DALI CW-WW
LED Dimmer CV

Datasheet

Control Gear

DALI LED Dimmer (CV, DT8) for the control of tunable white luminaires (CW-WW)

Art. Nr. 89453836 (4A)
Art.Nr. 86458673 (8A)
Art. Nr. 89453838 (10A)
Art. Nr. 89453841 (16A)
Art. Nr. 89453841-HS (16A DIN Rail)

DALI CW-WW LED-Dimmer CV Control Gear

Overview

- DALI LED-Dimmer for the control of tunable white luminaires
- suitable for constant voltage LED-modules with operating voltages from 12V to 48V
- **Operating Mode DT8**: one DALI-address for the 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
- **SwitchDim2**: 2 switch-inputs offer control of level and colour without DALI
- dimming range 0.1%-100%
- adjustable PWM-frequency (122Hz/ 244Hz/ 488Hz/ 976Hz from FW version 4.6 on changed PWM frequencies: 250Hz / 500Hz / 1kHz)
- compact types for integration in luminaires, remote ceiling or DIN rail
- supply voltage type dependent of 12V to 28V DC or from 12V to 48V DC (according to the operating voltage of the led modules)
- type dependent max. input currents of 4A, 8A, 10A or 16A
- 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 USB-interface
- user-friendly factory default settings

From FW Version 4.6 onward:

- DALI-2 compatible
- LED calibration for light adjustment
- Configurable RESET behaviour

Specification, Characteristics

type	**DALI CW-WW Led Dimmer CV**				
article number	89453836	86458673	89453838	89453841	89453841-HS

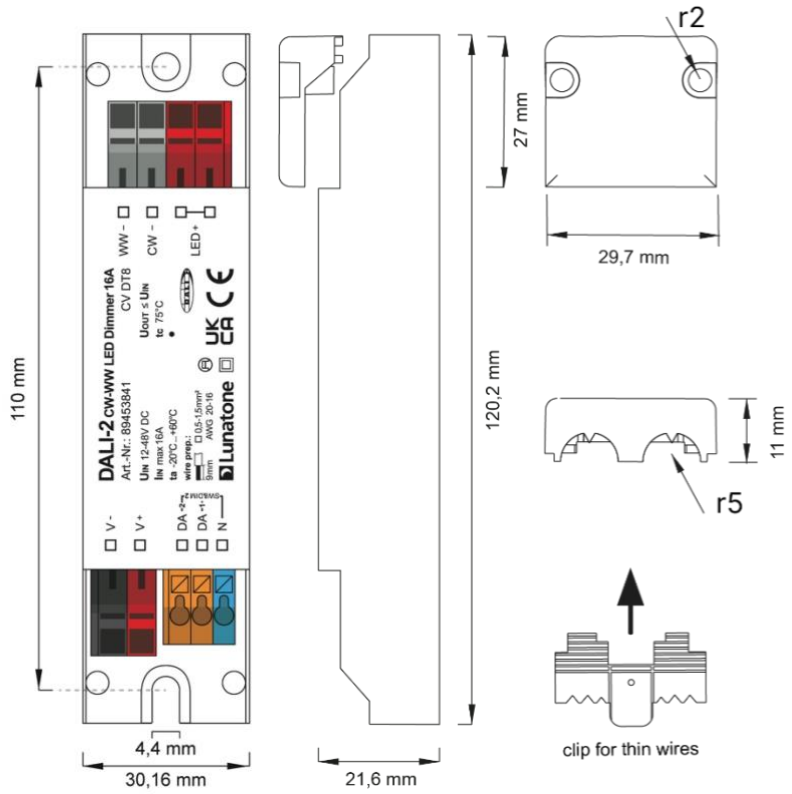
electrical data:

supply voltage Vin	12VDC-28VDC	12VDC-48VDC		
maximum input current I_in_max	4A	8A	10A	16A

article number	89453836	86458673	89453838	89453841	89453841-HS
control input	DALI	DALI SwitchDim2			
current consumption DALI	2mA				
number of DALI-addresses	operating mode DT8, Dim2Warm: 1 operating mode Balance&Dim: 2				
standby power consumption (12V)	120 mW				

