

Light is OSRAM

Preliminary

Product data sheet: OTi DALI 35/220-240/1A0 LT2

SELV Constant current LED driver

Wide operating area up to 1 A - dimmable

The reliable choice for the energy saving lighting: DALI dimmable, embedded corridor functionality and advanced Touch Dim with daylight harvesting, constant lumen output. Digitally programmable. Automatic current set through the LEDset interface.

Benefits

- Wide operating range: 350 – 1050 mA.
- Mobile camera friendly (Amplitude-dimming)
- DALI ed 2 compatible
- Soft Switch off
- Low standby < 100 mW
- Built-in and independent mounting (with opt. kit).
- Suitable for emergency lighting: EL-sign



**OPTOTRONIC® INTELLIGENT**  
**OTi DALI 35/220-240/1A0 LT2**  
 Constant Current LED Power Supply

|                 |               |               |                       |              |           |             |
|-----------------|---------------|---------------|-----------------------|--------------|-----------|-------------|
| $I_{load}$ [mA] | $P_{max}$ [W] | $U_{out}$ [V] | $U_{in}/f_{in}$       | $I_{in}$ [A] | $\lambda$ | $\tau$ [FC] |
| 350 - 1050      | 35            | 15- 54        | 220-240V<br>0.50/60Hz | 0.18         | 0.95      | -20...50    |

$t_c = 75^\circ\text{C}$

CE, EL, SELV, DALI ed 2 compatible, LEDset, OSRAM

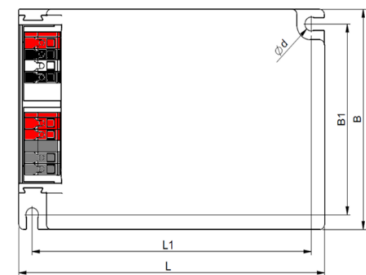
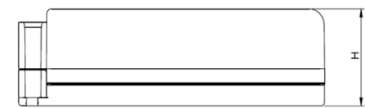
wire preparation  
 push in  
 0.5-1.5A  
 0.5-1.5A  
 0.5-0.8mm

220... 2  
 240V 3

DA 4  
 DA 5

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LED-aux 21  
 LEDset 22  
 LED - 23  
 LED + 24  
 U-OUT = 60V



Approvals



Applications

Downlight and spot.  
 Office – industrial – shop

Housing material: plastic, white.

|   |         |
|---|---------|
| L | 103 mm  |
| B | 67 mm   |
| H | 29.5 mm |

Product Features

- Output current range 350 – 1050 mA
- Amplitude dimming down to 1%
- Fully digitally programmable
- SELV, Uout: 15- 54 V<sub>DC</sub>
- Output power up to 35 W
- Mains voltage 220-240 V
- Overload protection
- Over temperature protection
- Load hot plug protection
- 100`000 h lifetime at t<sub>c</sub> = 65°C
- T<sub>c</sub> max = 75°C
- Wide t<sub>a</sub> range -20...+50°C

