LED Solutions

Tunable White technology

At a Glance

TRIDONIC

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Introduction

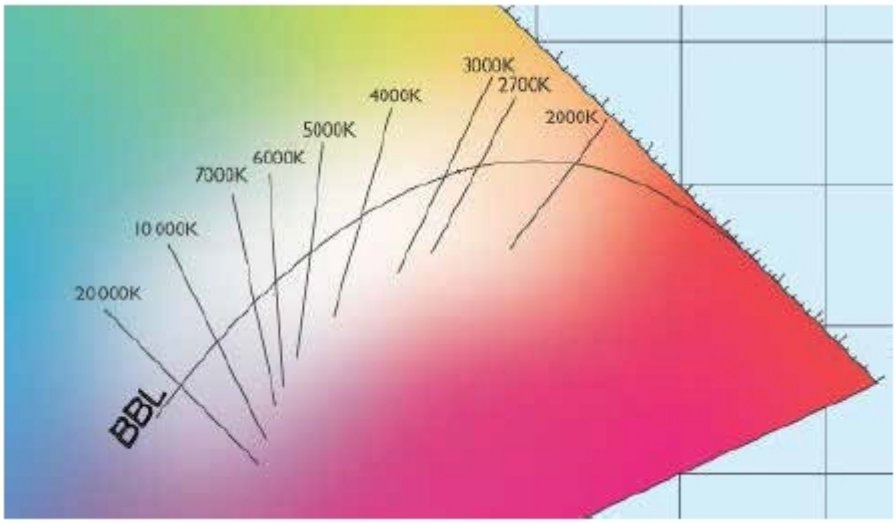
Tunable White describes the variable colour temperature control from warm white to cool white light. With the right colour temperature and illuminance, artificial light can promote human well-being in areas such as offices and educational institutions or hospitals and care homes.

To simulate daylight in a manner that is as true to nature as possible, light from cool white and warm white LEDs covering the entire colour palette from 2,700 to 6,500 Kelvin is mixed together.

To realize a Tunable white system, there are 4 possibilities. These are called "colour types". The DT8 LED Driver has to support at least one of these colour types.