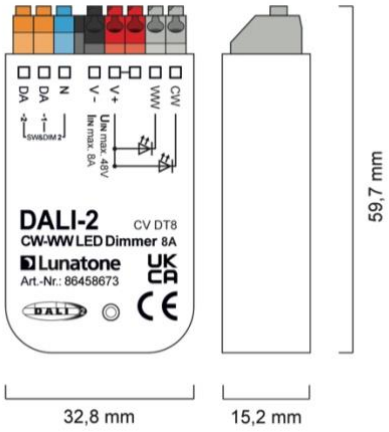
technical data:

power on behaviour	configurable via DALI: 0%-100% or last value			
storage/transportation temperature	-20°C … +75°C			
ambient temperature	-20°C … +60°C			-20°C …+55°C
expected lifetime (at Tc<=75°C)	>100000h			
protection class	IP20			
max. connecting wire cross section	1.5 mm^2		2.5 mm^2/ DALI &SwDim: 1.5 mm^2	2.5mm^2
dimensions (LxWxH)	40x28 x14 mm	60x33x15 mm	120x30x22 mm	98x18x56 mm
housing/mounting	back box		remote ceiling	DIN rail

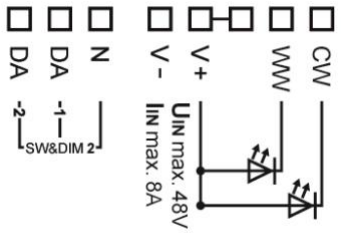


dimensions remote ceiling
Version 16A Art.Nr.: 89453841
Version 10A Art.Nr.: 89453838

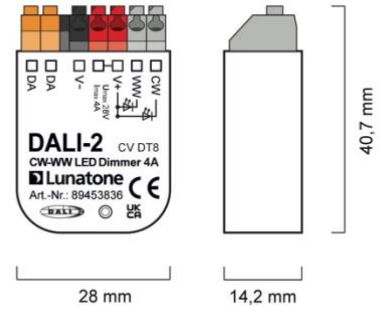
connection plan remote ceiling
Version 16A Art.Nr.: 89453841
Version 10A Art.Nr.: 89453838



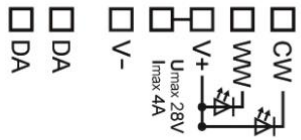
dimensions back box 8A
Version 8A Art.Nr.: 86458673



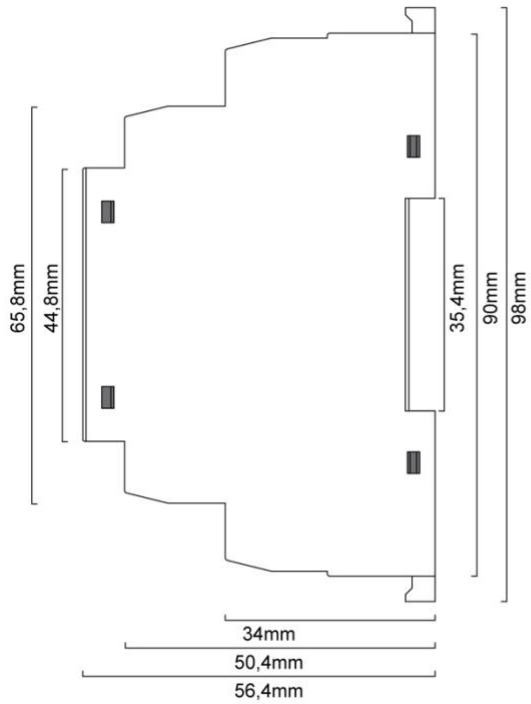
connection plan back box 8A
Version 8A Art.Nr.: 86458673