## Electrical Specifications

|                                | Item                                     | Value          | Unit                                                                                                     | Remarks                                                                                      |
|--------------------------------|------------------------------------------|----------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| <b>INPUT</b>                   | Nominal Voltage                          | 220 - 240      | V                                                                                                        |                                                                                              |
|                                | Nominal frequency                        | 0 / 50 / 60    | Hz                                                                                                       | Incl. DC or pulse DC                                                                         |
|                                | AC voltage range                         | 198 – 264      | V                                                                                                        |                                                                                              |
|                                | DC voltage range                         | 176 - 276      | V                                                                                                        | DC or pulse DC                                                                               |
|                                | Maximum voltage                          | 280            | V <sub>AC</sub>                                                                                          | 2 h maximum, unit might not operate in this abnormal condition                               |
|                                | Nominal current                          | 0.18           | A                                                                                                        |                                                                                              |
|                                | Total Harmonic Distortion (THD)          | < 10           | %                                                                                                        | Full load, 220-240V, 50Hz / see graphs                                                       |
|                                | Power factor                             | > 0.95         |                                                                                                          | Full load, 220-240V, 50 Hz / see graphs                                                      |
|                                | Efficiency                               | Typical 86     | %                                                                                                        | Full load, 220-240V, 50Hz / see graphs                                                       |
|                                | Power losses                             | 5.7            | W                                                                                                        | Maximum, full load                                                                           |
|                                | No-load power                            | n/a            | W                                                                                                        | Load switching on output side is safe but not permitted                                      |
|                                | Stand-by power                           | <100           | mW                                                                                                       |                                                                                              |
|                                | Protection class                         | II             |                                                                                                          | Suitable for class I and II luminaires                                                       |
|                                | Inrush current                           | < 20           | A pk                                                                                                     | Max, th = 100 µs                                                                             |
| Max. units per circuit breaker | B16: 55<br>B10: 33                       |                |                                                                                                          |                                                                                              |
| <b>OUTPUT</b>                  | Nominal voltage range                    | 15 - 54        | V                                                                                                        |                                                                                              |
|                                | Maximum voltage                          | 60             | V                                                                                                        | No load protection, restart trials every 1-3s                                                |
|                                | Nominal current range                    | 350 - 1050     | mA                                                                                                       | LEDset open: 175 mA; LEDset short: 700 mA (digitally programmable)                           |
|                                | Current accuracy                         | +/- 3          | %                                                                                                        | Digital programming. +/- 5% through the LEDset interface.                                    |
|                                | Current ripple                           | < 2            | %                                                                                                        | Ripple / average @ 100 Hz; Full load                                                         |
|                                | Nominal power range                      | 15 – 35        | W                                                                                                        |                                                                                              |
|                                | Maximum power                            | 35             | W                                                                                                        | LED output                                                                                   |
| Galvanic isolation             | SELV                                     |                | Output to earth – Touch current < 0.7 mA                                                                 |                                                                                              |
| <b>DIM</b>                     | Dimming control                          | Yes            |                                                                                                          | DALI ed2 compatible, TouchDIM                                                                |
|                                | Dimming range                            | 1-100          | %                                                                                                        | Of selected nominal current                                                                  |
|                                | Dimming technique                        | Amplitude      |                                                                                                          |                                                                                              |
|                                | Galvanic isolation                       | Basic / Double |                                                                                                          | Basic DALI to Primary/ Double DALI to Secondary                                              |
| <b>ENVIRONMENT</b>             | Ambient temperature range t <sub>a</sub> | -20...+50      | °C                                                                                                       |                                                                                              |
|                                | Maximum case temperature t <sub>c</sub>  | 75             | °C                                                                                                       | Measured on t <sub>c</sub> point indicated of the product label, t <sub>c</sub> not exceeded |
|                                | Max. case temp. in fault condition       | 110            | °C                                                                                                       |                                                                                              |
|                                | Storage temperature range                | -25...+85      | °C                                                                                                       |                                                                                              |
|                                | Relative humidity                        | 5...85         | %                                                                                                        | Not condensing                                                                               |
|                                | Surge transient protection               | 1              | kV                                                                                                       | L/N acc to EN 61547                                                                          |
|                                | Environmental rating                     | Indoor         |                                                                                                          |                                                                                              |
|                                | IP rating                                | IP 20          |                                                                                                          |                                                                                              |
|                                | Mains switching cycles                   | > 100'000      |                                                                                                          | 10 sec on, 10 sec off                                                                        |
| Expected lifetime              | 50'000<br>100'000                        | hrs            | t <sub>c</sub> = 75°C, 0.2% / 1'000 h failure rate<br>t <sub>c</sub> = 65°C, 0.1% / 1'000 h failure rate |                                                                                              |

### Protections

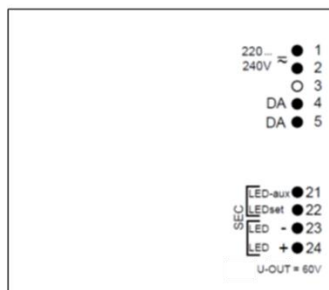
**Overtemperature, Overload, No load, Short-circuit, Input overvoltage, Output overvoltage, Output undervoltage**

See remarks on page 4.

### Wiring Diagram

#### Input

|      |           |
|------|-----------|
| Gray | 1 - Mains |
| Gray | 2 - Mains |
| RED  | 4 - DALI  |
| RED  | 5 - DALI  |



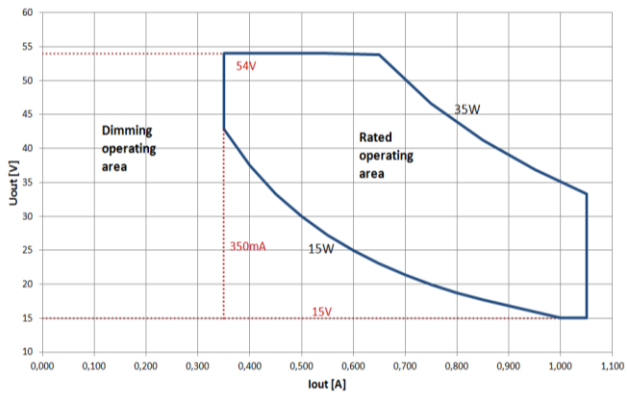
#### Output

|       |              |
|-------|--------------|
| Black | 21 – LED aux |
| White | 22 - LEDset  |
| Black | 23 - LED -   |
| Red   | 24 - LED +   |

