

OTi DALI 80/220-240/2A1 LT2 L

SELV Constant current LED driver

Wide operating area up to 2.1 A - dimmable

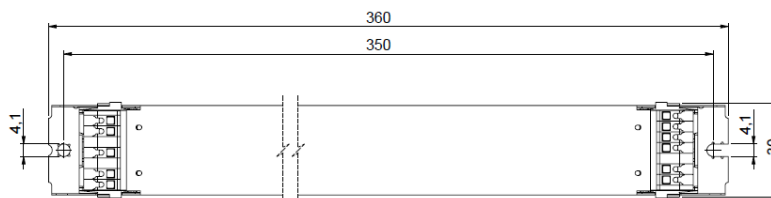
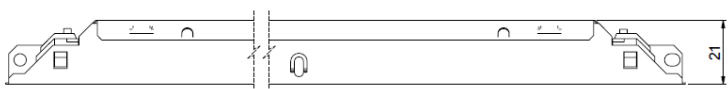
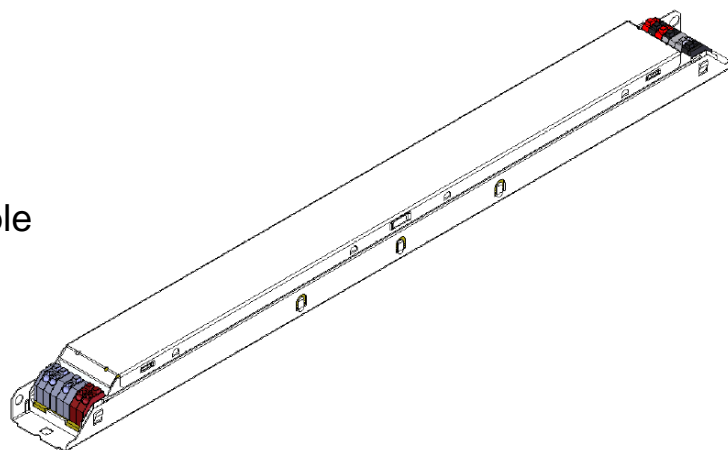
The reliable choice for the energy saving lighting:
DALI dimmable, embedded corridor functionality
and advanced Touch Dim with daylight harvesting,
constant lumen output. Digitally programmable.
Automatic current set through the LEDSet interface.

Benefits

Wide operating range: 1.0 – 2.1 A
Adjustable current via LEDset or via software.
Long lasting and high reliability.
Slim white metal housing 30 x 21 mm.
Double output connectors (parallel connection).
Suitable for emergency lighting units.

Applications

Linear and area lighting.
Office – industrial - shop



Housing material: metal, white painted.

Approval marks

In preparation, if not already printed on product label

Product Features

- Output current range 1.0 – 2.1 A
- Smart dimming down to 1%
- Very low output current ripple
- SELV equivalent U_{out}: 20 – 54 V
- Output power up to 80 W
- Mains voltage 220 – 240 V
- Suitable for emergency lighting
- Overload protection
- Overtemperature protection
- Fully digitally programmable
- 100'000 h lifetime at t_c = 70°C
- t_c max = 80 °C
- Wide t_a range -25 – +45 °C
- 5 years guarantee