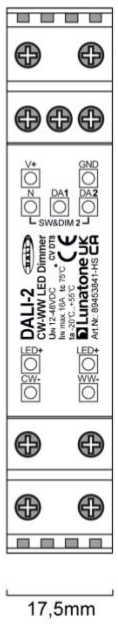
dimensions back box 4A
Version 4A Art.Nr.: 89453836



connection plan back box 4A
Version 4A Art.Nr.: 89453836



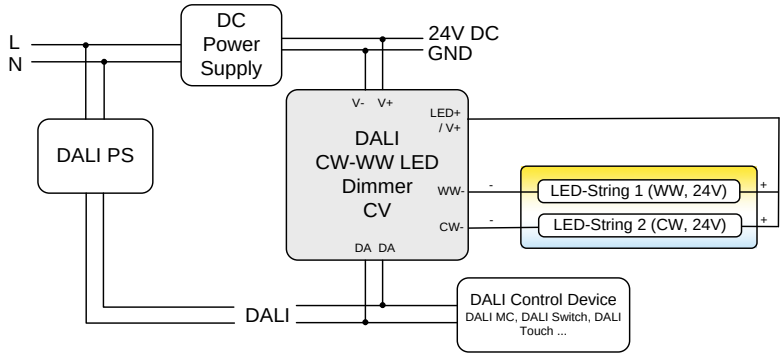
dimensions DIN rail housing
Version 16A Art.Nr.: 89453841-HS



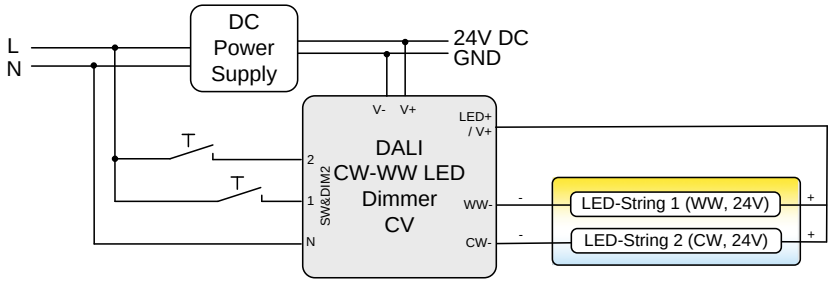
connection DIN rail housing
Version 16A Art.Nr.: 89453841-HS

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.

Control via DALI (all device versions):



Control via SwitchDim2 (all device versions except Version 4A Art.Nr.: 89453836):



Operating Modes

The device offers three 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).

Alternatively, the device can be controlled using 2 switch-inputs for mains voltage (SwitchDim2):

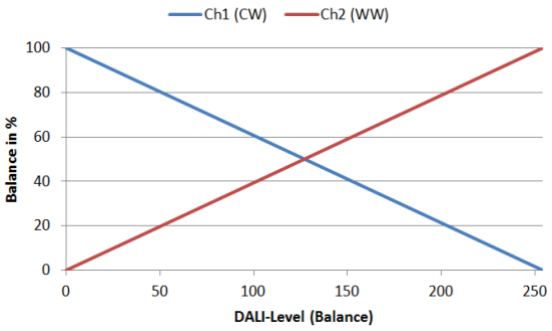
SwD1: light level
short press: On/Off
long press: dimming
SwD2: colour temperature
long press: change colour temperature

Balance&Dim
This operating mode is also suitable for operating tunable white luminaires using two DALI-addresses. The first address controls the light level, and the second address 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, DALI-standard commands like dim up/down and 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.

