wDALI-2 CW-WW BT LED Dimmer CV

Datasheet

Wireless Control Gear

CW-WW BT LED Dimmer (CV, DT6)

Art. Nr. 89453836-BT (4A)

Datenblatt Deutsch:
https://www.lunatone.com/wp-content/uploads/2026/08/89453836-BT_wDALI-2_BT_CWWW_LED_Dimmer_CV_GER_D0152.pdf

wDALI-2 CW-WW BT LED-Dimmer CV Control Gear

Overview

- Bluetooth DALI-2 Dimmer for control of tunable white luminaries – DALI DT8
- suitable for control of constant voltage LED-modules wirelessly via DALI
- wireless DALI connection via wDALI-2 Bridge, per Bridge up to 10 devices can be paired.
- **Operating Mode DT8:** one DALI address fort he independent control of light level and colour temperature (DALI DT8, Colour Type Tc)
- **Operating Mode Balance&Dim:** control by 2 DALI-addresses, one for adjusting the light level and one for adjusting the channel balance (e.g. colour temperature)
- **Operating Mode Dim2Warm:** one DALI-address for simultaneous adjustment of light level and colour temperature
- dimming range 0.1%-100%
- adjustable PWM-frequency 122Hz / 250Hz / 500Hz / 1kHz
- compact housing for integration in luminaires
- supply voltage from 12V to 28V DC
- max. input current of 4A, the maximum input current can be freely distributed between the channels
- low standby power consumption
- high efficiency
- configuration via PC-software DALI-Cockpit and DALI interface (e.g. DALI USB)
- user-friendly factory default settings
- LED calibration for light adjustment
- Configurable RESET behaviour

CE UK CA

Specification, Characteristics

type	**wDALI-2 CW-WW BT CV**
article number	89453836-BT

supply: V+, V- (GND)	
type of input	supply, DC
marking terminals	V+, V-
supply voltage V_{in}	12V DC … 28V DC (SELV)
max. input current I_{in_max}	4A
standby power consumption	~120mW @12V
power on behaviour	configurable via DALI: 0%-100% or last actual level

output: LED+ CW, WW	
output type	LED dimmer, constant voltage PWM
marking terminals	LED+ CW, WW

number of outputs	2
PWM frequency	122Hz/250Hz/ 500Hz / 1kHz

environmental conditions

operational ambient temperature Ta	-20°C … +60°C
storing and transportation temperature	-20°C … +75°C
rel. humidity, none condensing	15% … 90%

general data

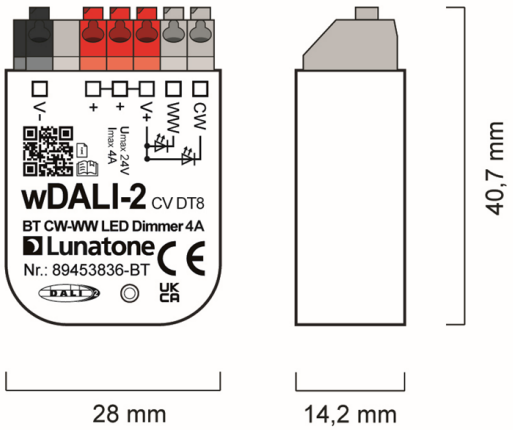
dimensions (l x w x h)	41 x 28 x 14 mm
mounting	back box
rated maximum temperature tc	75°C
expected lifetime (T<Tc)	>100.000h
protection class	II in intended use
protection degree	IP20
number of DALI-addresses	mode: Balance&Dim: 2 mode: DT8, Dim2Warm: 1
wireless technology / policy	Bluetooth 5

terminals: V-, V+, LED+, Ch1-, Ch2- / CW-, WW-

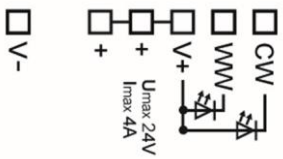
connection type	spring terminal connector (push in cage clamp)
wire size solid core	0,2 … 1,5mm² (AWG 24 … AWG 16)
wire size fine wired	0,2 … 1,5mm² (AWG 24 … AWG 16)
wire size using wire end ferrule	0,25 … 1mm²
stripping length	8,5 … 9,5mm / 0,33 … 0,37 inch
actuation type	push button

