# 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%)
- Input Current (A): 0.36 - 0.83
- THD @ Full Load: <10% - <20%
- Power Factor @ Full Load: >0.9
- Efficiency @ Full Load: >0.9 - >89%
- Inrush Current (A<sub>pk</sub>): 37.4, 150µs
  - @50% of A<sub>pk</sub>: 84.7, 160µs

### Output
- Output Current (mA): 700-2300mA (1mA step)
- Output Voltage (VDC): 10-55VDC
- Output Ripple Current: <5% @ 2300mA
- Max. Output Power: 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 105ºC

### Auxiliary Output (For AUX models only)
- Output Voltage (VDC): 12/20/24V (configurable)
- Output Current (mA): 40
- Voltage Regulation: ±10%

## 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
- Source/Sink Current: 0.2mA max
- Dim-to-Off Threshold: 0.8V
- Standby Power: 2.9W(120V); 2.5W(277V)

## ENVIRONMENTAL SPECIFICATIONS
- Ambient Range: -40ºC to 55ºC
- Case Temperature (Tc): 85ºC (50kHrs)<sup>3</sup> 90ºC max. (30kHrs)<sup>3</sup>
- Max. Storage Temp.: 70ºC
- Max. Relative Humidity: 85% non-condensing
- Transient Protection: NEMA SSL 1-2010 (2.5kV)
  - ANSI C82.77-5-2015(6kV)<sup>2</sup>
- 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

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1 - Default AUX voltage is 12V
2 - 6kV transient protection for high-bay (HB) models
3 - Warranty applicable at 85ºC
<table>
<thead>
<tr>
<th>NAED</th>
<th>Ordering Description</th>
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<th>Ordering Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>57420</td>
<td>OTi 85/120-277/2A3 DIM-1 L</td>
<td>57424</td>
<td>OTi 85/120-277/2A3 DIM-1 L HB</td>
</tr>
<tr>
<td>57421</td>
<td>OTi 85/120-277/2A3 DIM-1 L AUX</td>
<td>57425</td>
<td>OTi 85/120-277/2A3 DIM-1 L HB AUX</td>
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<tr>
<td>57422</td>
<td>OTi 85/120-277/2A3 DIM L</td>
<td>57426</td>
<td>OTi 85/120-277/2A3 DIM L HB</td>
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<tr>
<td>57423</td>
<td>OTi 85/120-277/2A3 DIM L AUX</td>
<td>57427</td>
<td>OTi 85/120-277/2A3 DIM L HB AUX</td>
</tr>
</tbody>
</table>

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

**WIRING DIAGRAM**

- **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.

**MECHANICAL DIAGRAM**

**MECHANICAL SPECIFICATIONS**

- Length: 16.73" (425mm)
- Width: 1.15" (29.4mm)
- Height: 1.0" (25.4mm)
- Mounting Length: 16.34" (415mm)
Note: Meeting DLC requirements requires minimum 50% loading

DIMMING CURVE

- 10% Dimming
- 1% Dimming
EFFICIENCY VS OUTPUT VOLTAGE

Efficiency @ 120V

Efficiency @ 277V

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Downloaded from Arrow.com.
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

<table>
<thead>
<tr>
<th>Vin (V)</th>
<th>Ipeak (A)</th>
<th>T (@ 50% of Ipeak)</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>37.4</td>
<td>150µs</td>
</tr>
<tr>
<td>277</td>
<td>84.7</td>
<td>160µs</td>
</tr>
</tbody>
</table>

Complies to NEMA 410 inrush current requirements

## DIMMER/SENSOR COMPATIBILITY

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Part no</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSRAM</td>
<td>ZBHA-CLM DIM (NAED: 45678)</td>
</tr>
<tr>
<td>Encelium EMS</td>
<td>EN-LCM-1R10V-GB2-BK</td>
</tr>
<tr>
<td></td>
<td>EN-LCM-1R10V-GB2-BK/DR</td>
</tr>
<tr>
<td></td>
<td>EN-ALC-1R10V-GB2-BK</td>
</tr>
<tr>
<td></td>
<td>EN-ALC-1R10V-GB2-BK-DR</td>
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<tr>
<td>Leviton</td>
<td>IP710-DLX</td>
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<tr>
<td>Lutron</td>
<td>DVT-XX</td>
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<tr>
<td>Wattstopper</td>
<td>ADF-120277</td>
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<tr>
<td>Synergy lighting Controls</td>
<td>ISD BC</td>
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<tr>
<td>Wattstopper</td>
<td>FD-301</td>
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<tr>
<td>Enlighted Inc.</td>
<td>SU-3E-00 (Enlighted Compact Sensor)</td>
</tr>
</tbody>
</table>

**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 details, refer to the latest version of the warranty (LED395) available at www.osram-americas.com/optotronic.