

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

SELV Constant current LED driver

Wide operating area up to 2.1 A - dimmable

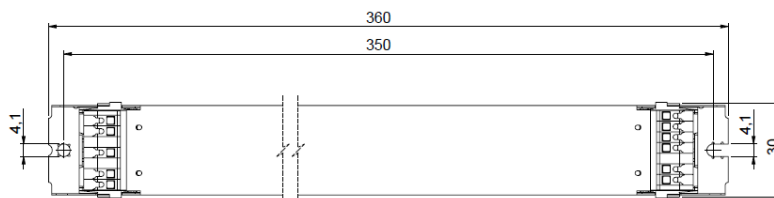
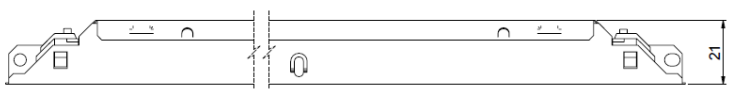
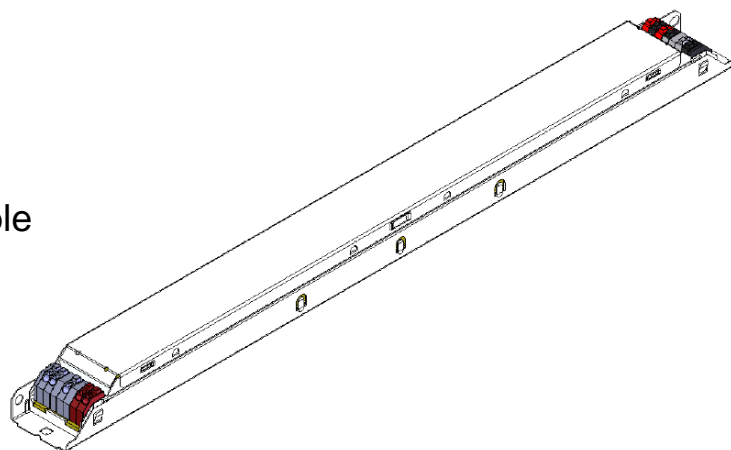
The reliable choice for the energy saving lighting:
DALI dimmable, embedded corridor functionality
and advanced Touch Dim with daylight harvesting,
constant lumen output. Digitally programmable.
Automatic current set through the LEDSet interface.

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
	Inrush current	53	A pk	Max, $t_h = 200 \mu s$
	Max. units per circuit breaker	B16: 13; B10: 8		$I_{max} = 53 A$ $T_h = 200 \mu s$
OUTPUT	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%;
	Galvanic isolation	basic / double		Basic DALI to primary-earth / Double DALI to secondary
ENVIRONMENT	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	50'000 100'000	h	$t_c = 80^\circ C, 0.2\% / 1'000 \text{ h failure rate, 14 h ON / 10 h Stan-by per day}$ $t_c = 70^\circ C, 0.1\% / 1'000 \text{ h failure rate, 14 h ON / 10 h Stan-by per day}$

Protections

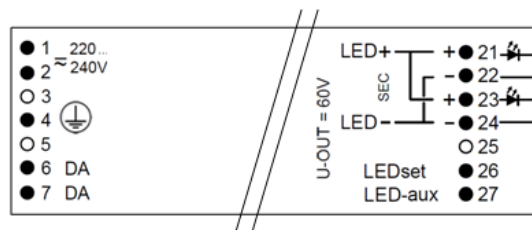
Overtemperature, Overload, No load, Short-circuit, Input overvoltage, Output overvoltage, Output undervoltage

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

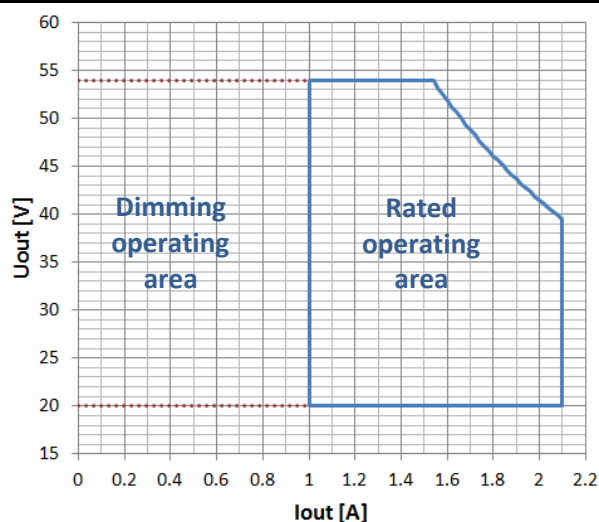
21 & 23 internally connected
22 & 24 internally connected