standards

EMC	EN 61547 EN 55015 / IEC CISPR15
electrical safety	EN 61347-2-13 EN 61357-1
performance	EN 62384
markings	CE, UKCA



dimensions



connection plan

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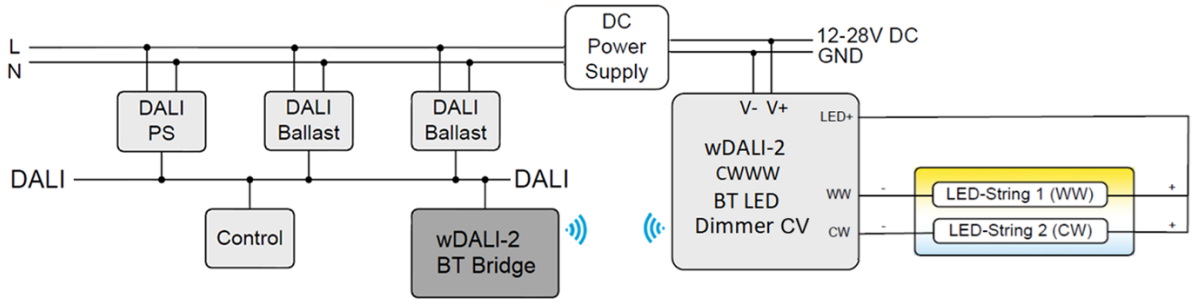
Application Example



Installation

RECOMMENDATION: Care should be taken on keeping cable lengths between DC power supply and dimmer, as well as between dimmer and luminaires (Led-Strings), as short as possible. This kind of installation will minimize the influence of voltage drops.

- The wDALI-2 BT LED Dimmer is intended for back box installation or integration in luminaires. Ensure proper working cable relief for installation in protection class II devices
- When installing and positioning, attention must be paid to the environment; metal housings and moisture as well as sources of interference impair the radio functionality. On problems with reception, check alternative position or orientation of the device.
- Range of the wireless connection up to 150m outdoors, inside buildings, depending on construction 8-12m. The communication is encrypted and based on BT5 protocol.
- The wiring should be carried out as a permanent installation in a dry and clean environment.
- Installation may only be carried out in a voltage-free state of the system and by qualified specialists.
- National regulations for setting up electrical systems must be followed.
- Connect the terminals V+ and V- only to a DC supply voltage of category SELV (Safety Extra Low Voltage).
- Connect only one wire on each terminal, if twin ferrules are used take care to the maximum wire size.
- The device is designed for 4A input current. External protection must be provided to ensure that this current is not exceeded permanently, even in the event of a fault or short circuit. If two dimmers are powered by one power supply, depending on the quality of the power supply regulation, mutual interference may occur, resulting in visible light fluctuations during dimming.

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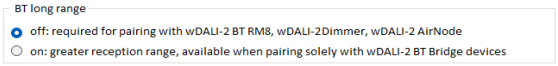
Commissioning

- After connection the Dimmer needs to be paired to a wDALI-2 BT Bridge for control over DALI. Settings and device configuration can then be applied via DALI, with the wDALI-2 BT Bridge in the DALI Cockpit.
- For configuration of the device the PC with the DALI Cockpit Software, must be connected to the DALI bus with the wDALI-2 Bridge, via a suitable interface module (DALI-2 USB; DALI USB, DALI-2 WLAN, DALI-2 Display, DALI-2 IoT, DALI 4Net, DALI SCI RS232). Information on addressing and pairing to the wDALI-2 BT Bridge see section “Pairing”.
- After pairing the wDALI-2 BT Dimmer will be found during the addressing process. The device is then available in the DALI Cockpit device overview
- Scene values, groups, DALI parameters and device specific settings can be configured in the DALI Cockpit, see section DALI Cockpit: General Settings page 7 and following.
- The "Identify" function can be used for localization after addressing. With the DALI command IDENTIFY, or selecting the checkbox “localise” in the DALI Cockpit.