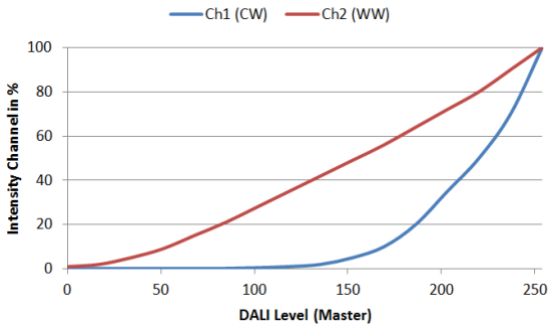
Can be operated via DALI or SwitchDim2:

DALI-address 1, SwD1: light level
DALI-address 2, SwD2: balance



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

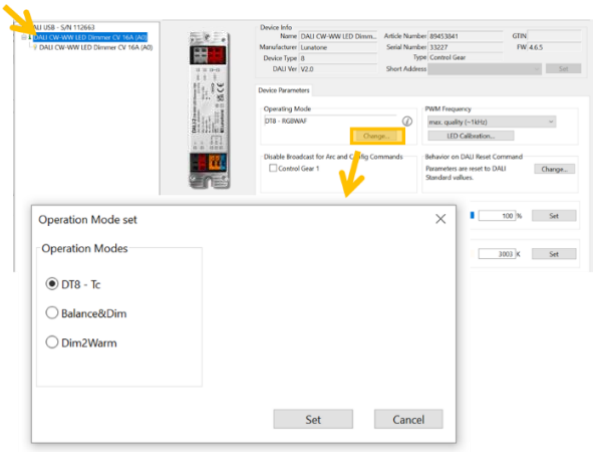
DALI-address 1,
SwD1: Dim2Warm (Master)
short press: On/Off
long press: dimming



SwD2: scene selector

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.



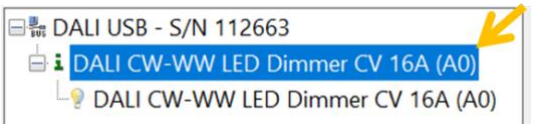
The operating mode can also be changed with the DALI-command SET OPERATING MODE (IEC 62386-102 Ed.2). When changing the operating mode, the number of used DALI-addresses might change as well, which requires a new addressing process. In the DALI-Cockpit this address assignment is performed automatically.

Operating Mode:

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

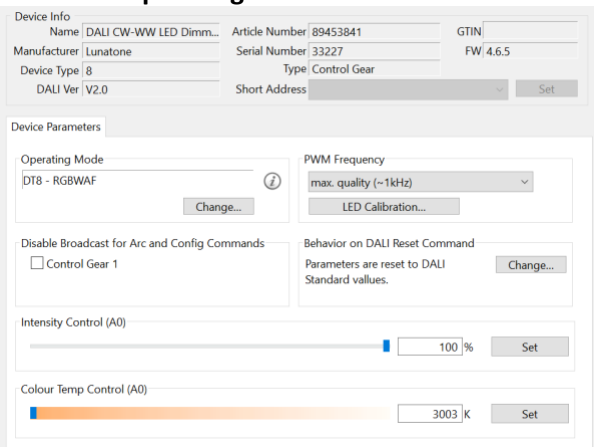
Cockpit: General Settings

Component tree: selection of device overview

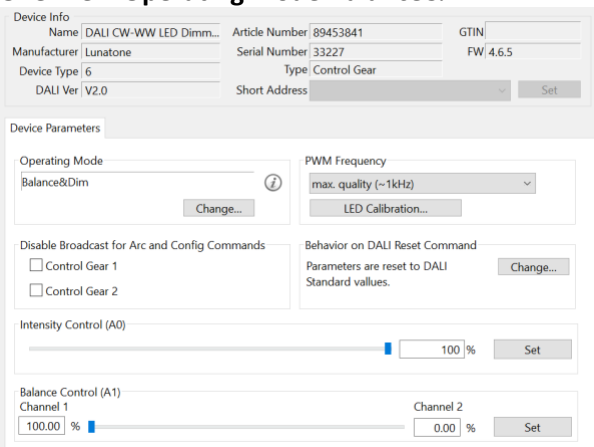


On the overview page, there are different control elements, depending on the operating mode (*DT8*: slider for level and colour temperature, *Balance&Dim*: slider for level and balance, *Dim2Warm*: slider for input value adaption and an option to edit the Dim2Warm-table). Also, the following configuration options are available.
(see also Figure 1., page 8)

