LED DRIVER · DALI-2 DT6/DT8 · TUNABLE WHITE · CONSTANT VOLTAGE

WS-DT8-CV240

240 W, 24 VDC tunable-white LED driver · DALI-2 DT8 / DT6 and Push DIM / CCT · NFC



240 W	DT8 / DT6	0.01–100 %	94 %	PF > 0.99	Flicker-free
max. output, 24 VDC	DALI-2, tunable white	dimming range	efficiency, typ.	THD max. 5 %	IEEE 1789

1 Features

- DALI-2 DT8 (colour temperature) or DT6, plus Push DIM and Push CCT from standard push buttons.
- Tunable white with constant power: brightness stays the same while the colour temperature changes.
- Two 24 V channels (warm W and cool C) with common +; up to 240 W per channel, 240 W in total.
- Ultra-deep PWM dimming down to 0.01 %, soft-on and fade-in; flicker-free (IEEE 1789 high-frequency exemption).
- NFC programming without power: DALI address, dimming mode, PWM frequency, dimming curve, groups and scenes.
- Networked standby < 0.5 W (EU ErP).
- Over-temperature, over-voltage, overload and short-circuit protection with automatic recovery.
- V0 flame-retardant PC housing, screwless strain relief, removable end caps. Class II; up to 100,000 h lifetime.

Load type. For constant-voltage LED loads with resistor current limiting (e.g. 24 V LED strip). LED fixtures with built-in constant-current ICs cause very high inrush current and trigger overload protection (flicker). For such loads, ask Wonder Smart for a driver with a special setting.

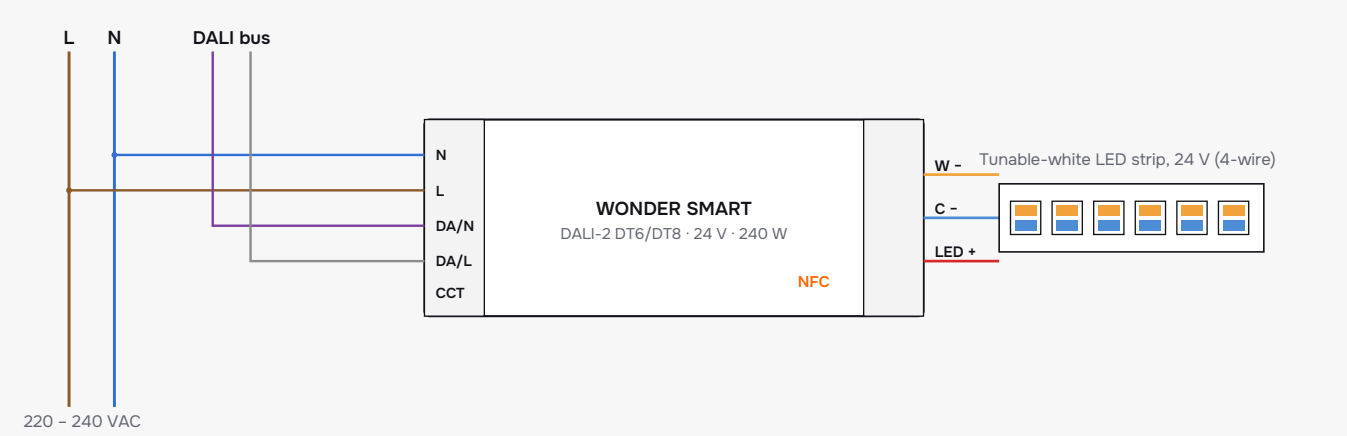
2 Specification

Model		WS-DT8-CV240 · 240 W DALI-2 DT8 tunable-white LED driver, 24 VDC
OUTPUT	Output voltage	24 VDC ± 0.5 V
	Output current	max. 10 A
	Output power	max. 240 W
	Voltage accuracy	±5 %
	Ripple	max. 200 mVp-p
	Output type	Constant voltage, 2 channels (W, C), common +
	PWM frequency	3600 Hz default; 300 – 22,000 Hz via NFC
	Dimming range	0 – 100 %, down to 0.01 %
INPUT	AC voltage	220 – 240 VAC, 50/60 Hz
	DC voltage	200 – 250 VDC (no dimming on DC input)
	Input current	max. 1.18 A at 230 VAC
	Efficiency (typ.)	94 %
	Power factor	> 0.99 at 230 VAC, full load
	THD	max. 5 % at 230 VAC, full load
	Inrush current	Cold start 55 A (1.2 ms at 50 % Ipeak), 230 VAC
	Leakage current	max. 0.5 mA
	Surge	L–N: 2 kV
	Standby power	< 0.5 W (networked standby)
CONTROL	Dimming interface	DALI-2 DT8 / DT6, Push DIM / Push CCT
	Colour temperature	Adjustable 1000 – 10,000 K (limits set to the LED strip used)
	Priority	DALI first, then Push DIM / CCT
PROTECTION	Over-voltage	Output off at 28 V and above, automatic recovery
	Overload	Output off at 102 % and above rated power, automatic recovery
	Short circuit	Hiccup mode, automatic recovery
	Over-temperature	Output reduced or off at PCB 110 °C and above, automatic recovery
ENVIRONMENT	Operating temperature	ta -20 … +45 °C; tc 86 °C
	Humidity	20 – 95 % RH, non-condensing
	Storage	-40 … +80 °C, 10 – 95 % RH
	Temperature coefficient	±0.03 %/°C (0 – 50 °C)
	Vibration	10 – 500 Hz, 2 G, 72 min per axis
SAFETY & EMC	Withstand voltage	I/P – O/P: 3750 VAC
	Isolation resistance	I/P – O/P: 100 MOhm / 500 VDC
	Safety standards	EN 61347-1, EN 61347-2-13, EN 62384, EN 62493
	EMC	EN 55015, EN 61000-3-2, EN 61000-3-3, EN 61547, EN 61000-4-2/3/4/5/6/8/11
	Flicker	IEEE 1789 high-frequency exemption; Pst LM max. 1.0, SVM max. 0.4
GENERAL	Protection class	Class II, suitable for class I / II / III luminaires
	Ingress protection	IP20
	Dimensions	380 × 49.5 × 30 mm
	Weight	555 g ± 10 g
	Wire size	Input 0.75 – 1.5 mm², strip 10 – 11 mm · Output 1.0 – 1.5 mm², strip 6 – 7 mm
	Lifetime	up to 100,000 h

