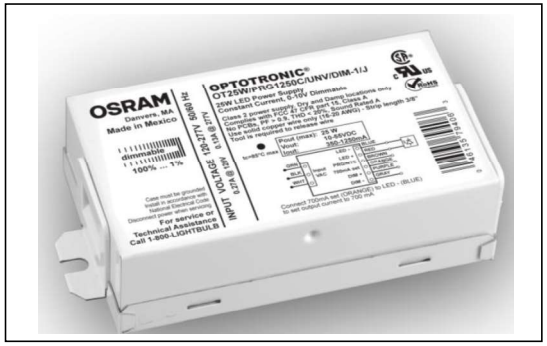
# OPTOTRONIC® LED Power Supply
# OT25W Programmable - Technical Specifications




| ELECTRICAL SPECIFICATIONS | | |
|---|---|---|
| ***Input*** | | |
| Input Voltage (VAC) | 120V-277V (+/- 10%) | |
| Frequency Range (Hz) | 50 – 60 Hz (+/- 5%) | |
| | **120V** | **277V** |
| Input Current (A) | 0.25 | 0.11 |
| THD @ Full load | < 10% | < 20% |
| Power Factor @ Full load | >0.9 | >0.9 |
| Efficiency @ Full load | > 80% | >80% |
| Inrush Current ($A_{pk}$) | 5.7 | 12.7 |
| Line Regulation | < 5% | |
| Stand-by Power (W) | < 1W | |
| ***Output*** | | |
| Output Current (mA) | 150- 1250mA[1] (1% models)<br>350- 1250mA (10% models) | |
| Output Voltage (VDC) | 10-55VDC<br>(Power limited) | |
| Output Ripple Current | <20% @ 1250mA | |
| Max. Output power (W) | 25W (model dependent) | |
| LED Power-up time | < 1sec | |
| Load Regulation | <5% | |
| Over voltage protection | Yes | |
| Output short-circuit protection | Yes, non- latching | |
| LED load temperature protection | Yes, current reduction | |

| GENERAL INFORMATION | |
|---|---|
| Item Number(s) | 79405 (1 %, F-type)<br>79406 (1 %, J-type)<br>79403 (10 %, F-type)<br>79404 (10 %, J-type) |
| Type | Constant Current |
| Output Power | 25W (Max.) |
| Programming tool | 51645- OT Programmer |
| Software | Download |

| ELECTRICAL SPECIFICATIONS | |
|---|---|
| ***Dimming*** | |
| Dimming Control | 0 – 10V (Isolated) |
| Dimming Range | 1 – 100% & 10-100%[2] |
| Dimming Type | Analog , PWM |
| Frequency | ≥ 1kHz (PWM) |
| Dimming Input Isolation | 2.5KV |
| Source/Sink Current | 1mA (max) |
| ***LED thermal protection (NTC)*** | |
| NTC value | ≤ 25kΩ,<br>15 kΩ @ 25 ºC typical |
| Output level minimum | User defined |

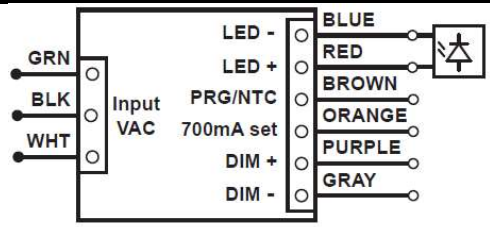
| ENVIRONMENTAL SPECIFICATIONS | |
|---|---|
| Ambient Operating Temperature | -30ºC to 50 ºC |
| Max. Case Temp. (Tc) | 75ºC (50kHrs) [3]<br>85°C (20kHrs) |
| Max. Storage Temp. | 75ºC |
| Max. Relative Humidity (%) | 85% non condensing |
| Transient Protection | NEMA SSL1 - 2010<br>Non-Roadway 2.5KV |
| UL Environmental Rating | Dry & Damp |
| UL File number | E320395 //Class TL |
| IP Rating | IP20 |
| EMI Compliance | FCC Part 15 Class A |
| Sound Rating | Class A |

