Light is OSRAM

OTi DALI 50/220-240/24 1CH
OTi DALI 80/220-240/24 1CH

24 V Single-channel Constant Voltage LED driver
Dimmable range 0/0,1% - 100%

Benefits

Long lasting and high reliability.
DALI-2 single channel.
High efficiency in slim form factor.
Patent-pending flicker-free dimming until 0,1%.

Applications

Hospitality, cove lighting, shops.
Suitable for indoor CLASS I and CLASS II luminaires.

Approvals

When not printed on product label, they are under evaluation.

Product Features

- DALI-2 certified
- Single channel
- Lamp Failure detection
- CLASS II independent housing
- Smart Power Supply
- SELV, Vout: 24,2 V
- t_a range -20…+45°C
- Overload/Over temperature and Short circuit protection
- Dimmable via DALI interface
- Very low min dimming level: 0,1%
- Mains voltage: 220–240 V_{ac} / 176–276 V_{dc}
- 50’000 h lifetime at max t_C*
- 5 years guarantee*
- IP20 independent housing
- Touch DIM compatibility
- Emergency lighting compatibility

*10% cumulated failure, 24 h = 14 h ON, 10 h Standby

Electrical specification

	Item	Value		Unit	Remarks / Condition
INPUT	Nominal line voltage	220 – 240		V	
	Mains line frequency	0 / 50 / 60		Hz	
	AC voltage range	198 – 264		V	Max 350 V for 2 h. Auto switch off > 280 V_{ac}
	DC voltage range	176 – 276		V	
	Nominal current	50 W: 0,24 80 W: 0,39		A	Typical @ full load, 230 V_{ac}, 50 Hz
	Total Harmonic Distortion (THD)	< 5		%	Full load, 230 V_{ac}, 50 Hz, 3 % typ. See graphs
	Power factor λ	> 0,95			Full load, 230 V_{ac}, 50 Hz, 0,99 typ. See graphs
	Efficiency in full load	50 W: 92 80 W: 93		%	Typical, steady state @ full load, 230 V_{ac}, 50 Hz, see graphs
	Device power loss	50 W: 4 80 W: 6		W	Full load, 230 Vac, 50 Hz, Typical
	Networked stand-by power	<0,50		W	230 V_{ac}, 50 Hz. Typical 350 mW
	Protection Class	II			
	Suitable for fixtures with prot. Class	I / II			
	Inrush current	50 W: 41 A_{pk} / 150 µs 80 W: 46 A_{pk} / 190 µs			Full Load, 240 V_{ac}, Cold Start Duration = 50% / 50% I_{pk}
	Max. units per circuit breaker:	50 W	80 W	Model	
	Max. ECG no. on circuit breaker 10 A (B)	13	9		B-Type is underusing thermal protection
	Max. ECG no. on circuit breaker 16 A (B)	21	15		
	Max. ECG no. on circuit breaker 25 A (B)	33	23		
	Max. ECG no. on circuit breaker 10 A (C)	22	15		C-Type is the preferable MCB choice
	Max. ECG no. on circuit breaker 16 A (C)	36	25		
	Max. ECG no. on circuit breaker 25 A (C)	56	39		
	Max. ECG no. on circuit breaker 10 A (D)	29	17		D-Type is underusing short-circuit protection
	Max. ECG no. on circuit breaker 16 A (D)	46	28		
OUTPUT	Nominal voltage	24,2		V	
	Voltage accuracy	± 2		%	
	Voltage ripple	< 1		V_{pp}	@ 100 Hz, full load. Typical < 500 mV_{pp}
	Nominal output power	50 W: 0 – 50 80 W: 0 – 80		W	Power factor, harmonics and EMI guaranteed between: 50 W: 18 – 50; 80 W: 30 – 80
	Maximum output power	50 W: 50 80 W: 80		W	At steady state. Smart Power to manage up to Pout_max + 25%
	DC Output power (EL)	15		%	
	Galvanic isolation	SELV			
DIMMING	Dimming interface	DALI 2.0			Proper DALI diagnostics with a min. load of 9% (4.5 / 7.5 W) and dimming > 3%
	Dimming range	0,1 – 100		%	Dali dimming steps (0 – 254)
	Dimming method	PWM			
	TLA (Flicker and strobe effects)	P_{ST} < 1 SVM < 0,4		-	For every dimming condition (n.a. < 1%) Extended SVM metrics (10 kHz).
	Galvanic Isolation	Basic / Double			Basic DALI to Primary / Double DALI to Secondary
ENVIRONMENTAL	Ambient temperature range	-20…+45		°C	
	Max. temperature at T_c test point	50 W: 70 80 W: 85		°C	Measured on t_c point indicated of the prod label, t_a not exceeded
	Max. case temperature in fault condition	115		°C	
	Storage temperature range	-40…+85		°C	
	Permitted rel. humidity during operation	5 – 85		%	Not condensing
	Surge capability (L vs N)	1		kV	L/N according to EN 61547
	Environmental rating	Indoor			
	IP protection class	IP 20			
	Mains switching cycles	> 100000		cycles	
	Expected ECG lifetime	30000		h	@ t_a = 45°C, t_c MAX and 10% failure rate, always ON
		50000		h	@ t_a = 45°C, t_c MAX and 10% failure rate, 14 h ON and 10 h stand-by per day
		100000		h	@ t_c - 10°C and 10% failure rate, 14 h ON and 10 h stand-by per day