Electrical Specifications

| | Item | Value | Unit | Remarks |
|--------------------------------|--|-----------------|------------------|--|
| INPUT | 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 | 350 | Vac | 2 h maximum, unit might not operate in this abnormal condition |
| | Nominal current | 0.43 | A | |
| | Total Harmonic Distortion (THD) | < 20 | % | Full load, 220 – 240 V, 50 Hz / see graphs |
| | Power factor | > 0.95 | | Full load, 220 – 240 V, 50 Hz / see graphs |
| | Efficiency | > 90 | % | Full load, 220 – 240 V, 50 Hz / see graphs |
| | Power losses | 9.0 | W | Maximum, full load |
| | No-load power | n/a | W | Load switching on output side is safe but not permitted |
| | Stand-by power | < 500 | mW | |
| | Protection class | I | | PE can be connected either to terminal or housing |
| | OUTPUT | Inrush current | 53 | A pk |
| Max. units per circuit breaker | | B16: 13; B10: 8 | | I max = 53 A Th = 200 µs |
| PE current | | < 0.5 | mA | Through PE, output floating |
| Nominal voltage range | | 20 – 54 | V | |
| Maximum voltage | | 60 | V | No load protection, restart trials every 2-3 s |
| Nominal current range | | 1000 – 2100 | mA | LEDset open: 500 mA; LEDset short: 2.1 A (digitally programmable) |
| Current accuracy | | +/- 5 | % | |
| Current ripple | | < 200 | mA _{pk} | High frequency ripple (peak); low freq. ripple is negligible |
| Nominal power range | | 32 – 80 | W | Dimmable down to 0.2W |
| Maximum power | | 83 | W | |
| DIMMING | Galvanic isolation | SELV equivalent | | Output and LEDset to mains - Touch current < 0.7 mA |
| | Dimming control | yes | | DALI and TouchDIM |
| | Dimming range | 1 – 100 | % | Of selected nominal current |
| | Dimming technique | mixed | | 1 – 30% PWM, 30 – 70% amplitude |
| | Frequency | > 450 | Hz | 1 – 30%; |
| ENVIRONMENT | Galvanic isolation | basic / double | | Basic DALI to primary-earth / Double DALI to secondary |
| | Ambient temperature range t _a | -25 ...+45 | °C | |
| | Maximum case temperature t _c | 80 | °C | Measured on t _c point indicated of the product label |
| | Max. case temp. in fault condition | 120 | °C | |
| | Storage temperature range | -25 ...+85 | °C | |
| | Relative humidity | 5 ... 85 | % | Not condensing |
| | Surge transient protection | 1 2 | kV | L/N LN/PE acc to. EN 61547-5.7 |
| | Environmental rating | Indoor | | |
| | IP rating | IP 20 | | |
| | Mains switching cycles | > 100'000 | | |
| Expected lifetime | 50'000 | | | t _c = 80°C, 0.2% / 1'000 h failure rate, 14 h ON / 10 h Stan-by per day |
| | 100'000 | h | | t _c = 70°C, 0.1% / 1'000 h failure rate, 14 h ON / 10 h Stan-by per day |

Protections

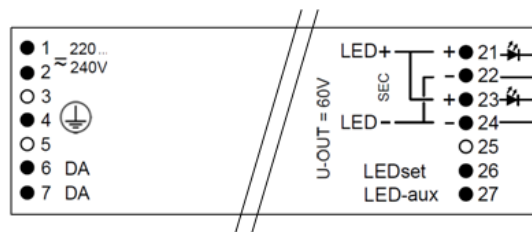
Overtemperature, Overload, No load, Short-circuit, Input overvoltage, Output overvoltage, Output undervoltage

See remarks on page 4.

Wiring Diagram

Input:

- Gray 1 – Mains
- Gray 2 – Mains
- Gray 3 – n/a
- Gray 4 – PE
- White 5 – n/a
- White 6 – DALI
- White 7 – DALI



Output:

- Red 21 – LED +
- Black 22 – LED –
- Red 23 – LED +
- Black 24 – LED –
- White 25 – n/a
- White 26 – LEDset
- Black 27 – LEDset-aux