***1- The output is in PWM mode under 350mA. Set current under 350mA is limited to 10% DIM***

***2-The lowest output current is10mA and the minimum percentage of dimming is dependent on the programmed output current of the driver***

***3- Warranty applicable only at 75ºC***

## WIRING DIAGRAM




***Note 1***: Connect **700mA set (ORANGE)** to **LED - (BLUE)** to set output current to **700 mA**

***Note 2***: Maximum suggested remote mounting distance is 16 feet. For additional information on further distances and EMI compliance reference OPTOTRONIC Technical Guide LED258.

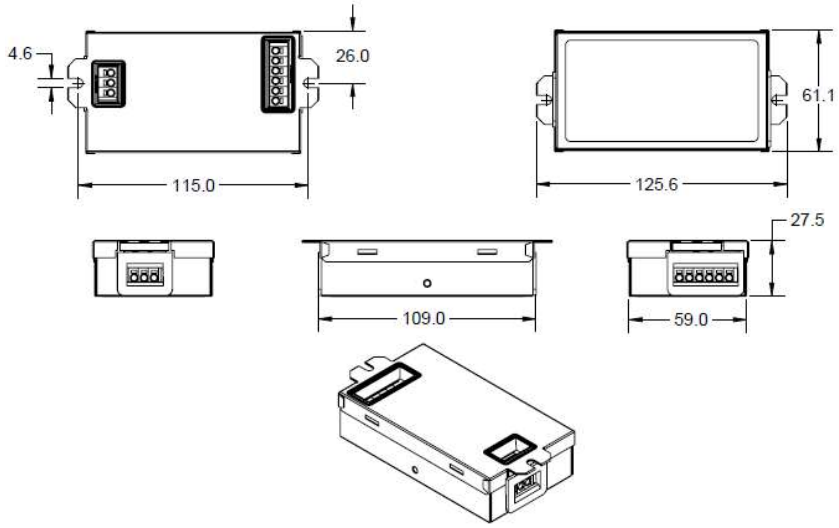
***Note3:*** Wire extraction tool is needed to extract the wires from the connectors. (WAGO Part#- 210-719)

| MECHANICAL SPECIFICATIONS | |
|---|---|
| ***Housing*** | F- Style |
| Length | 4.3” (109mm) |
| Width | 2.4” (61.1mm) |
| Height | 1.2” (27.5mm) |
| Mounting Length | 4.5” (115mm) |
| Mounting width | 2.4” (61.1mm) |

| MECHANICAL SPECIFICATIONS | |
|---|---|
| ***Housing*** | J-Style |
| Length | 4.2” (106mm) |
| Width | 2.4” (61.1mm) |
| Height | 1.2” (27.5mm) |
| Mounting Length (PEM studs) | 2.0” (50.8mm) |
| Mounting width | 2.4” (61.1mm) |