Description of colour types

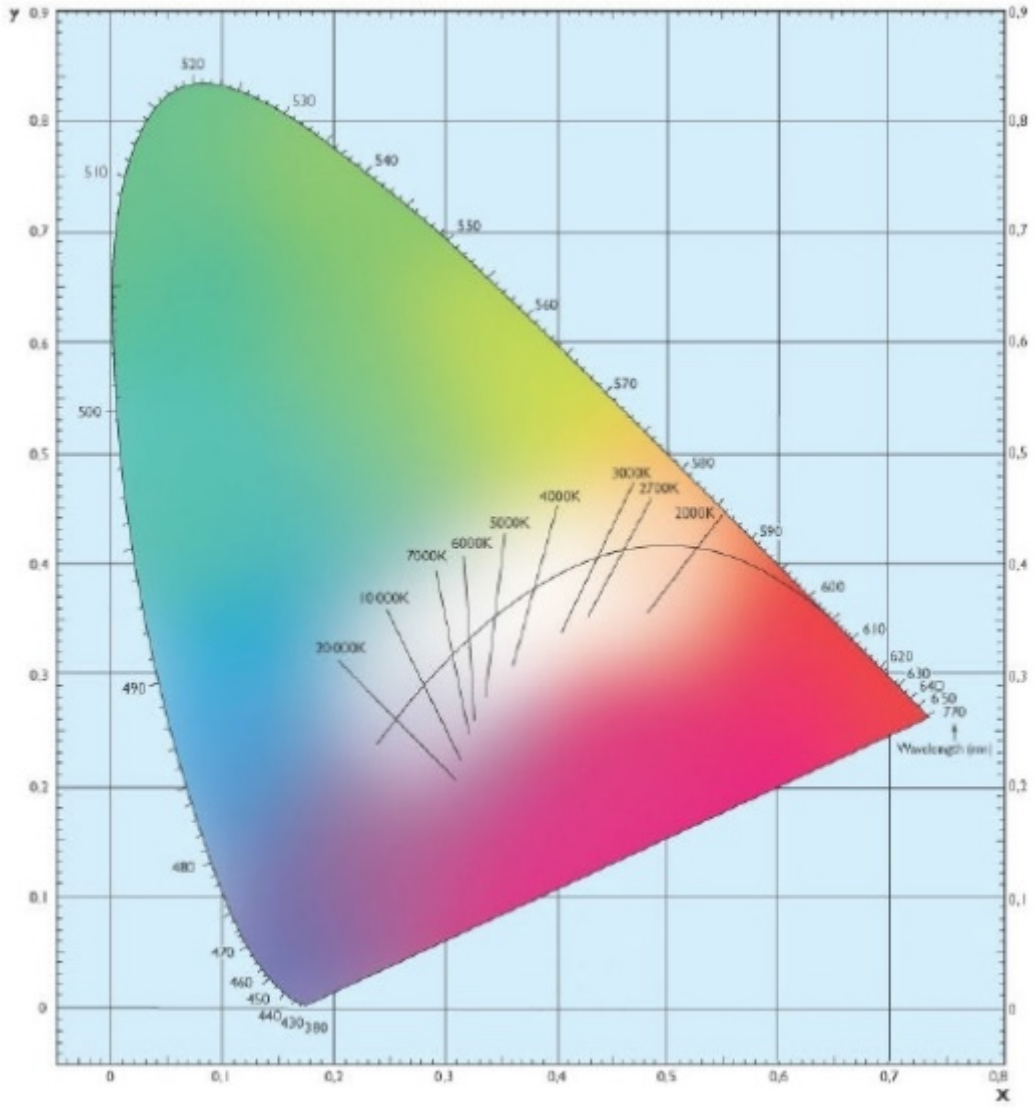
2.1. Colour temperature Tc



This is the most commonly used method for LED modules with 2 different LED packages on it such as QLE, LLE and CLE premium systems. The SLE premium system supports that method as well as the method x-y coordinate.

Description of colour types

2.2. x-y coordinate

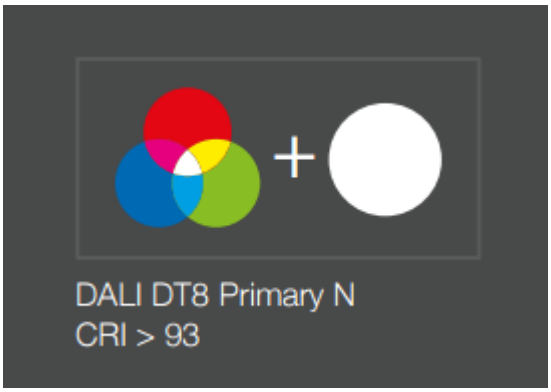


The output colour shall correspond as closely as possible to that shown in the figure for the point in the colour space defined by the x and y coordinates.

The SLE premium system supports that method as well as the colour temperature Tc method.

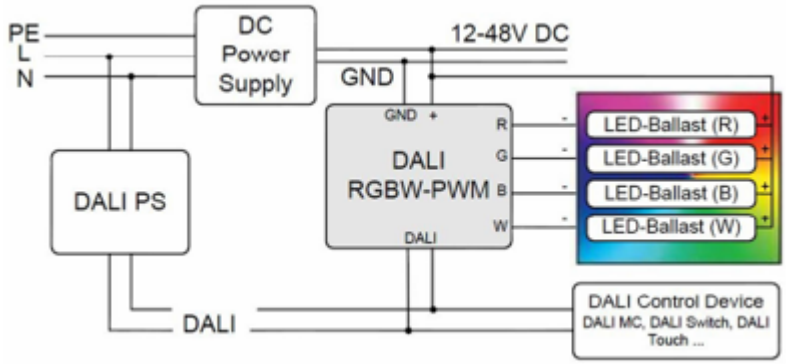
Description of colour types

2.3. Primary N



Primary N gives direct control over the light intensity of each available output channel.

2.4. RGBWAF



RGBWAF contains a method in which a minimum of 1 and a maximum of 6 output channels can be controlled independently of each other via "Arc Power Level".
Example: 6 lights, each with a different light colour.