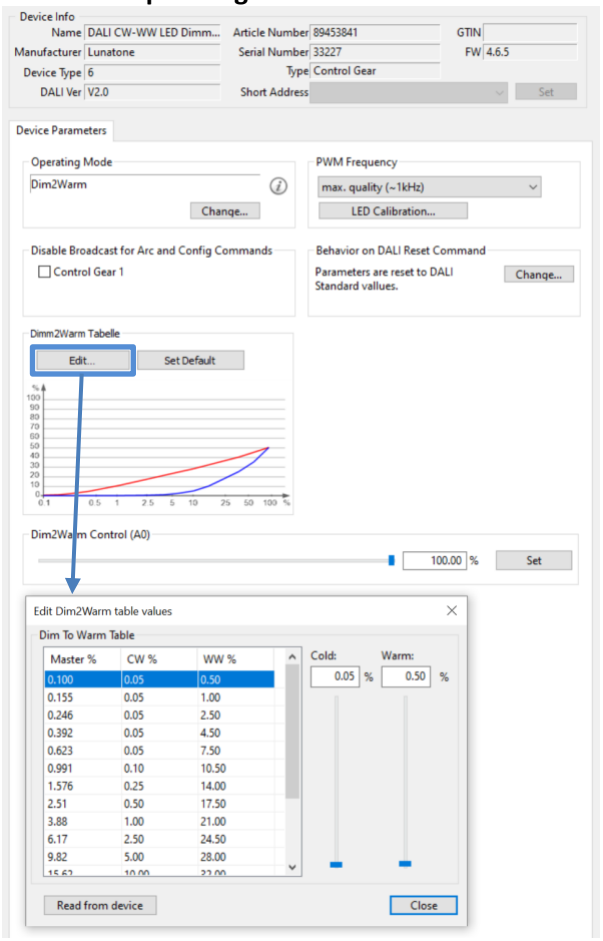
Overview Operating mode DT8



Overview Operating mode Balance&Dim



Overview Operating mode Dim2Warm



The **PWM frequency** can be selected:
122Hz / 244Hz / 488Hz / 976Hz.
From FW version 4.6 changed PWM frequencies: 250Hz / 500Hz / 1kHz.

The **broadcast control** can be deactivated for each channel individually.

Adjustable RESET behaviour:
From FW version 4.6 up, 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)

Calibration - light adjustment:
The dimming range extends from 0.1% to 100%. From FW version 4.6 on, 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, set the desired level with the upper slider. 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 Figure 1., page 8.