	Item	Value	Unit	Remarks / Condition
	No-load proof	Yes		Auto recovery
	Intended for no-load operation	No		
	Overheating protection	Yes		Auto recovery
	Overload protection	Yes		Auto recovery + Smart Power
	Short-circuit protection	Yes		Auto recovery
DIMENSIONS	Height	22	mm	
	Length	346	mm	Overall including fixing brackets
	Width	32	mm	
	Weight	191	g	
	Mounting holes interaxis	303	mm	
	Casing material	Plastic		White
	Type of connection	Screw terminals		0,2 – 1,5 mm²
	Wire preparation length	6 / 5	mm	Input / output terminals

Protection

Over temperature, Overload, Short-circuit, Input overvoltage, Output overvoltage. Reversible.

- Input wires cross section: 0,5 – 2,5 mm². Screw driver: 3,5 mm
- Output wires cross section 0,2 – 1,5 mm². Screw driver: 2,5 mm
- Wire peeling: input 6 mm output 5 mm

LED wire length

EMI compliance was verified with maximum LED cable length of 3 m.

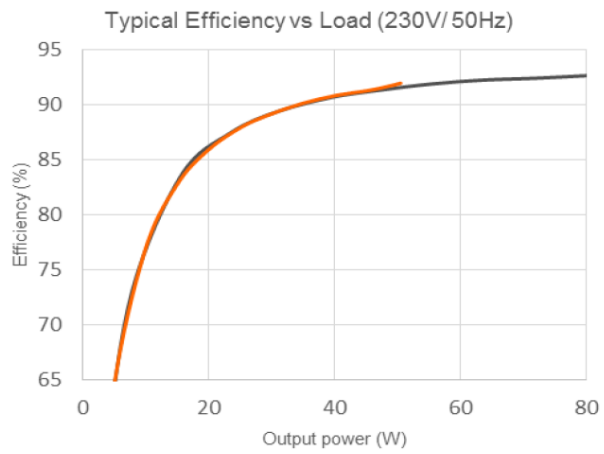
Longer cable lengths are possible, but EMI compliance must be checked in installation. Appropriate wire cross section must be carefully selected to reduce voltage drop. Below matrix shows the maximum LED load power according to cable length and section, at 25°C.

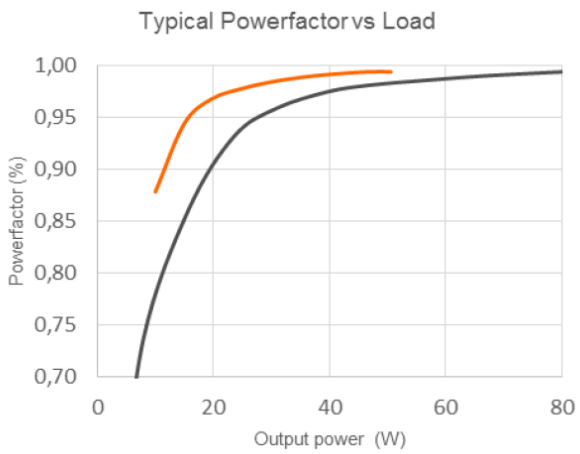
The proper wire section will ensure that the LED module input voltage is at least 23 V in the single-load worst case condition.

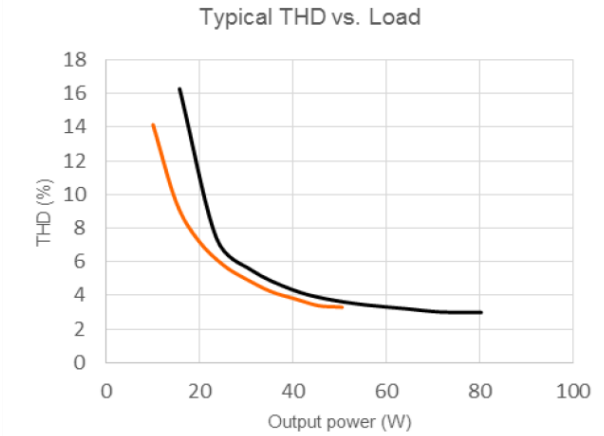
V_{out} 24,2V / nominal 50 W			Cable length [m]					
	AWG	mm²	**5**	**10**	**20**	**30**	**40**	**50**
Cable section	**18**	**0.75**	50	50	29	19	15	12
	17	**1**	50	50	39	26	19	16
	16	**1.5**	50	50	50	39	29	23
	14	**2.5**	50	50	50	50	48	39
	12	**4**	50	50	50	50	50	50