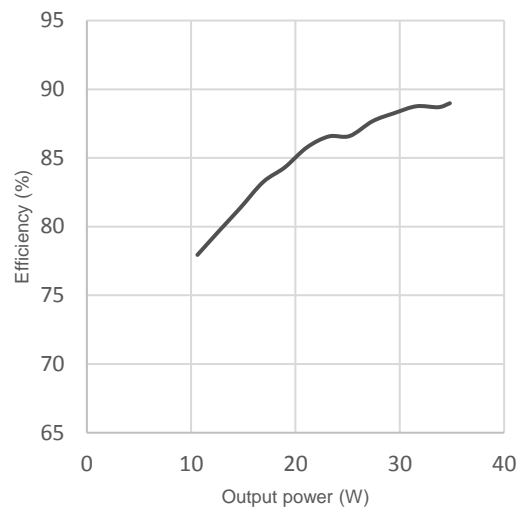
Load wires length: 2m max.

- Wires cross section: massive leads 0,2-1,5 mm<sup>2</sup> / flexible leads 0,2 – 1,5 mm<sup>2</sup>
- Wire peeling length: 8-9 mm

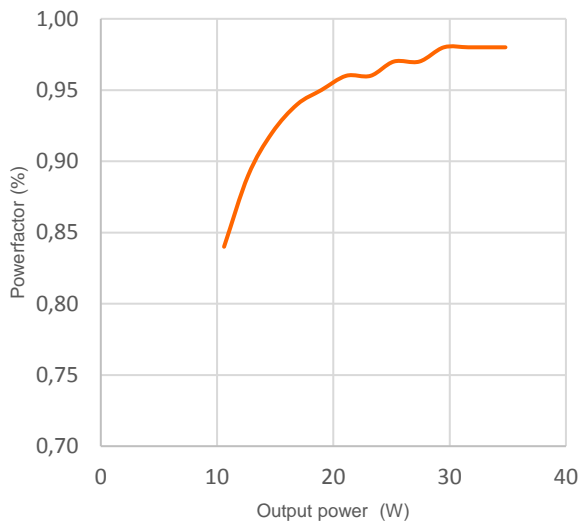
### Typical Operating window



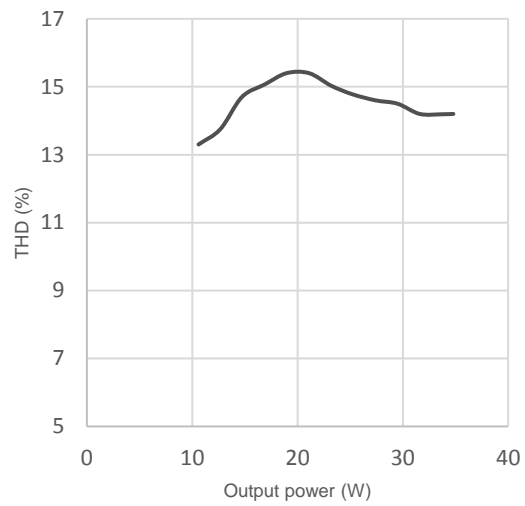
### Typical Efficiency vs Load (230V/ 50Hz)



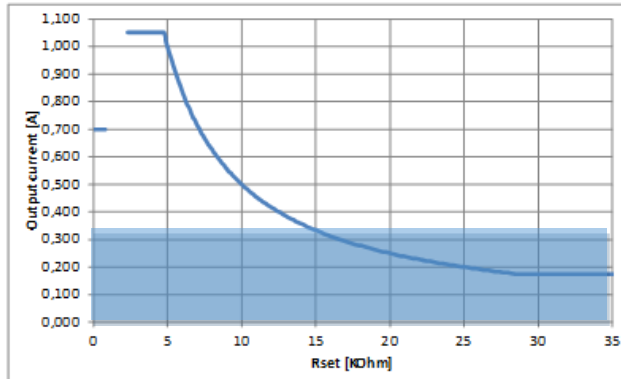
### Typical Powerfactor vs Load



### Typical THD vs Load



## Typical I<sub>out</sub> vs R<sub>set</sub>



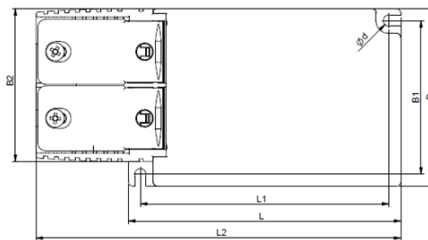
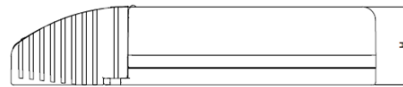
## R<sub>set</sub> formula and standard I<sub>out</sub> values