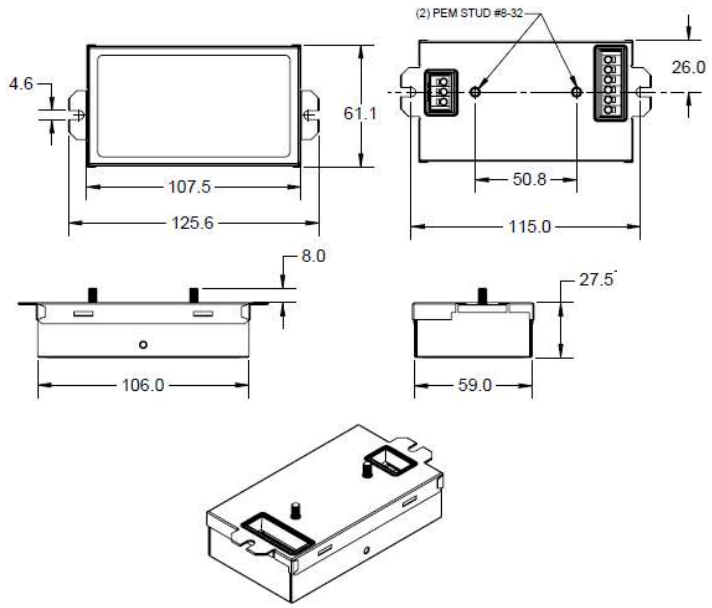
## MECHANICAL DIAGRAM

### F- Style Housing

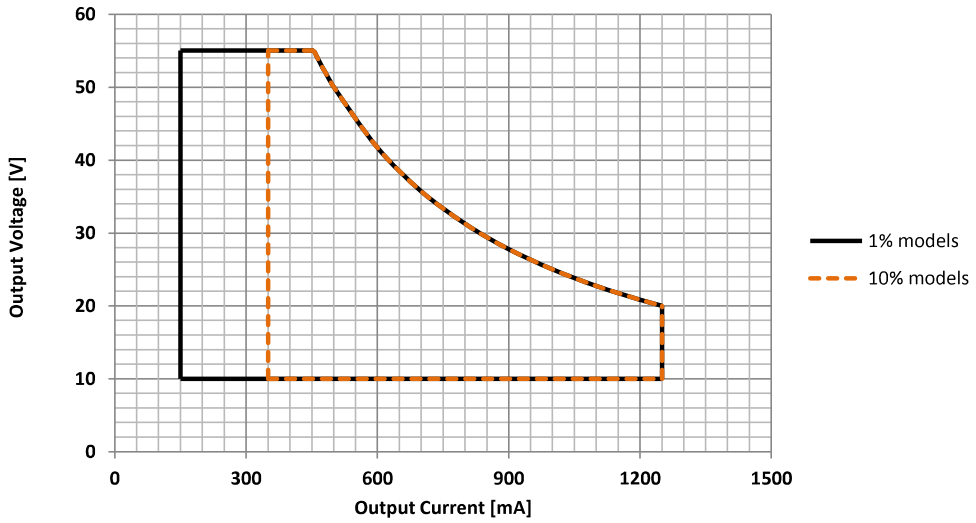


## MECHANICAL DIAGRAM

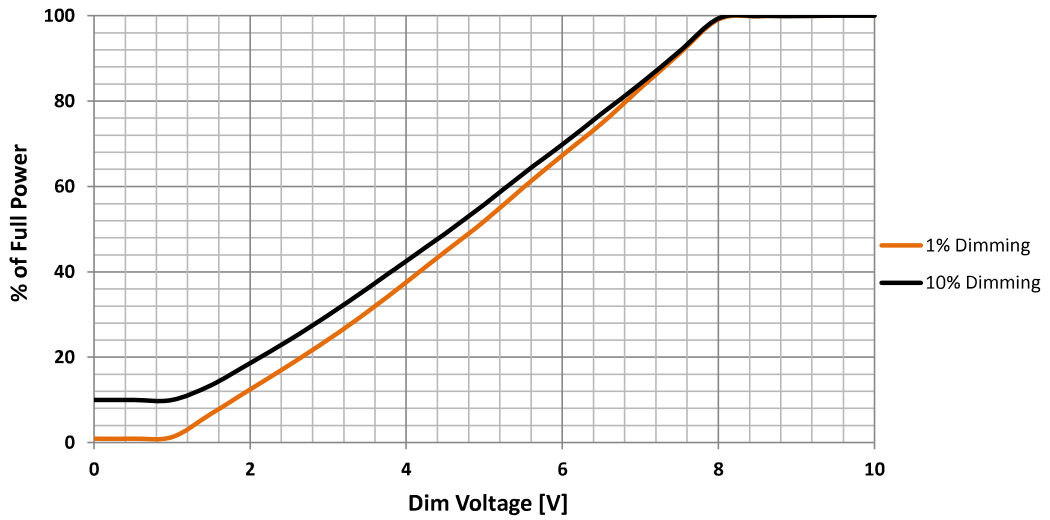
### J- Style Housing



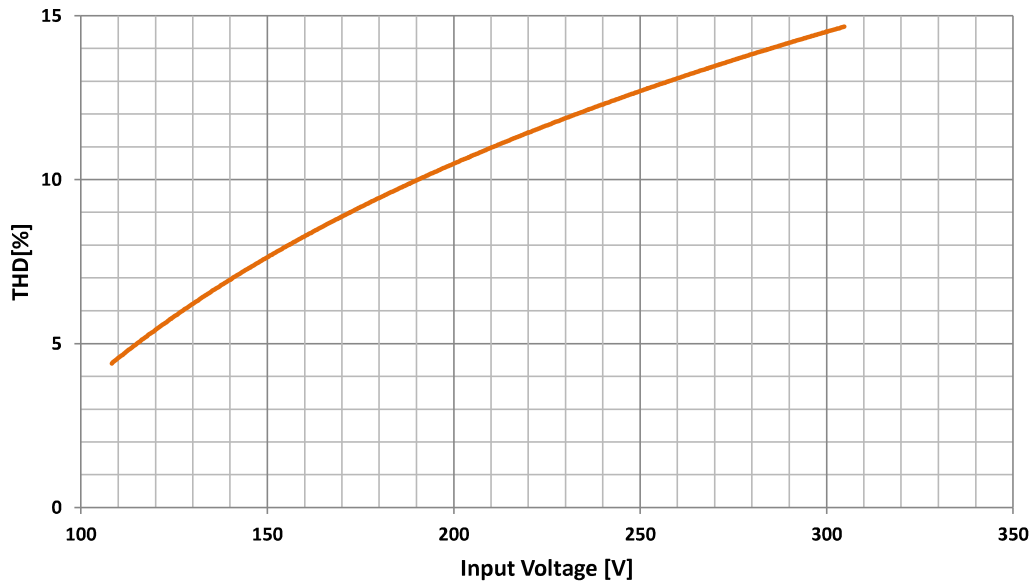