Pairing

1. Connect the DALI interface (e.g. DALI-2 USB) to the DALI bus and the PC and start the DALI Cockpit software.
2. Start device addressing. An address is assigned to the DALI bridge and the device is displayed in the device tree.
3. Open the wDALI-2 Bridge device page, in the settings select the mode “Master"

4. At section “BT long range” select option “off”



and save the changes to the device

5. Start the search for the surrounding devices with "Pair Devices".

The found devices are listed, the search can be ended by selecting “stop”

6. Select the desired devices via the checkbox and press save to pair them with the master device. A maximum of 10 devices can be paired to one DALI Bridge.
7. If the sub-lines should be addressed: in section „DALI Queries“, enable the option „ forward DALI-Queries to Slave devices“

and save the changes to the device

8. Restart the addressing as "System extension" via or the DALI interface device "Addressing".
9. The wDALI-2 devices are found and listed in the DALI Cockpit device tree as sub-items of the master bridge.

10. The respective device pages can be selected, read

and configured

via the DALI Cockpit and master bridge, identical to other DALI bus devices.

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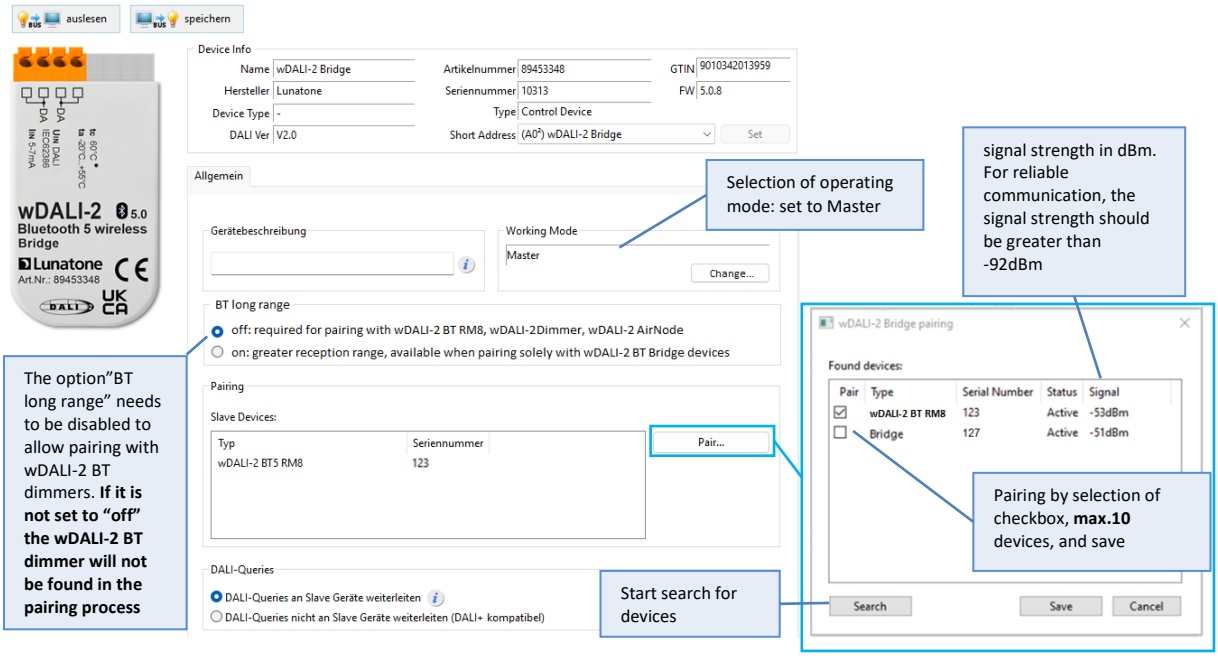