$$I_{OUT [A]} = \frac{5V}{R_{set[\Omega]}} \times 1000$$

| I <sub>out</sub> [mA]<br>nominal | I <sub>out</sub> [mA]<br>actual | R <sub>set</sub> [kOhm]<br>E48 series |
|----------------------------------|---------------------------------|---------------------------------------|
| 350                              | 357                             | 14                                    |
| 700                              | 699                             | 7.15                                  |
| 1050                             | 1050*                           | 4.64                                  |

\*R<sub>set</sub> value set I<sub>out</sub> = 1078 mA but I<sub>out</sub> is internal limited to 1050 mA please refer to "Typical I<sub>out</sub> vs. R<sub>set</sub>" graph.

|    |        |
|----|--------|
| L  | 103mm  |
| L1 | 94mm   |
| L2 | 138mm  |
| B  | 67mm   |
| B1 | 58mm   |
| B2 | 57,7mm |
| H  | 29,5mm |
| d  | Ø4,2   |



## Remarks

- **Input over voltage protection:** mains up to 280 Vac, for 2 hours maximum, will not destroy both the unit and the load; shut down of load might occur in this condition.
- **Output short circuit / under voltage protection:** shut down of load happens if U<sub>rated</sub> is below 12V (typ. 9V); the unit automatically tries to switch on the load again every 4-5 s for 0.1 s delivering the selected nominal current.
- **Output overload protection:** the unit automatically reduces the output current to keep the output power below 35 W.
- **Output over voltage protection:** the unit tries to stabilize the voltage by reducing the current as necessary down to 50%, if U<sub>rated</sub> still exceeds 54V (typ. 58V) a shutdown will occur; the unit tries automatically to switch on the load again every 4-5 s for 0.1 s delivering the selected nominal current.
- **No load operation:** the unit automatically tries to switch on the load every 4-5 s for 0.1 s delivering the selected nominal current; this operation mode is safe for the unit but is not recommended. Do not put a switch between load and unit.
- **Over temperature protection:** the unit is protected against temporary overheating by automatic reduction of the output current (up to a complete power off) when t<sub>c</sub> > 75 °C (typ. 80°C). The protection is self-restoring.
- **Touch current:** lower than 0.7 mA, according to EN 60598-1 ann. G and EN 61347-a ann. A Max. 2 ECG per luminaire, each ECG supplying separately its load (two or more units cannot be connected together on secondary side).
- **Switchover time:** lower than 0.5 s, both AC and DC mains.
- **Emergency lighting:** this LED power supply is suitable for emergency lighting fixtures acc. to EN 60598-2-22, with emergency output factor EOF<sub>1</sub> = 0,15 ( default value, can be programmed up to EOF<sub>1</sub> = 1) and related duration time of 10 h at least. Function in emergency is ensured up to t<sub>a</sub> = 80°C and t<sub>c</sub> = 92°C.
- **HOT Plug: connection of LED on secondary** is allowed without damage of LED. LED turns on automatically
- For DALI LED drivers (version **DALI ed 2 compatible**), the **corridor function is not available when the Touch Dim function is activated**. To Switch from corridor function to Touch DIM function is only by use of T4T software possible.

**Standards**

EN 61347-1  
EN 61347-2-13  
EN 55015  
EN 61547  
EN 61000-3-2  
EN 62384  
EN 62386

**Ordering information**

| Product name                | Type    | EAN10         | EAN40         | NAED | Pieces / box |
|-----------------------------|---------|---------------|---------------|------|--------------|
| OTi DALI 35/220-240/1A0 LT2 | AA62433 | 4052899488168 | 4052899488175 | n/a  | 20           |
| OT Cable Clamp B-style      | AA62261 | 4052899077881 | 4052899077898 |      | 20           |
| OT Cable Clamp B-style TL   | AB32534 | 4052899948051 | 4052899268227 |      | 20           |
|                             |         |               |               |      |              |
|                             |         |               |               |      |              |
|                             |         |               |               |      |              |
|                             |         |               |               |      |              |

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