## OPERATING RANGE



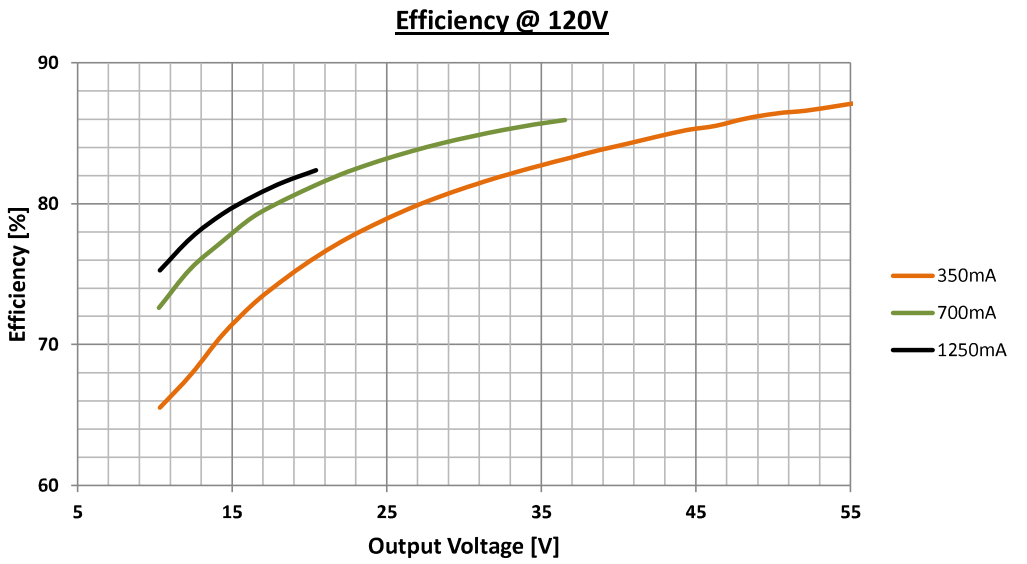
## DIMMING CURVE

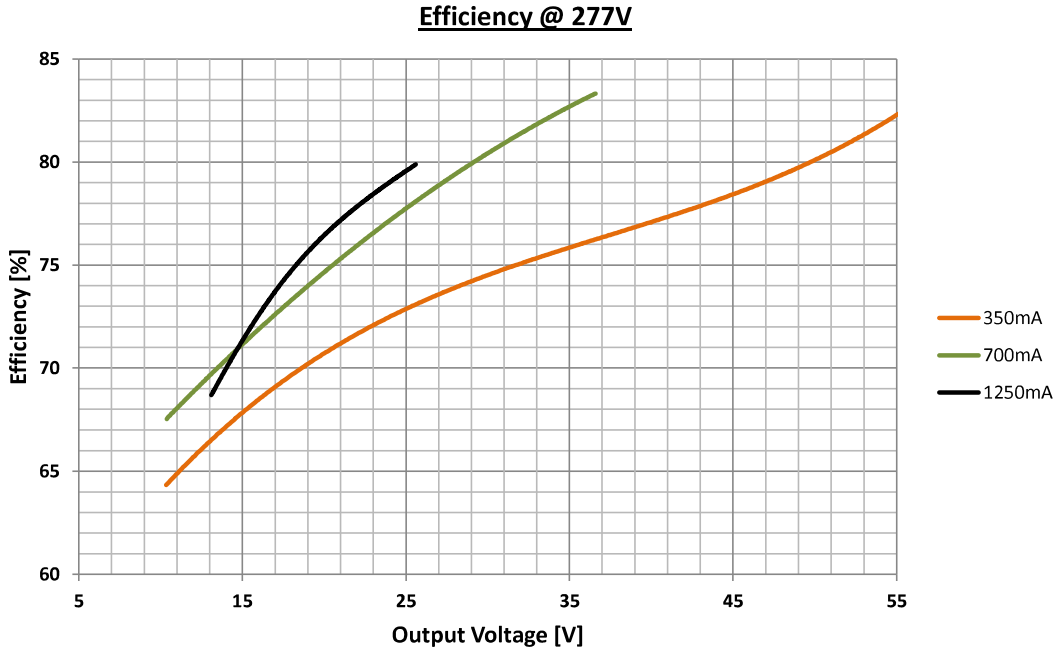



## THD VS INPUT VOLTAGE (FULL LOAD)



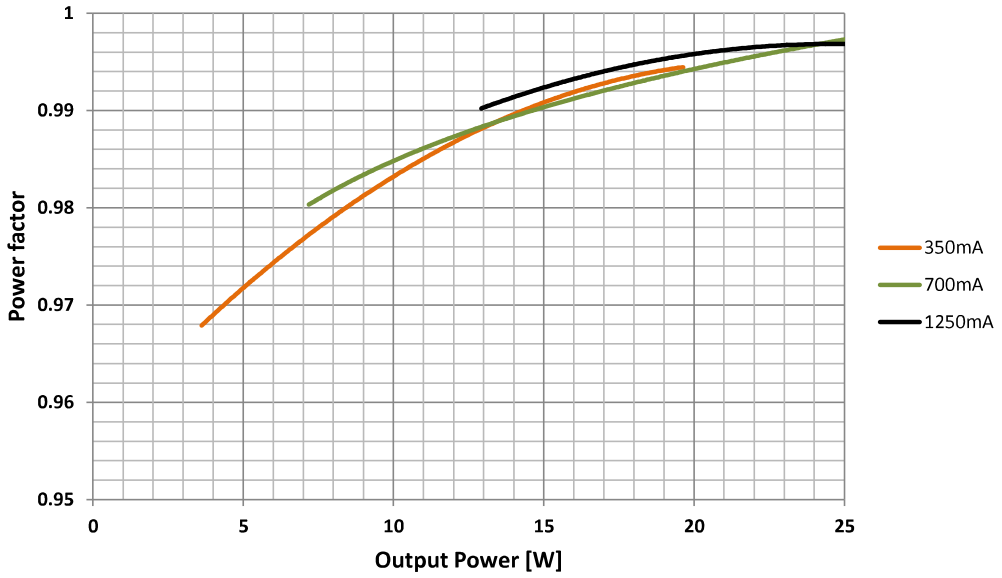