Figure 1 Coupling wDALI-2 Bridge

Operating Modes

The device offers several operating modes: DT8, Balance&Dim and Dim2Warm

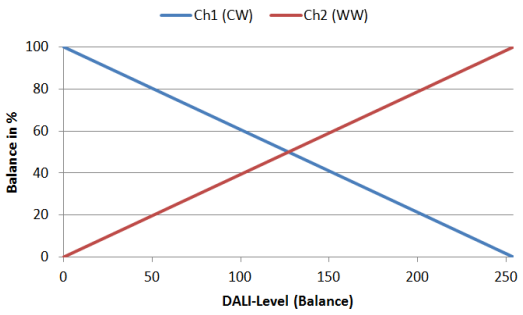
DT8 (factory default)
In this operating mode one DALI-address for the independent control of light level and colour temperature is used (Device Type 8 Mode Tc). The dimmers support DALI 2 commands.

Balance&Dim
This operating mode is also suitable for operating tunable white luminaires using two DALI-addresses. The first controls the light level and the second is used for changing the distribution on the output channels (e.g. for tunable white applications or balancing direct/indirect lighting).

The Balance&Dim mode allows colour temperature adjustments without affecting the light level and vice versa. For each channel only DALI-standard commands like dim up/down but also DAP are used. Thus, the device can be used with all common controls and gateways (e.g. KNX). The Balance&Dim mode provides an alternative to the DT8-Tc mode.

Can be operated via DALI

DALI-address 1: light level
DALI-address 2: balance



Dim2Warm
Both output channels are controlled by one DALI-address. The balance is coupled directly to the DALI dim level – the smaller the dim level the warmer the light.

DALI-address: Dim2Warm (Master)
short press: On/Off
long press: dimming

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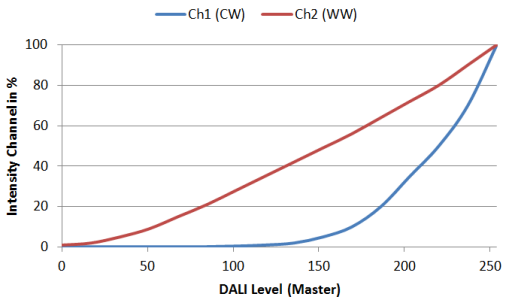
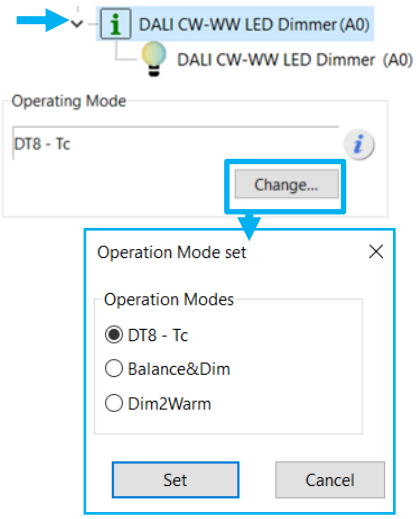


The dim2warm table can be edited in the DALI Cockpit Software – see section DALI Cockpit: General Settings and page 7 (Overview operating mode Dim2Warm).

Selection of operating mode

With the help of the PC-software tool DALI-Cockpit the operating mode can be easily set on the general settings page.



Switching between operating modes can also be done with the help of the DALI-command SET OPERATING MODE (IEC 62386-102 Ed.2). When changing the operating mode the number of used DALI-addresses can change as well and this requires a new addressing procedure. In the DALI-Cockpit this address assignment is performed automatically.

Operating Modes

Number	Operating Mode
0x0	DT8
0x92	DT8 (factory default)
0x94	Balance&Dim
0x95	Dim2Warm

DALI Cockpit: General Settings

On the overview page respective control elements are available for each operating mode

- *DT6:* 2 sliders, one for the light level of each respective channel
- *Balance&Dim:* 2 sliders, one for level and one for balance,
- Dim2Warm: slider for input value adaption and Edit-Function for the Dim2Warm-table.