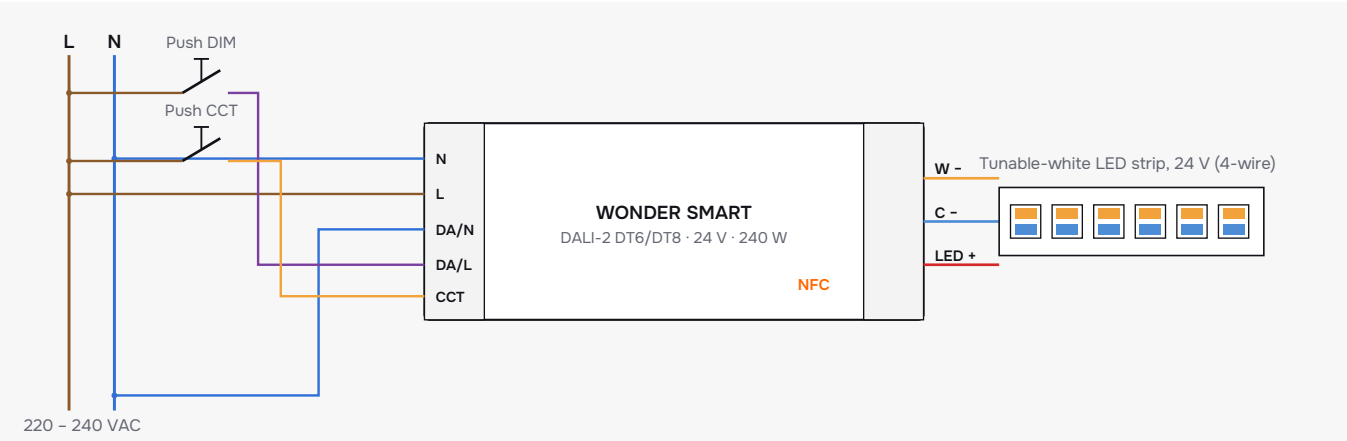
Specifications are subject to change without notice.

3 Wiring

3.1 DALI-2 (DT8 / DT6)



3.2 Push DIM / Push CCT



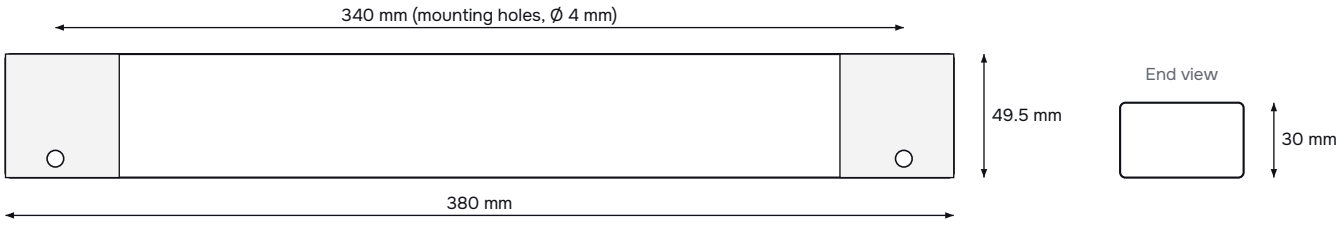
LED output is 4-wire: W - (warm), C - (cool) and common +. DALI has priority over Push DIM / CCT. Dimming does not work on DC input.

4 Push button operation

	Push DIM (DA/L terminal)	Push CCT (CCT terminal)
Short press	On / off	Reset to the default warm colour
Long press	Continuous dimming 0 – 100 %; each new long press reverses direction	Continuous colour change; each new long press reverses direction
Memory	Returns to the last brightness when switched on	Returns to the last setting when switched on

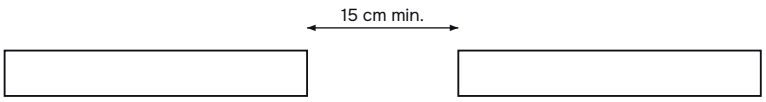
Several drivers on one button. If they get out of step, press and hold Push DIM until all lights are on, short-press to dim, then press and hold again until full brightness. For colour mismatch, short-press Push CCT to reset all to the default warm colour.