Technical realisation possibilities and functions

3.1. 2-channel DALI DT6 system

- 2 independent DALI channels
- Ideal for the efficient operation of pendants and floor stands with direct/indirect light
- The output currents can be set variably via I-SELECT 2 plugs or via DALI for each channel
- proportionSWITCH provides the option of selecting from predefined dimming scenes
- The one4all interface which covers DALI DT6, DSI, switchDIM and corridorFUNCTION V2, adds to this high level of flexibility

3.2. DALI DT8 system

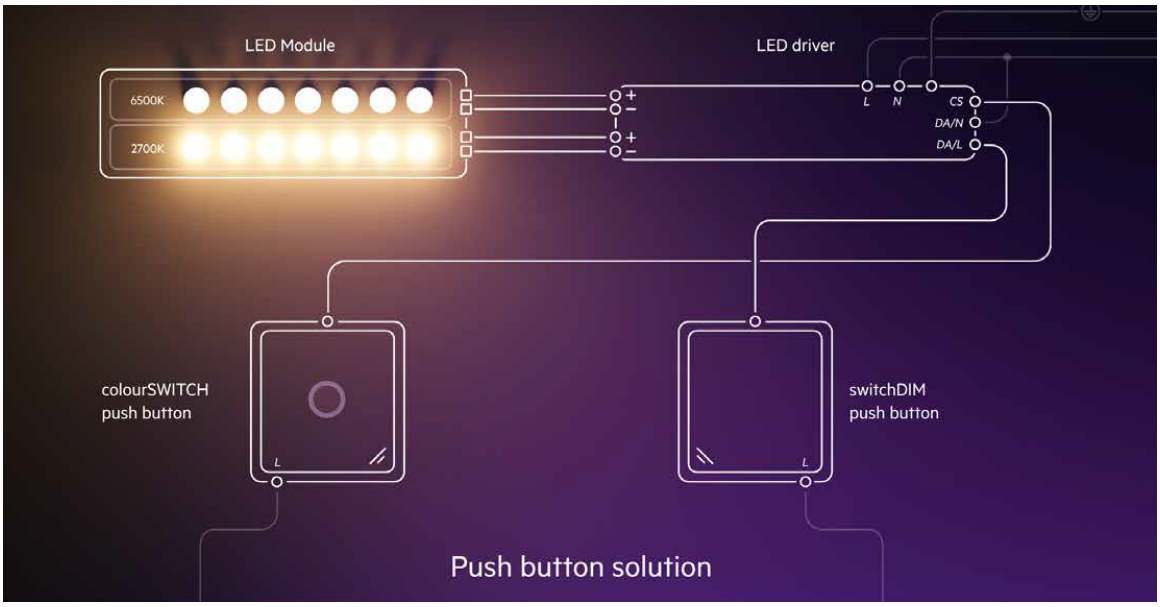
- 1 DALI address
- The output currents can be set via DALI
- Typically used in combination with TouchPANEL or switchDIM
- The one4all interface, which covers DALI DT8, DSI, switchDIM and corridorFUNCTION V2, adds to this high level of flexibility
- colourSWITCH functionality

3.3. DALI DT8 KIT system

- 1 DALI address
- Typically used in combination with TOUCHPANEL or switchDIM
- The one4all interface, which covers DALI DT8, DSI, switchDIM and corridorFUNCTION V2, adds to this high level of flexibility
- colourSWITCH functionality
- The output currents cannot be set
- Calibrated KITs consists of LED modules and LED Driver
- Constant colour temperature over the whole dimming range
- High colour consistency

Control options

4.1. colourSWITCH / switchDIM



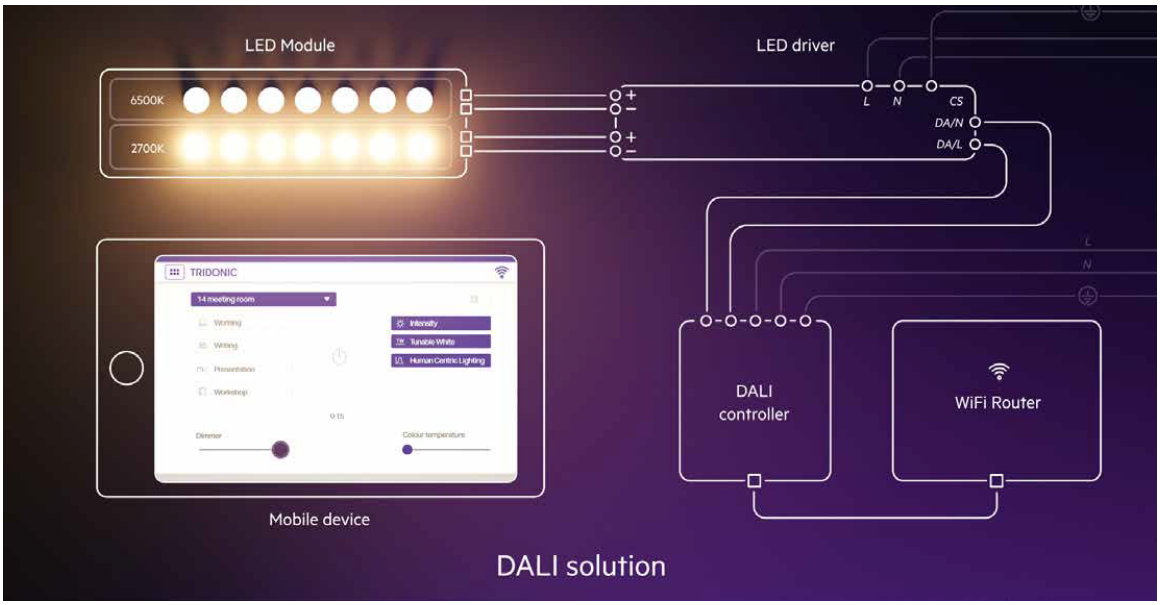
The combination of switchDIM and colourSWITCH buttons makes it easy to adjust the illuminance and colour temperature. The light can be dimmed using switchDIM, the proportion of cool white and warm white light can be mixed and customized with colourSWITCH.