PWM Frequency

The PWM frequency can be selected: 122Hz / 250Hz / 500Hz / 1kHz.

Ignore Broadcast Commands

The broadcast control of each channel can be deactivated individually. Through selection of “Ignore Broadcast”, the respective channel does no longer respond to broadcast commands on the DALI bus (group assignments are not ignored).

Adjustable RESET behaviour

The response to a DALI reset command is configurable. The following options are available:

- *Ignore command*: the DALI reset command does not trigger any changes to the device settings.
- *DALI standard*: the selected device settings are reset to the values defined in the DALI standard (see table 1 below - second column: DALI standard values)
- *Custom settings*: the current device settings can be saved. With a DALI Reset command, the selected parameters (6 check boxes) are then reset to these saved values.

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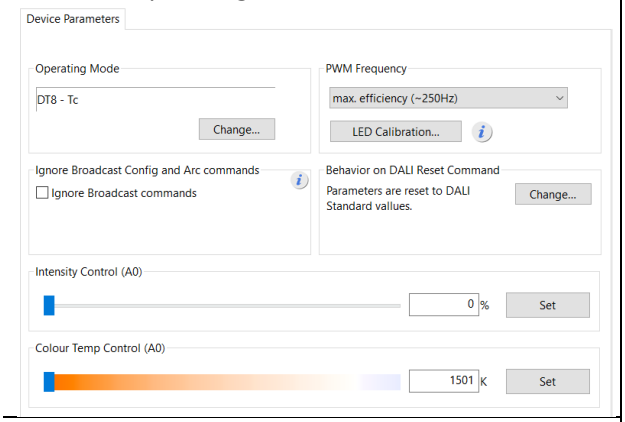
Calibration - light adjustment

The dimming range reaches from 0.1% to 100%. It is possible to calibrate different light sources, with the option: “LED Calibration”.

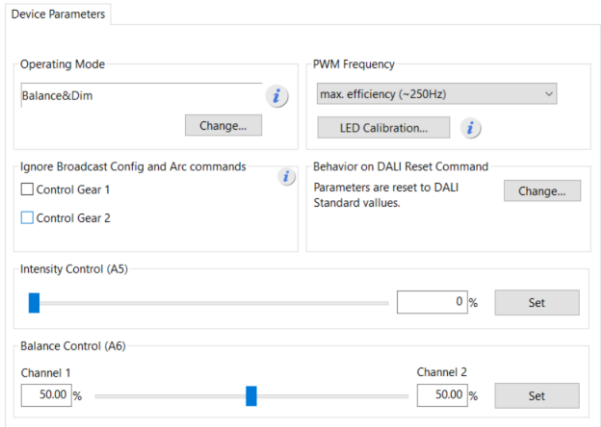
For each channel, the MIN level (default: 0.1%) an intermediate value (default: 33%) and the MAX level (default: 100%) can be adjusted and matched between light sources.

To do this, the desired level with the upper slider needs to be set. Apply the value and start the fine adjustment by pressing the button next to it. The appropriate fine adjustments can now be made with the calibration slider below. See also Figure 2

