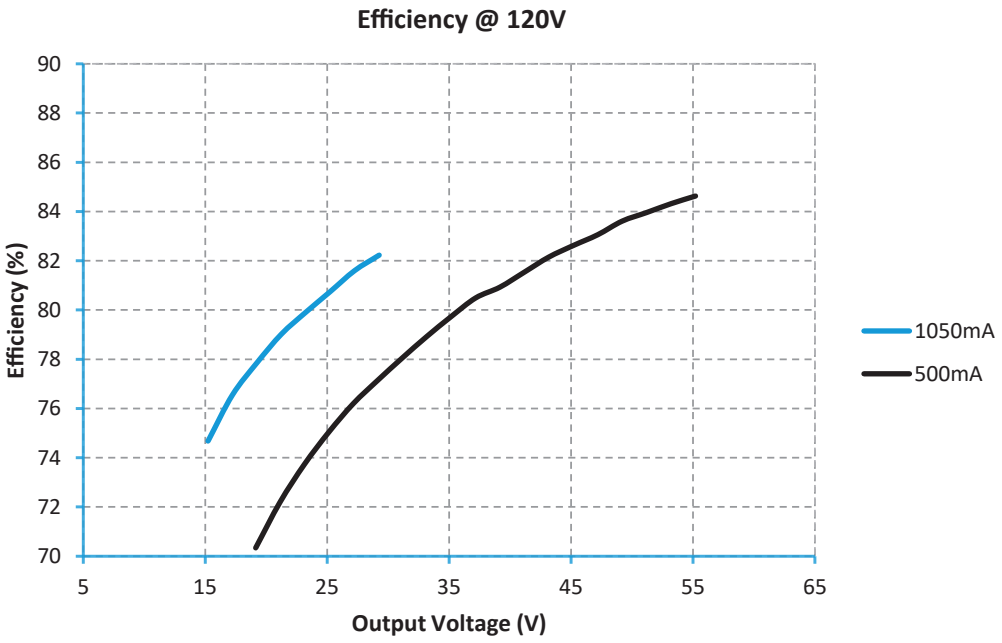
## Dimming Curves

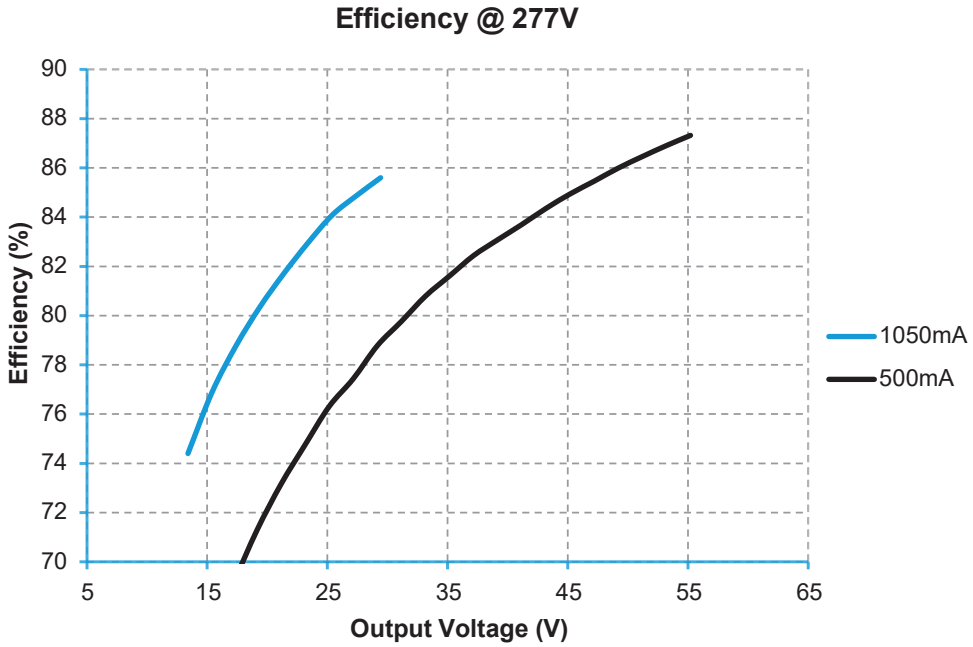


## Dimming Curves

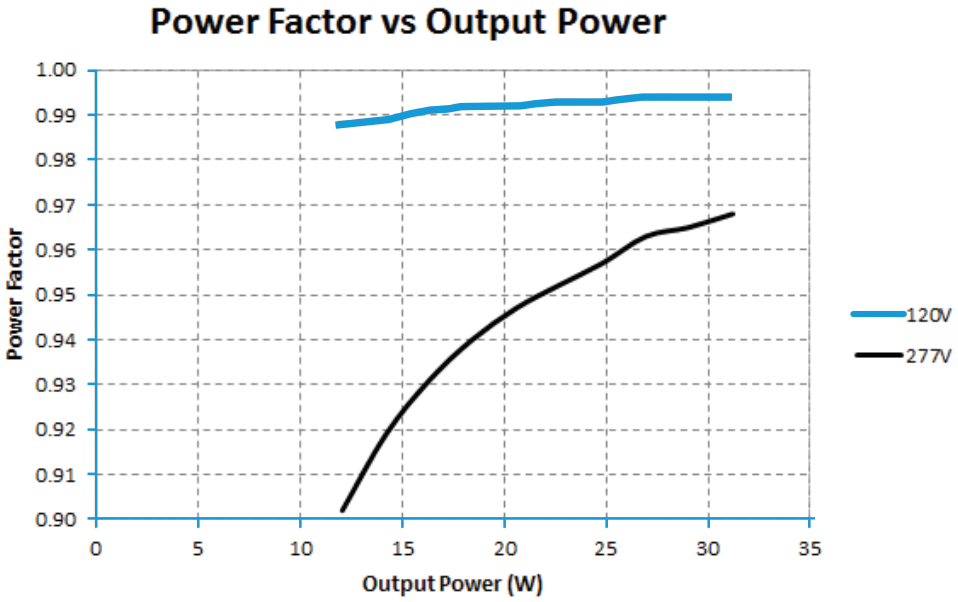



## Efficiency vs Output Voltage

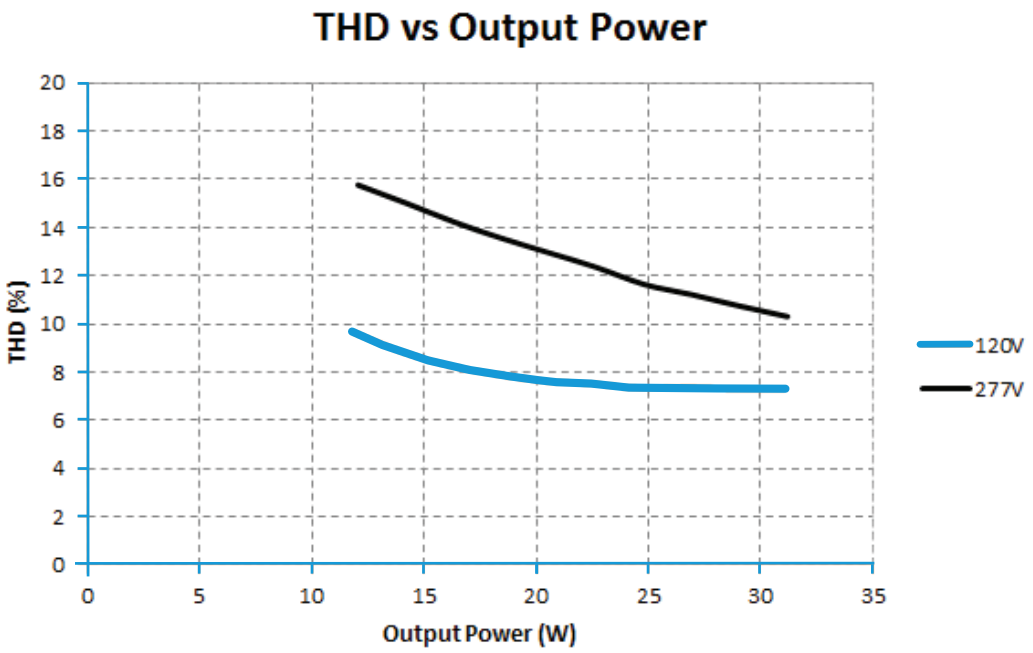





## Power Factor vs Load



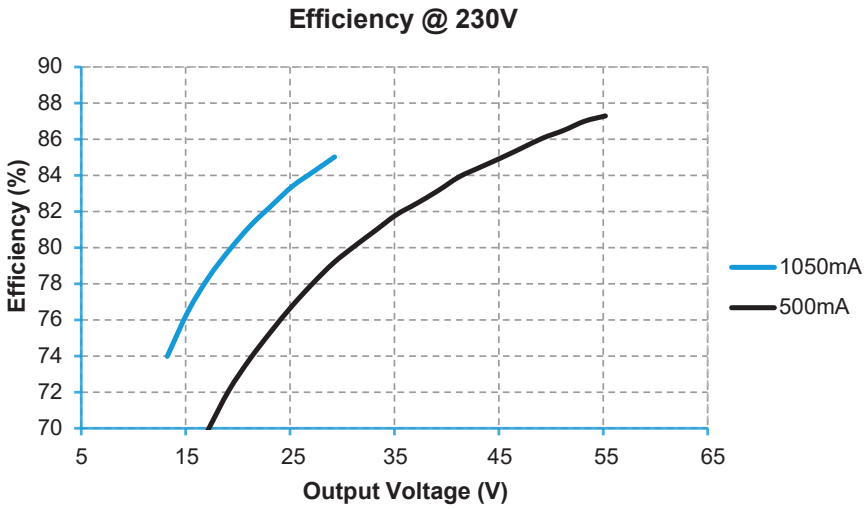
## THD vs Load




## Performance at 230V

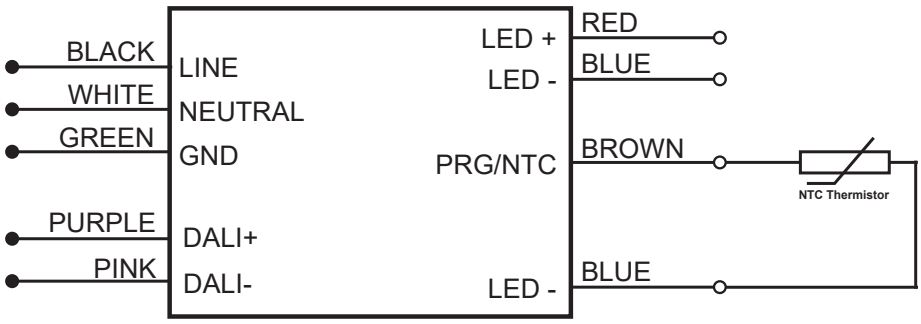
| | |
|---|---|
| Input Current | 0.17A |
| THD @ Full Load | <20% |
| Power Factor @ Full Load | >0.9 |
| Efficiency @ Full Load | >86 |