V_{out} 24,2V / nominal 80 W			Cable length [m]					
	AWG	mm²	**5**	**10**	**20**	**30**	**40**	**50**
Cable section	**18**	**0.75**	80	58	29	19	15	12
	17	**1**	80	78	39	26	19	16
	16	**1.5**	80	80	58	39	29	23
	14	**2.5**	80	80	80	64	48	39
	12	**4**	80	80	80	80	77	62
	10	**6**	80	80	80	80	80	80

Values are indicative. Each connection may increase total voltage drop.







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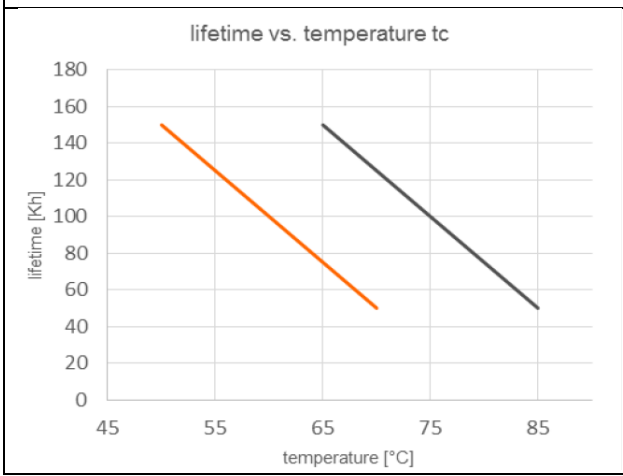
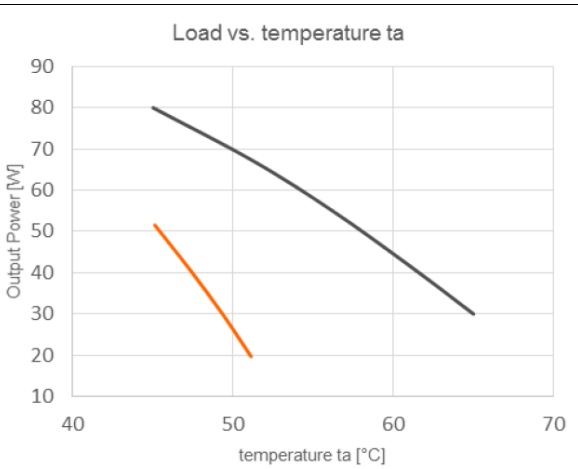
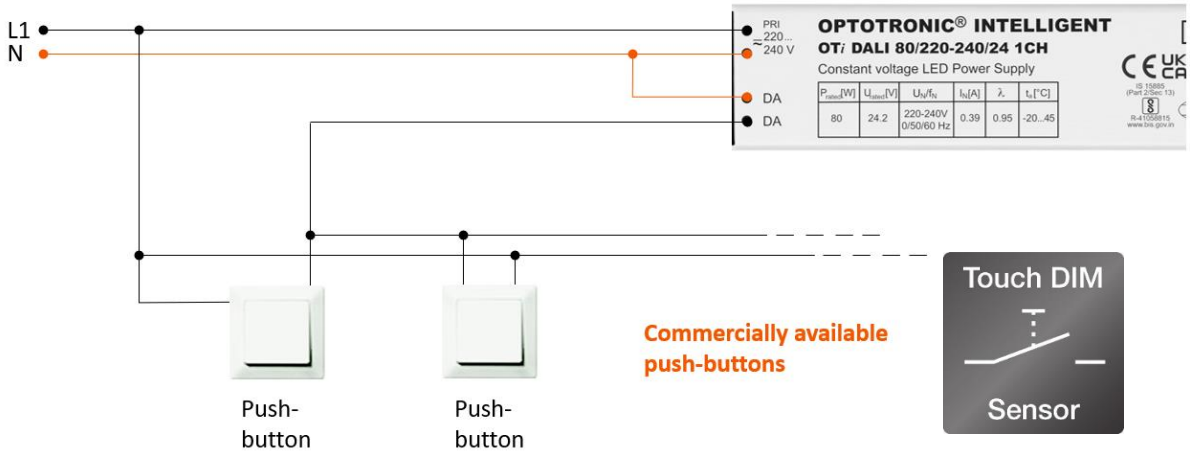




Touch DIM

This driver supports Touch DIM operation, which enables an easy control of light by means of a push-button and additional Presence Sensors and/or Light Sensor directly connected to the DALI terminals. No further programming is necessary, unless additional functions are to be implemented, like fading time, dimming limit levels and so on. For these additional features, the Tuner for Tronic (T4T) is suggested as a convenient tool. For more information, please refer to OSRAM on-line documentation and catalogue.