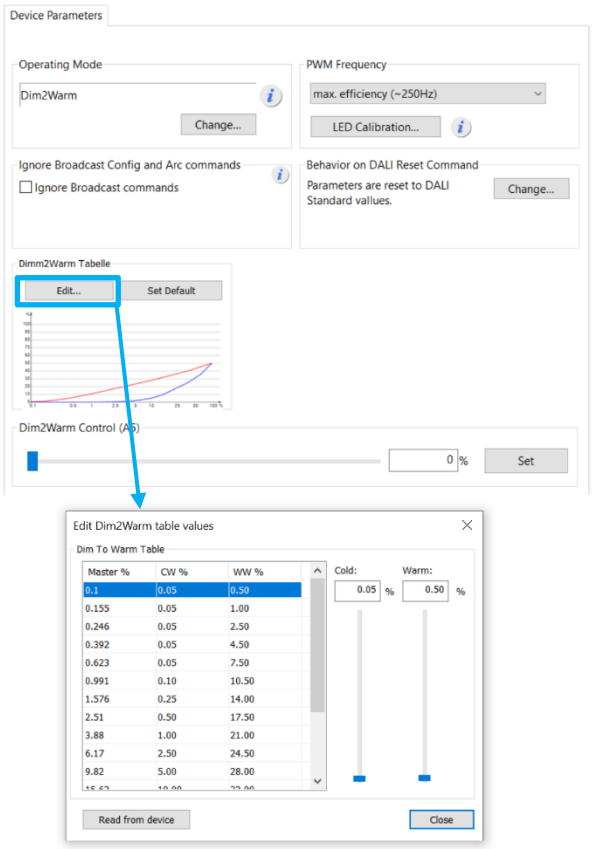
Overview operating mode DT8



Overview operating mode Balance&Dim



Overview operating mode Dim2Warm



**Change of the Dim2Warm table are being saved via “Save” to the device as other device parameters*

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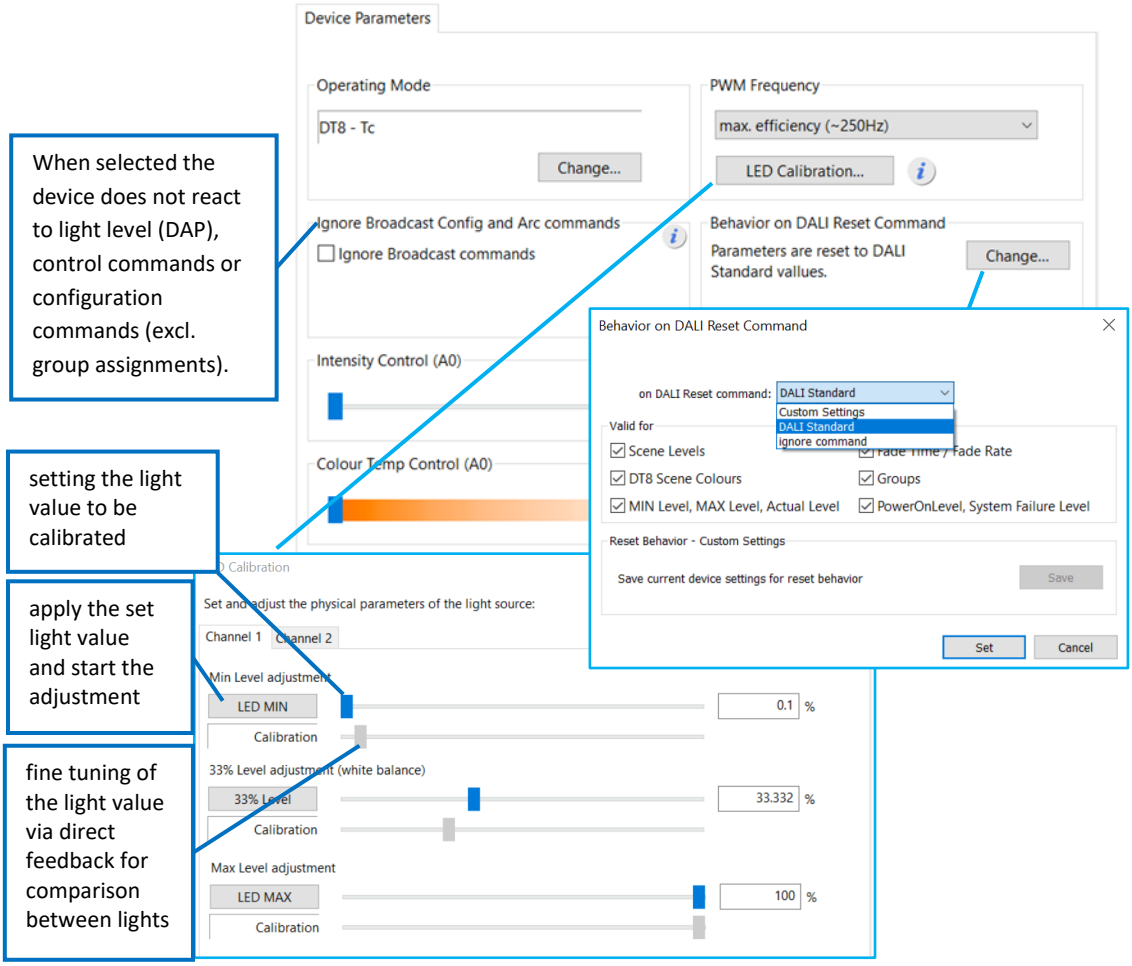
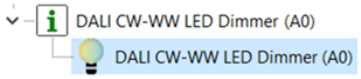