## EFFICIENCY VS OUTPUT VOLTAGE



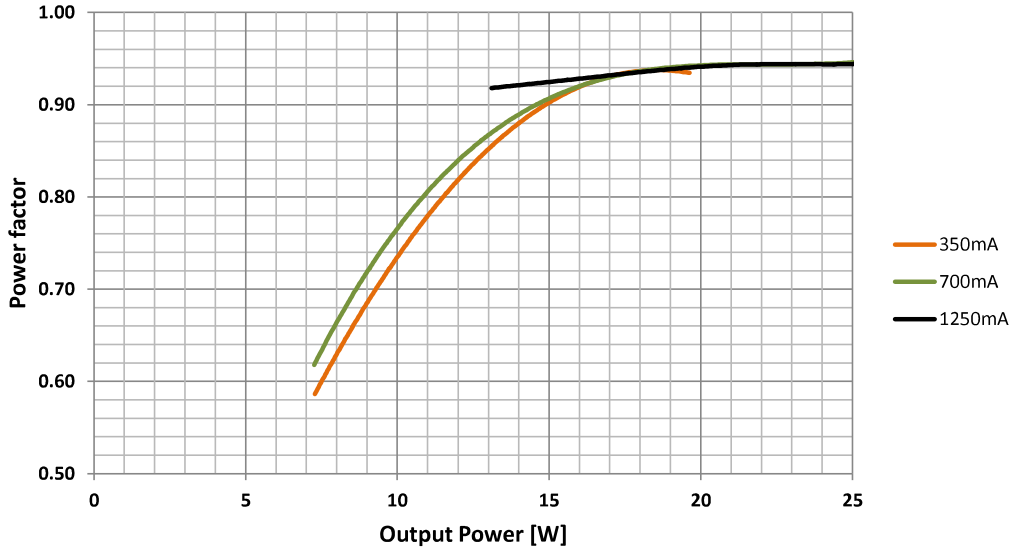



## POWER FACTOR VS OUTPUT POWER

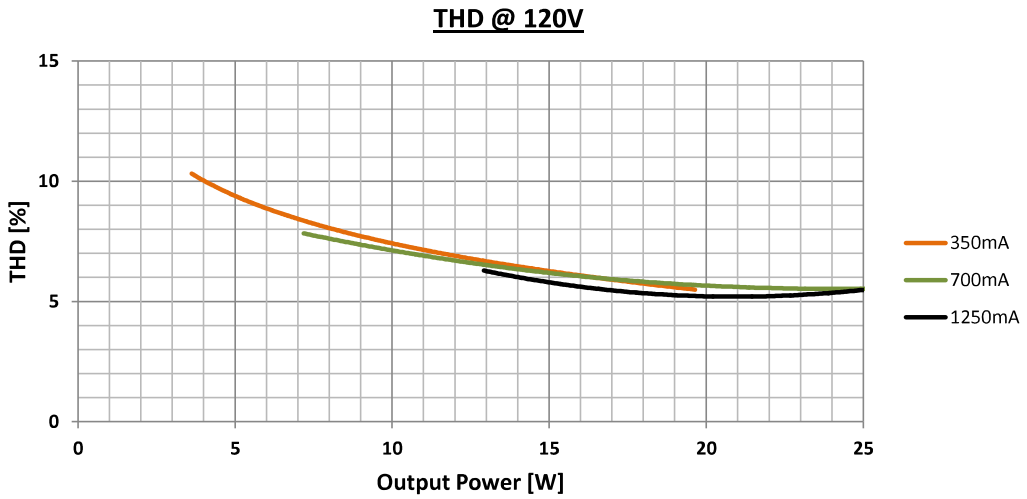
### Power factor @ 120V

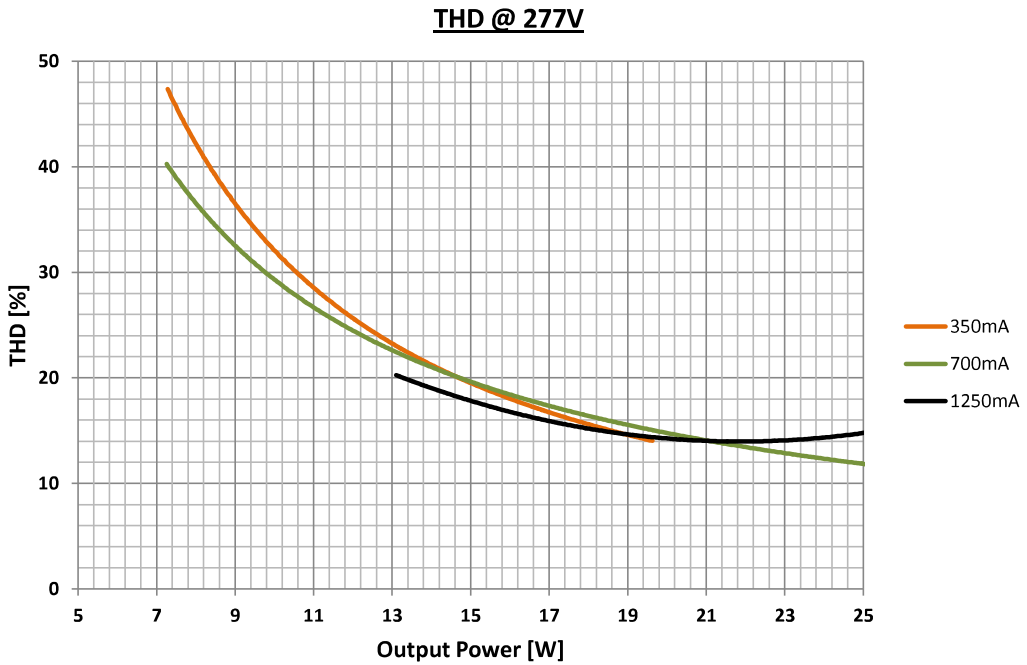