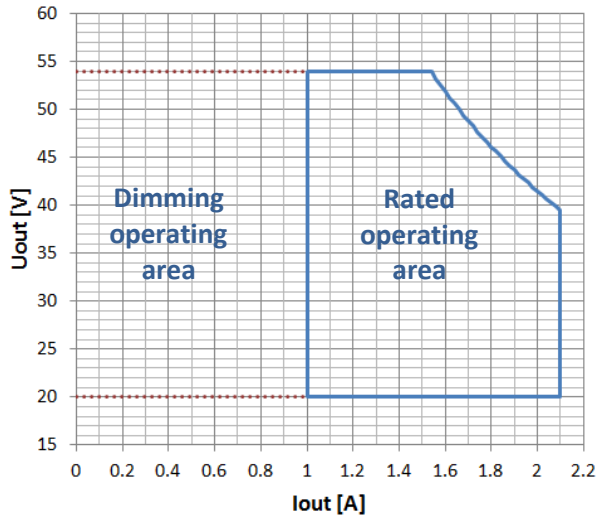
21 & 23 internally connected
22 & 24 internally connected

- Connectors type, both input and output: Wago 250
- Wires cross section: massive leads 0.5 – 1.5 mm² / flexible leads 0.5 – 1.5 mm²
- Wires peeling length: 8.5 – 9.5 mm

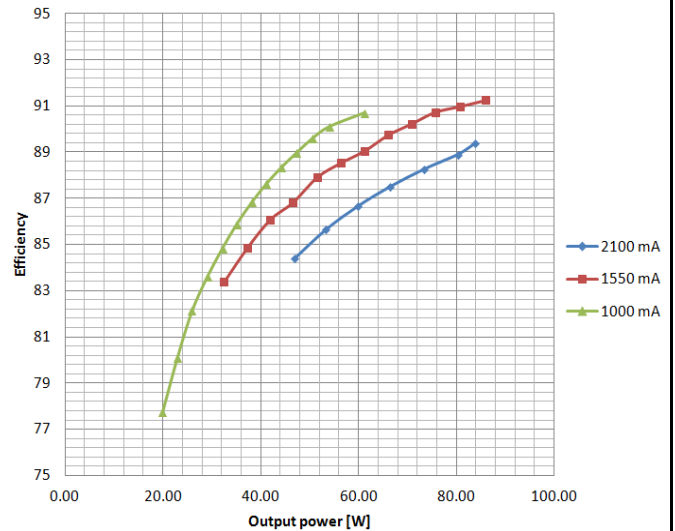
Load wires length: 2 m max

Two or more units cannot be connected together on secondary side with any or more of the 21 ... 27 terminals.