ADDITIONAL INFORMATION

- The Touch DIM input voltage ranges from 10 Vac to 264 Vac and has single insulation from mains.
- DALI and Touch DIM must never be used at the same time: control is achieved either with DALI controller or with the Touch DIM function (self-recognized and kept at the first press following 5 s without DALI frames after last turn-on or previously programmed via DALI).
- Up to 20 ECGs can be controlled via direct push-button use. The number of push-buttons is limited by the sum of the overall cable length between switch(es) and the connected ECGs: maximum length should not exceed 25 m. In case of longer distances, a small 12 V transformer (AC buttons only) or a DALI repeater must be used to overcome line capacitance.

Touch DIM operation

The following item-list briefly describes the use of push-button for brightness control:

- Switching the lamp on/off: Short Press (< 0,5 s).
- Dimming: Long Press (> 0,5 s); the dimming direction is changed with each press.
- Store reference value: double-click (press twice within 0,4 s) while lamp is *On* → Switch to *Mode 2*.
- Delete reference value: double-click while lamp status is *Off* → Switch to *Mode 1*.
- Long Press while lamp status off: the lamp is switched on at the minimum dimmer setting and faded up until the push-button is released.

Operating Modes

- Mode 1: the switch-on value is always the last brightness/color before the lighting was switched off
- Mode 2: the switch-on value is the value stored by double clicking (default mode)

Re-synchronization

In case of many ECGs connected to the same Touch DIM buttons, there is a chance that an ECG will operate out of synchronism with the others (different on/off state or dimming level).
To have all of them back in synchronism, just apply a Long – Short – Long button press sequence, and in case apply a double-click afterwards to store a new common reference level.

Remarks

- **Product performances below minimal load condition**: the output power is still generated if the load is below the minimum output power (18 W for OTi DALI 50 and 30 W for OTi DALI 80), without any safety risk, but performances regarding THD, EMI, etc. are not guaranteed. See typical operation window graph for details.
- **Output terminals**: All the negative terminals are tied together.
- **Output short circuit protection**: short circuit current is limited without damaging the unit. The short circuit protection is self-restoring.
- **Output overload protection**: in case of overload (< 125%), the device automatically dims down the output to keep the average power within 50 W (for OTi DALI 50) or 80 W (for OTi DALI 80) and let the LED load warm-up. When the load exceeds the 125% of maximum nominal output power, the LED load will blink to manifest a fault condition, till the short circuit limit (> 200%).
- **Input over voltage protection**: driver is capable of having input of max 350 V for 2 hours. To prevent damages to the unit, driver performs auto switch off when input voltage is > 280 V_{ac}, therefore driver operation in this abnormal condition is not guaranteed. The over-voltage protection is self-restoring.
- **Lamp failure detection**: minimum load that doesn't trigger open circuit detection is 4.5 W (for OTi DALI 50) and 7.5 W (for OTi DALI 80).
- **No load operation**: do not put a switch between ECG and load.
- **Over temperature protection**: the driver is protected against temporary overheating, so it automatically dims down when t_c is exceeded, and eventually turns off. The protection is self-restoring.
- **Emergency lighting:** this LED power supply is suitable for emergency lighting fixtures acc. to EN 60598-2-22, with emergency output factor EOFI = 0,24 for OTi DALI 50 and EOFI = 0,15 for OTi DALI 80 (default values, programmable up to EOFI = 1 with P_{max} 12 W) and related duration time of 10 h at least. Function in emergency is ensured up to t_a = 80°C and t_c = 96°C.
- **Ecodesign regulation information:**
  Intended for use with LED modules. Separate control gear and light sources must be disposed of at certified disposal companies in accordance with Directive 2012/19/EU (WEEE) in the EU and with Waste Electrical and Electronic Equipment (WEEE) Regulations 2013 in the UK. For this purpose, collection points for recycling centres and take-back systems (CRSO) are available from retailers or private disposal companies, which accept separate control gear and light sources free of charge. In this way, raw materials are conserved and materials are recycled.

Standards

EN 61347-1
EN 61347-2-13
EN 61547
EN 61000-3-2
EN 60598-2-22
EN 62384
EN 62346

Ordering information

Product name	EAN 10	EAN 40	Pieces / Box
OTi DALI 50/220-240/24 1CH	4062172177962	4062172177979	20
OTi DALI 80/220-240/24 1CH	4062172177986	4062172177993	20

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