### Power factor @ 277V



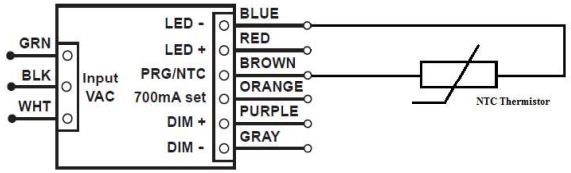
## THD VS OUTPUT POWER



## LED THERMAL PROTECTION (NTC) CHARACTERISTIC

The LED thermal protection feature of the OT25W 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.

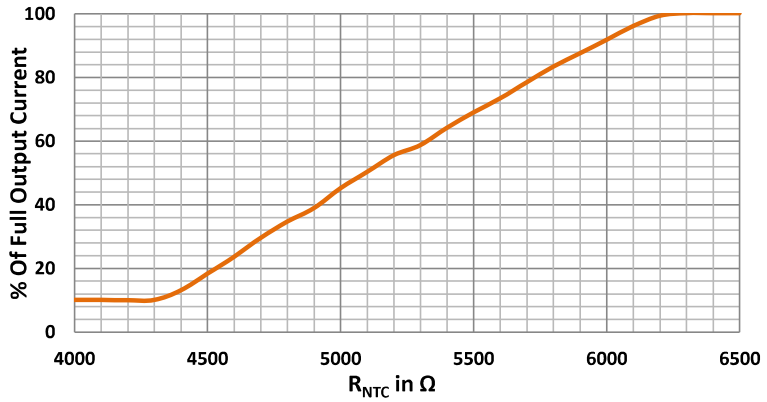



In the end application, care must be taken to place the NTC thermistor close to the hottest spot on the LED module. If LED thermal protection is not required the NTC port on the LED power supply connector can be left open.