Figure 2 Cockpit overview page – LED calibration and settable RESET behaviour

DALI Cockpit: Additional Settings

Besides the settings on the general page each channel can be selected separately in the component tree for individual configuration.

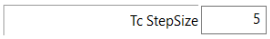


For each address the group membership can be set as well as scene values and DALI-parameters. In Balance&Dim operating mode all values assigned to channel 2 are representing the balance.

Figure 3 on page 11 shows the setting options for operating mode DT8.
Figure 4 on page 11 shows the settings for each channel for operating modes Balance&Dim and Dim2Warm.

DT8 – Tc Limits and Colour Temperature step size

The Tc step size can be increased (instead of the DT8 Tc DALI standard value: 1), to speed up colour temperature changes when using the commands TC STEP COOLER/WARMER.



The values “Physical Warmest”/”LED Warmest” ad “Physical coolest”/”LED coolest” capture the range the connected LED allows.

“Tc warmest” and “Tc coolest” colour temperatures represent the limit values for colour temperature like the Min and Max level do for the brightness. These values can be adjusted to compensate for colour differences between different light sources.

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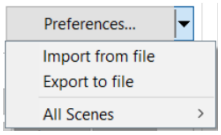
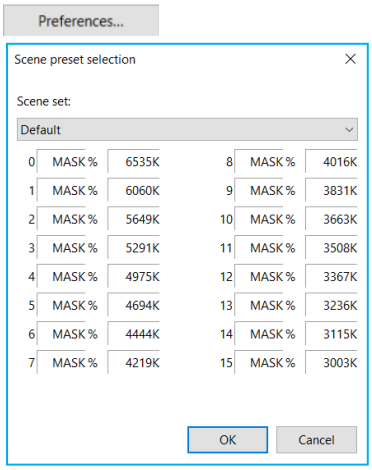
Scene settings

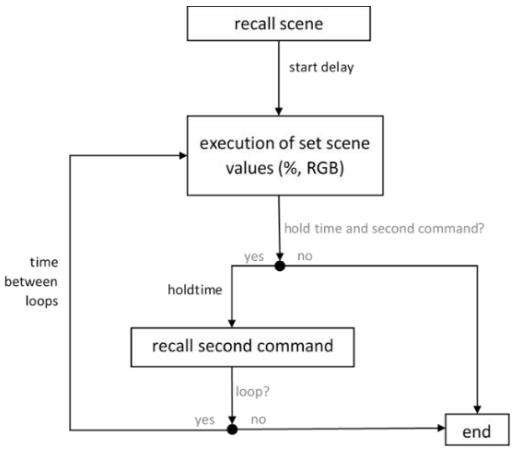
Via the arrow button the scene settings can be imported and exported.

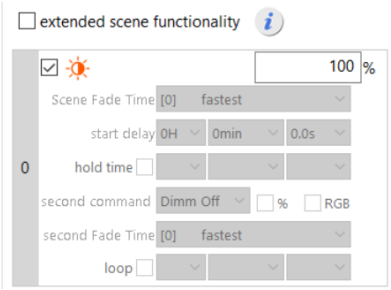


Via the button „Preferences“ the default scene settings can be loaded.