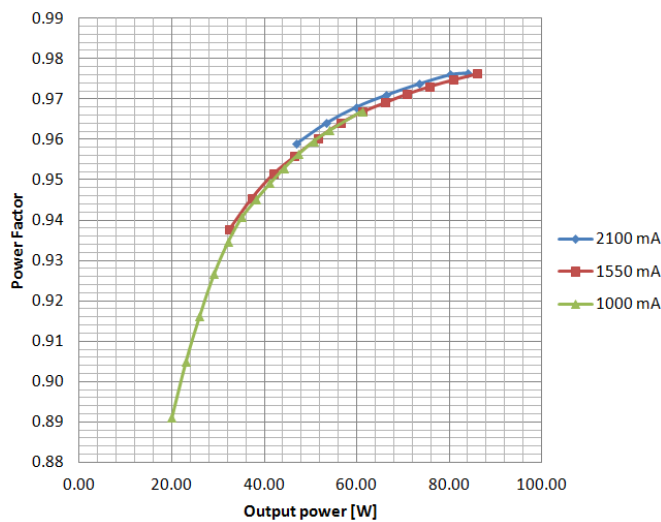
Typical Operating window



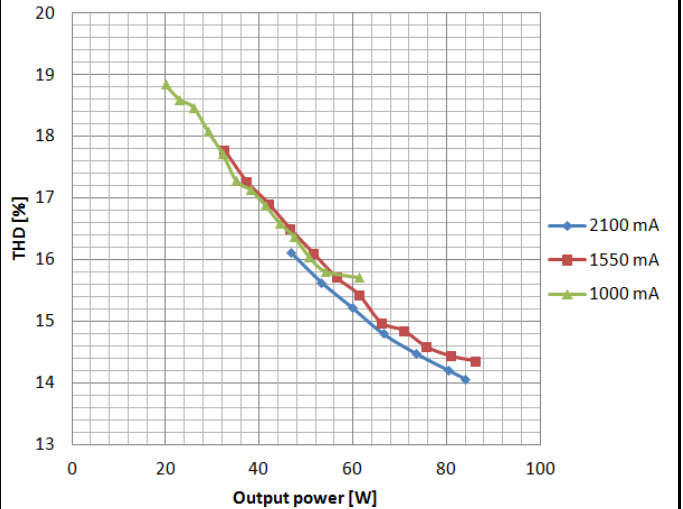
Typical Efficiency vs load



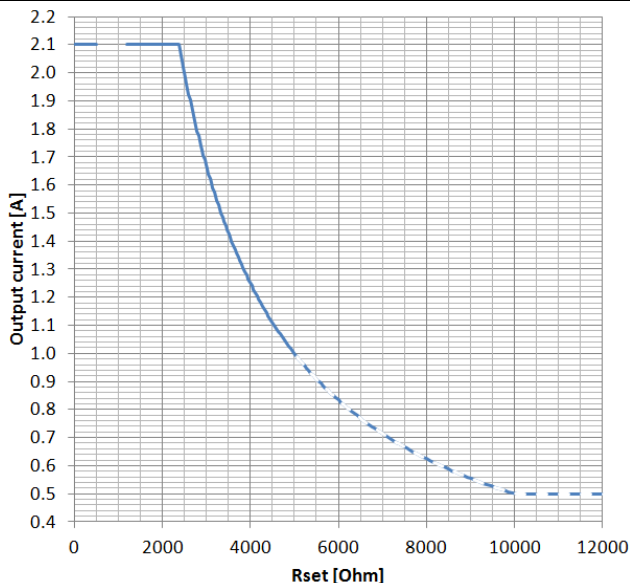
Typical Power factor vs load



Typical THD vs load



Typical lout vs Rset



Rset formula and standard lout values

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

| lout [mA] nominal | lout [mA] set, +/-5% | Rset [kOhm] E48 series |
|-------------------|----------------------|------------------------|
| 1050 | 1064 | 4.7 (E24) |
| | 1027 | 4.87 (E48) |
| 1400 | 1389 | 3.6 (E24) |
| | 1437 | 3.48 (E48) |
| 1600 | 1667 | 3.0 (E24) |
| | 1661 | 3.01 (E48) |
| 2100 | 2100 | 2.2 (E24) |
| | 2100 | 2.37 (E48) |

Refer to the LEDset application note for further details.

Remarks

- **Input over voltage protection: mains up to 350 Vac**, for one hour maximum, will not destroy both the unit and the load; shut down of load might occur in this condition.
- **Output short circuit / undervoltage protection:** shut down of load happens if Uout is below 20V (typ. 18V); the unit automatically tries to switch on the load again every 2-3 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 54W .
- **Output over voltage protection:** shut down of load happens if Uout exceeds 54V (typ. 55V); the unit automatically tries to switch on the load again every 2-3 s for 0.1 s delivering the selected nominal current.
- **No load operation:** the unit automatically tries to switch on the load every 2-3 s for 0.1 s delivering the selected nominal current; despite this operation mode is safe for both unit and load, it 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 when 80°C < tc < 95°C typ., and by automatic power off if 95°C < tc < 100° typ. The protection is self restoring.
- **Touch current:** lower than 0.7 mA, according to EN 60598-1 ann. G and EN 61347-1 ann. A
- **Switchover time:** lower than 0.5 s, both AC and DC mains.
- **Output power hold time:** > 4 ms, in case of mains dips.
- **Emergency lighting:** this LED power supply is suitable for emergency lighting fixtures acc. to EN 60598-2-22; EOF_I = 1% - 100% according to EN61347-2-13 ann J. Continuous output power at ta = 80°C up to 30 W.

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 80/220-240/2A1 LT2 L | AA57587 | 4052899028050 | 4052899028067 | n/a | 20 |
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