Load wires length: 2 m max

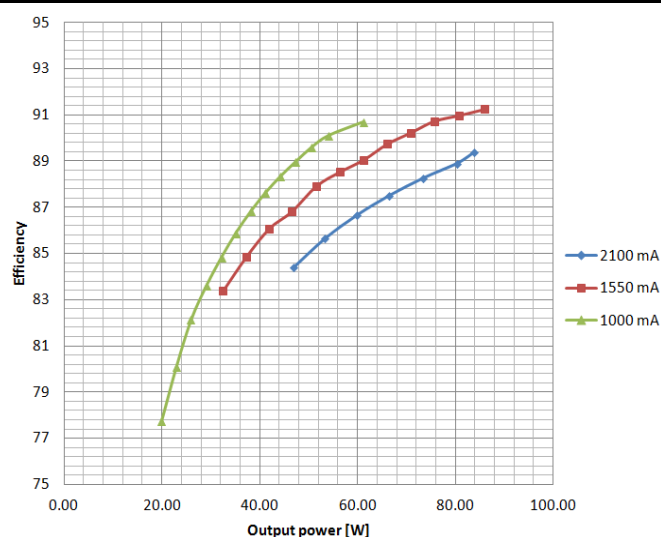
- Connectors type, both input and output: Wago 250
- Wires cross section: massive leads 0.5 – 1.5 mm² / flexible leads 0.5 – 1.5 mm²
- Wires peeling length: 8.5 – 9.5 mm

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

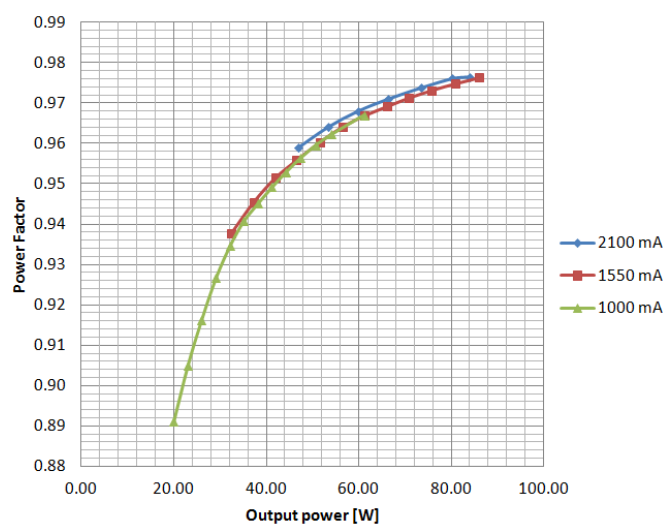
Typical Operating window



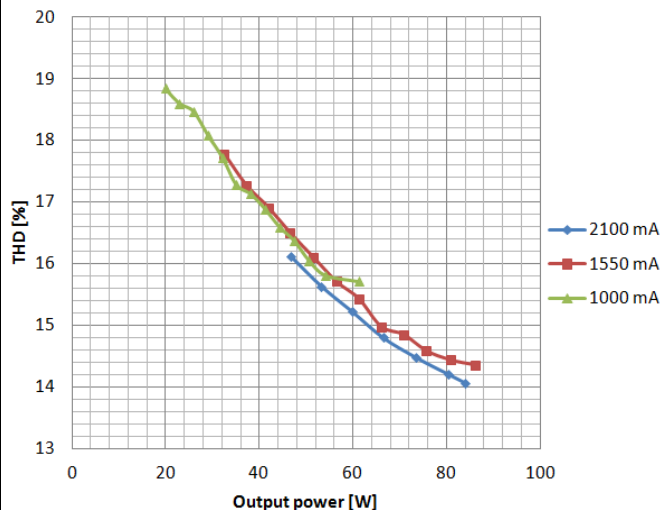
Typical Efficiency vs load



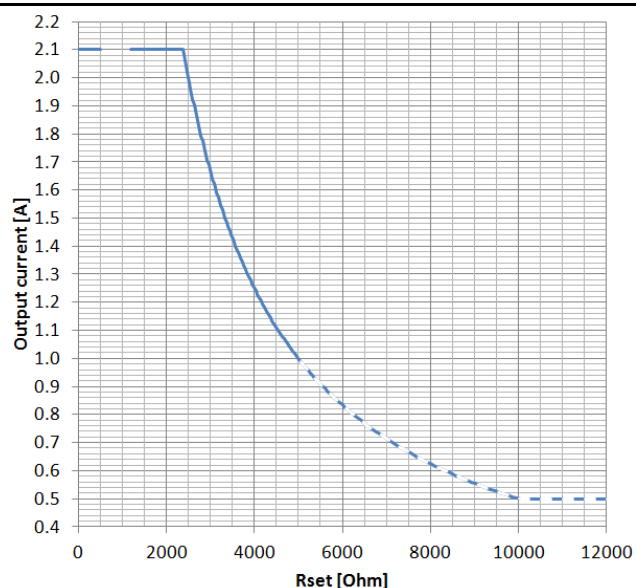
Typical Power factor vs load



Typical THD vs load



Typical Iout vs Rset



Rset formula and standard Iout values

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

Iout [mA] nominal	Iout [mA] set, +/-5%	Rset [kOhm] E48 series
1050	1064 1027	4.7 (E24) 4.87 (E48)
1400	1389 1437	3.6 (E24) 3.48 (E48)
1600	1667 1661	3.0 (E24) 3.01 (E48)
2100	2100 2100	2.2 (E24) 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 $80^{\circ}\text{C} < t_c < 95^{\circ}\text{C}$ typ., and by automatic power off if $95^{\circ}\text{C} < t_c < 100^{\circ}\text{C}$ 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 $t_a = 80^{\circ}\text{C}$ 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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