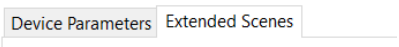


Extended scene settings can be configured. With extended scenes it is possible to automatically change between 2 scene values (once or looped). Thereby enabling configuration of blinking lights, time delayed switch off or light repetitions, as well as traveling lights with multiple dimmers.





Extended Scenes are available for each of the 16 scenes on the second tab:



By enabling the extended scenes these are used instead of the standard scenes on the “Device Parameters” tab

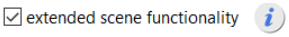


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Figure 3 Cockpit settings for DT8

Figure 4 Cockpit settings for each channel - Balance&Dim and Dim2Warm

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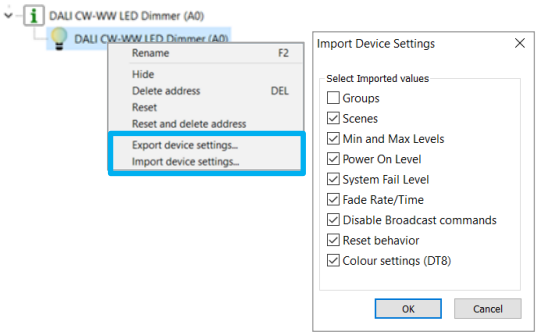
Import/Export settings

With a right click on the channel in the device-tree overview the device settings can be exported or imported.



Factory Default Settings

The factory default values as well as the DALI-norm values are summarised in *Table 1* below. By sending a DALI-Reset command the device is set to DALI default values as defined in the standard.

Table 1 factory default settings column 1, DALI Standard settings column 2

	Delivery default	**DALI norm**
Operating mode	DT8	remains unchanged
Min Level	0.1%	0.1%
Max Level	100%	100%
PowerOn Level	Last light level (= MASK)	100%
Power On Colour	4098 K	4098 K
System Failure Level	100%	100%
System Failure Colour	4098 K	4098 K
Fade Time	1s [2]	none
Fade Rate	89.4 steps/s [5]	44.7 steps/s
Tc-step size	3	1
Tc Warmest	3003 K	LED Warmest
Tc Coolest	6493 K	LED Coolest
LED Warmest (physical warmest)	3003 K	remains unchanged
LED Coolest (physical coolest)	6493 K	remains unchanged
PWM-Frequency	250 Hz	remains unchanged
Scene values	**Scene** / **light level** / **colour temperature** 0 / MASK / 6535 K 1 / MASK / 6060 K 2 / MASK / 5649 K 3 / MASK / 5291 K 4 / MASK / 4975 K 5 / MASK / 4694 K 6 / MASK / 4444 K 7 / MASK / 4219 K 8 / MASK / 4016 K 9 / MASK / 3831 K 10 / MASK / 3663 K 11 / MASK / 3508 K 12 / MASK / 3367 K 13 / MASK / 3236 K 14 / MASK / 3115 K 15 / MASK / 3003 K	All scenes MASK
Behaviour on DALI RESET command	set DALI Standard values, see column 2	remains unchanged
Ignore Broadcast commands	no	remains unchanged

Purchase Order Information

Art.Nr. 89453836: CW-WW Bluetooth LED Dimmer, CV, input current 4A, 12V-28V DC, back box

Accessories
wDALI-2 Bluetooth Wireless DALI Bridge
Art. Nr. 89453348:
Art. Nr. 89453348-PS
https://www.lunatone.com/en/product/wdali-2-bluetooth-5-wireless-bridge/

Additional Information and Equipment

Lunatone datasheets and manuals
https://www.lunatone.com/en/downloads-a-z/

Lunatone DALI products
https://www.lunatone.com/en/

DALI-Cockpit – DALI system configuration tool, free when using a Lunatone interface device
https://www.lunatone.com/en/product/dali-cockpit/

Contact

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Requests: sales@lunatone.com

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Disclaimer

Subject to change. Information provided without guarantee. The datasheet refers to the current delivery.

The compatibility with other devices must be tested in advance to the installation.