| Inrush Current (Apk, T@50% of Apk) | 31.6, 190µs |
| Standby Power (W)* | 0.5 |

* - This does not include the sensor power in DALI-2/D4i mode.



## LED Thermal Protection (NTC) Characteristic

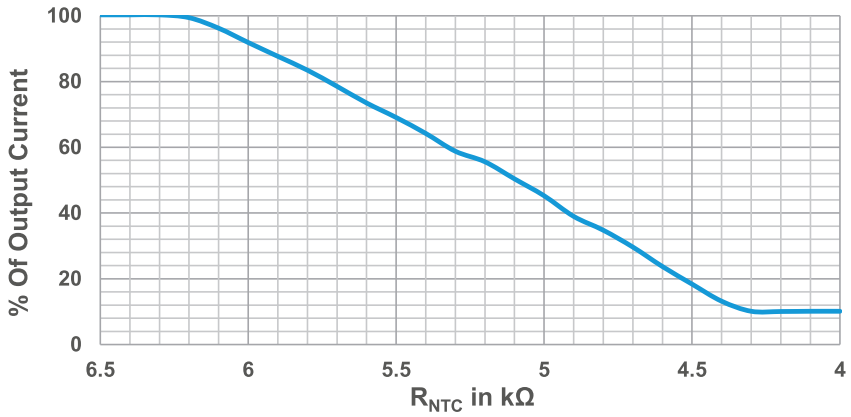
The LED thermal protection feature of the ECOdrive 30W helps reduce the temperature of the LED module by reducing the output current in case of abnormal temperature conditions. To use this feature a third party NTC thermistor should be connected to the LED power supply as shown in the wiring diagram 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.

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

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




## Constant lumen Maintenance

The Constant Lumen Maintenance feature of the ECOdrive 30W 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.

### 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.

### Warranty

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

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