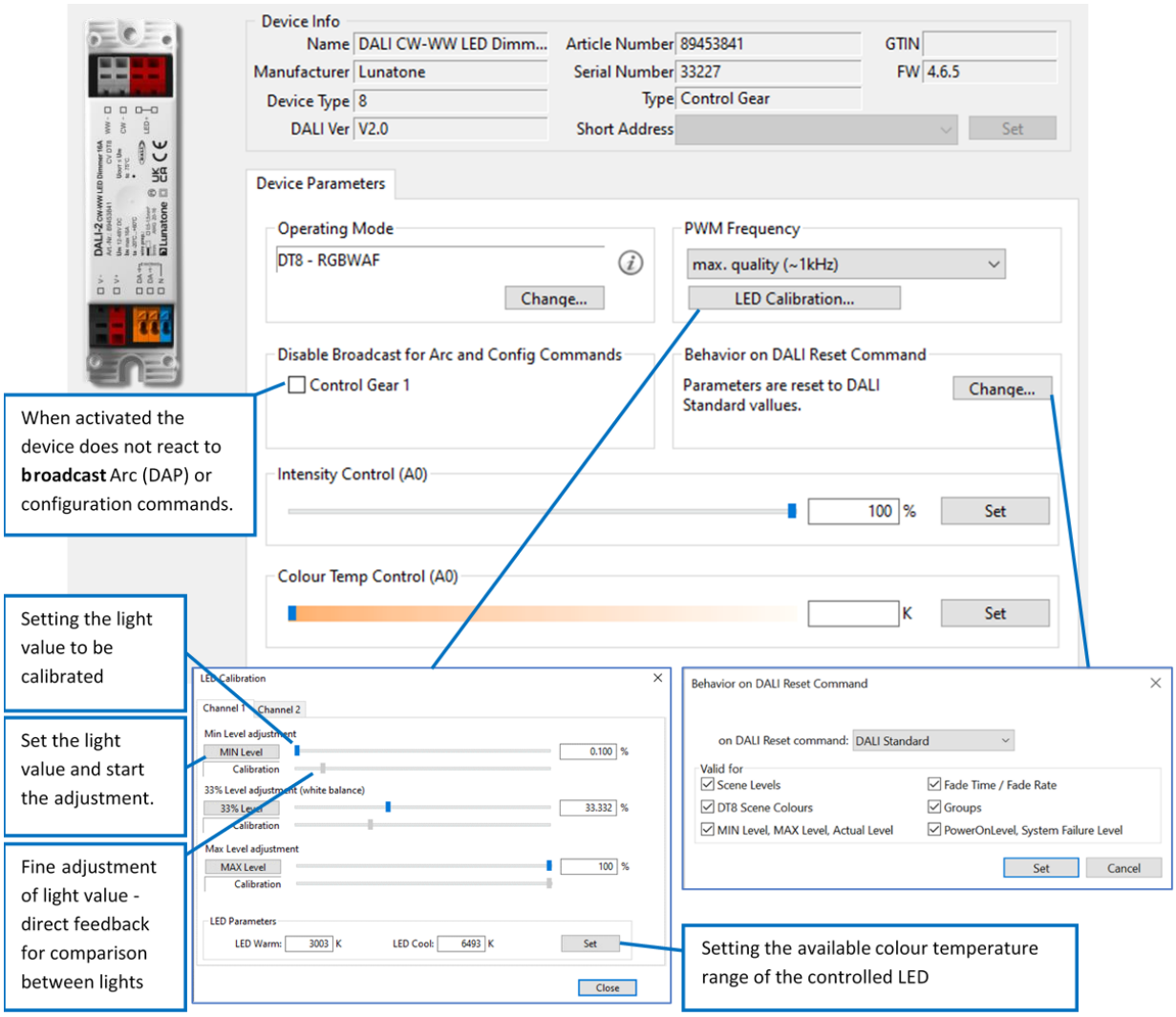
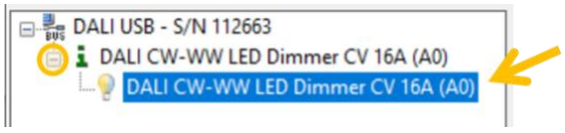


Figure 1 Cockpit Overview – general Settings

Cockpit: Additional Settings

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

Component Tree:

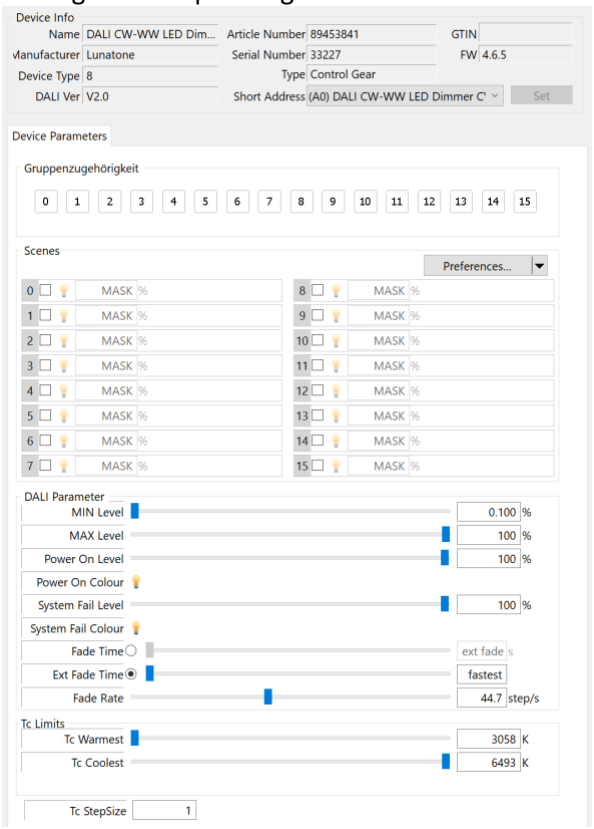


For each address, the group membership, scene values and DALI-parameters can be set.

The settings for each operating mode are depicted below, page 9.

In **operating modes Balance&Dim and Dim2Warm** the available settings are the same for each channel.
In Balance&Dim operating mode, values assigned to channel 2 are representing the balance.
Operating mode DT8: besides the DALI settings, the Tc step size can be adjusted, this is a simple way to speed up colour temperature changes when using the commands TC STEP COOLER/WARMER.
DT8 Tc-standard value.1

Settings in the operating mode **DT8**



Settings for each channel in the operating modes **Balance&Dim und Dim2Warm**

Factory Default Settings

Before the initial addressing is performed, the device can already be controlled by a group address. This predefined grouping will be deleted during the first addressing procedure. Afterwards groups can be assigned as usual (e.g. with the DALI Cockpit). By sending a DALI-Reset command the device is set to the DALI default values as defined in the standard.

The factory default values as well as the DALI-standard values are summarised in table 1 below.

Summary of the factory default settings (delivery state):

	Factory default	**DALI Standard**
operating mode	DT8	---
switchDim2	SwD1: light level SwD2: colour temperature	---
Min Level	0.1%	0.1%
Max Level	100%	100%
Power On Level	MASK (last value)	100%
System Failure Level	100%	100%
Fade Time	1s	None
Fade Rate	89.4 steps/s	44.7 steps/s
Tc-Stepsize	3 increments	1
PWM-Frequency	122Hz or 1kHz for FW 4.6 and up	---

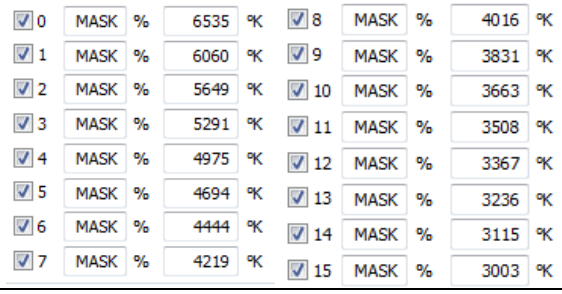
Groups before initial addressing	G0 (or G0 and G1 in operating mode Balance&Dim)	None
Scene values		all scenes: MASK (brightness: MASK and colour temperature: MASK)
Behaviour at DALI RESET command	set DALI Standard values, see column 2	---

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

Purchase Order Information

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

Art.Nr. 86458673: DALI CW-WW LED Dimmer, CV, input current 8A, 12V-48V DC, SwitchDim2, back box

Art.Nr. 89453838: DALI CW-WW LED Dimmer, CV, input current 10A, 12V-48V DC, SwitchDim2, remote ceiling & integration in luminaires

Art.Nr. 89453841: DALI CW-WW LED Dimmer, CV, input current 16A, 12V-48V DC, SwitchDim2, remote ceiling & integration in luminaires

Art.Nr. 89453841-HS (16A DIN Rail): DALI CW-WW LED Dimmer, CV, input current 16A, 12V-48V DC, SwitchDim2, DIN rail housing

Additional Information and Equipment

Lunatone DALI Cockpit
https://www.lunatone.com/en/product/dali-cockpit/

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

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

Contact

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Requests: sales@lunatone.com

www.lunatone.com

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.