5 Dimensions

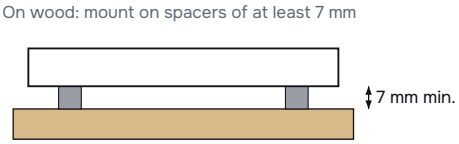


6 Installation

Opening the terminal covers. Press the back of the end cover and slide it sideways to remove it. Lift the wire clamp with a screwdriver, connect the wires and press the clamp down.



Keep at least 15 cm between drivers and from other power supplies. Do not stack.



Constant-power design: the W and C channels can each be loaded up to 240 W; the driver keeps the total output within 240 W, so brightness stays the same across colour temperatures.

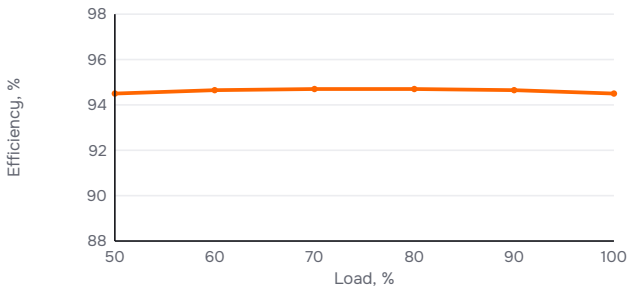
7 Configuration with a phone over NFC

Write settings with the driver unpowered. Use an NFC phone (Android, or iPhone 8 or later with iOS 13+) and the Wonder Smart NFC configuration app; ask Wonder Smart for the download link.

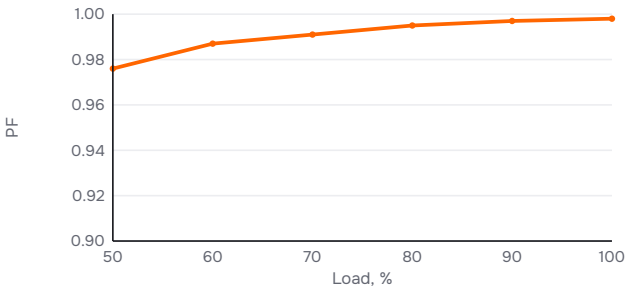
1. **Read**: open Read/Write LED driver and hold the phone over the NFC mark on the driver.
2. **Dimming interface**: choose DT8 Tc (1 address, tunable white), DT6 CT (2 channels, brightness + colour), or DT6 DIM (1 address / 1 channel, 1 address / 2 channels, or 2 addresses / 2 channels).
3. **Parameters**: set DALI address, PWM frequency, dimming curve, colour temperature limits and the advanced DALI template (groups and scenes).
4. **Write**: tap Write and hold the phone over the NFC mark until confirmed. Then power the driver.

8 Performance

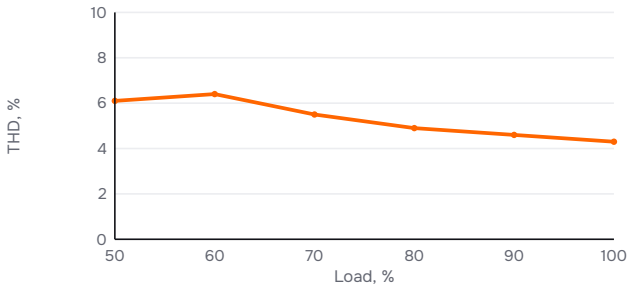
Efficiency vs load (230 VAC)



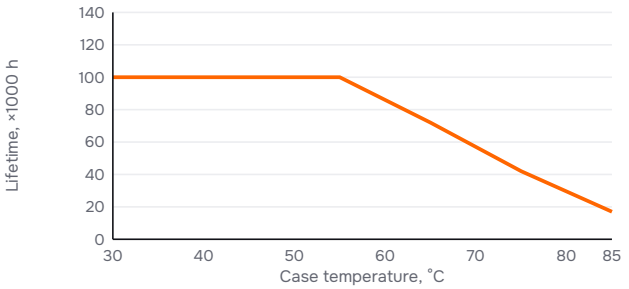
Power factor vs load (230 VAC)



THD vs load (230 VAC)



Lifetime vs case temperature



9 Drivers per circuit breaker

Maximum number of drivers per MCB. Inrush: cold start 55 A (1.2 ms at 50 % Ipeak), 230 VAC.

MCB type	10 A	13 A	16 A	20 A	25 A
B	2	3	4	5	6
C	4	4	4	5	7
D	3	3	5	6	8

- Quantities vary with MCB brand and model; do not exceed them on site.
- Reduce the number when the ambient temperature exceeds 30 °C or several MCBs are mounted side by side.
- Type B is usual for residential lighting, type C for commercial lighting.

10 Support

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