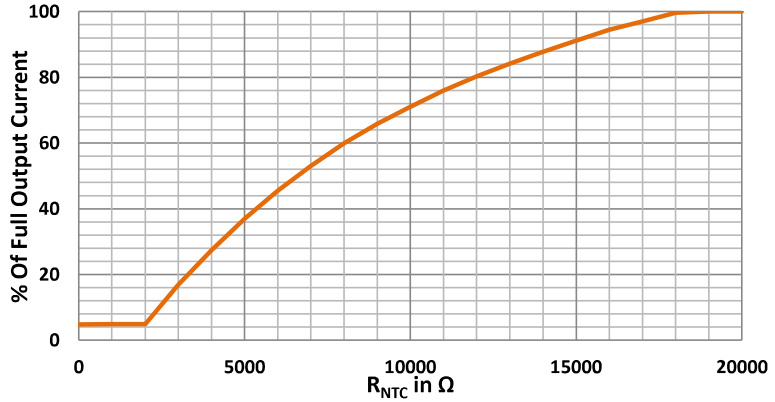
Vishay, EPCOS, Murata, Panasonic are some of the manufacturers of NTC thermistor. EPCOS part number for reference only **B57164K153J (15kΩ @ 25°C).** Murata part number for reference only - **NCP03XH223J05RL** (**22kΩ @ 25°C)**

***Note 4***: Graphs for reference. The derating limits can be programmed using the OT Programmer (51645)

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




**Derating start = 18kΩ; Derating end = 2kΩ; Min output level = 5%**



## INRUSH CHARACTERISTICS

| Vin (V) | Ipeak (A) | T (@ 50% of Ipeak) |
|---|---|---|
| | | |
| 120 | 5.7 | 15µs |
| 277 | 12.7 | 15µs |

## DIMMER COMPATIBILITY

| Manufacturer | Part no |
|---|---|
| | |
| Encelium EMS | EN-LCM-1R10V-GB2-BK<br>EN-LCM-1R10V-GB2-BK/DR<br>EN-ALC-1R10V-GB2-BK<br>EN-ALC-1R10V-GB2-BK-DR |
| OSRAM | 45561 - LC-SL3W-TVWBX/UNV |
| Leviton | IP710-DLX |
| Lutron | DVTV-XX |
| Wattstopper | ADF-120277 |
| Synergy lighting Controls | ISD BC |

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

## UL CONDITIONS OF ACCEPTABILITY (E320395)

Conditions of Acceptability – When installed in the end-product, consideration shall be given to the following:

- The unit employs a R/C (OBJY2), Class B, isolation transformer (T1) on the main PWB. The need to repeat the temperature test shall be determined in end-use product. The unit has a rated TC point of 85ºC.
- The unit was tested on a 20 A branch circuit. If used on a branch circuit greater than this, additional testing may be necessary.
- The PWB spacing for use in Damp locations has been evaluated to UL1310, Clause 24.5 per the Standard for Insulation Coordination Including Clearances and Creepage Distances for Electrical Equipment, UL 840, Table 9.1 for an Overvoltage Category II and Pollution Degree 1 (potted enclosure and under the PWB).
- The drivers are intended for built-in installations. Suitable Mechanical, Electrical and Fire Enclosure shall be determined in the end product application.
- The terminal blocks are intended for factory wiring only. The suitability of the input and output connection shall be determined in the end-use product.
- The products are intended for use in Dry and Damp locations. The use in other environmental locations shall be considered in the end product.
- The unit was not evaluated for supply grounding connection. Consideration for connecting the metal enclosure to a suitable grounding and bonding point shall be considered in the end product.

- These test conditions are for TL rating: This model was tested in a 40°C ambient. For Tref. values see Table Below. Determination to repeat the temperature test shall be made in end-use product. During the normal temperature test of the end product, the temperature at any point on the case is to be monitored and shall not exceed 90°C. When provided the tc in a circle can be a considered a reference hot spot on the case:

| Product | Tref Max | Tref – measured @ 40C |
|---|---|---|
| OT25W/PRG1250C/UNV/XXXXX* | 66°C | 58°C |

*where XXXXX can be DIM or DIM-1 and may be followed by J

## 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.



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