4.2. basicDIM Wireless

The wireless module does not need a control line. The light is controlled conveniently on a smartphone or tablet using the 4remote BT app.

Control options

4.3. sceneCOM XL



DALI systems like sceneCOM XL make it easy to implement and control complex lighting solutions. Built-in components can be controlled and adjusted directly.

4.4. DALI x/e-touchPANEL 02

The DALI x/e-touchPANEL 02 makes it easy to program lighting scenes and RGB colour mixes. They can be called up via the graphical user interface. The panel also includes a sequencer which is used to automate calendar-controlled sequences.

Control options

4.5. DALI TOUCHPANEL 02

Setting up and operating DALI systems – Tridonic TOUCHPANELs enable you to accomplish this conveniently via a graphical user interface. DALI TOUCHPANEL 02 has a keypad with user-selectable key functions for manually controlling lighting groups and lighting scenes. It is programmed by using the masterCONFIGURATOR software which is available free of charge.

4.6. DALI XC

Conventional momentary-action switches can be connected quickly and easily to the comfortDIM XC module. This makes it possible to custom design the lighting. These momentary-action switch modules are used to group luminaires together, define scenes and program macros. Tunable White also allows colour temperature variations.

Configuration via masterConfigurator

The masterCONFIGURATOR software is a configuration and parameterization program for DALI devices. This software can be used to set up a DALI control line and configure individual control gear and control units.

Basic functions

- Addressing
- Grouping
- Setting scenes
- Parameterizing DALI devices
- Configuring DALI and DSI commands
- Creating command sequences
- Testing installation, addressing and functions

Control gear for colour converters are shown in the DALI device tree diagram with the symbol  and the short description colour.

5.1. Member of group(s)

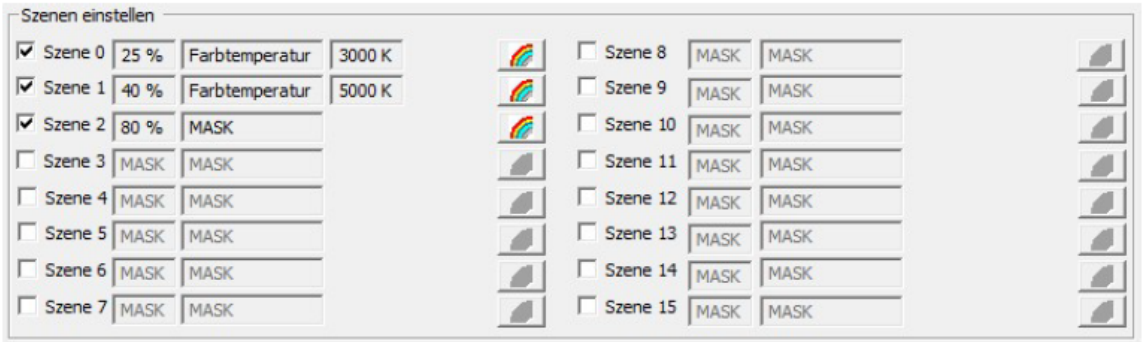
Member of group(s) specifies the group or groups to which the control gear belongs. These groups are highlighted with a blue background colour.

Via these 16 keys the group membership can be changed easily.

5.2. Setting scenes

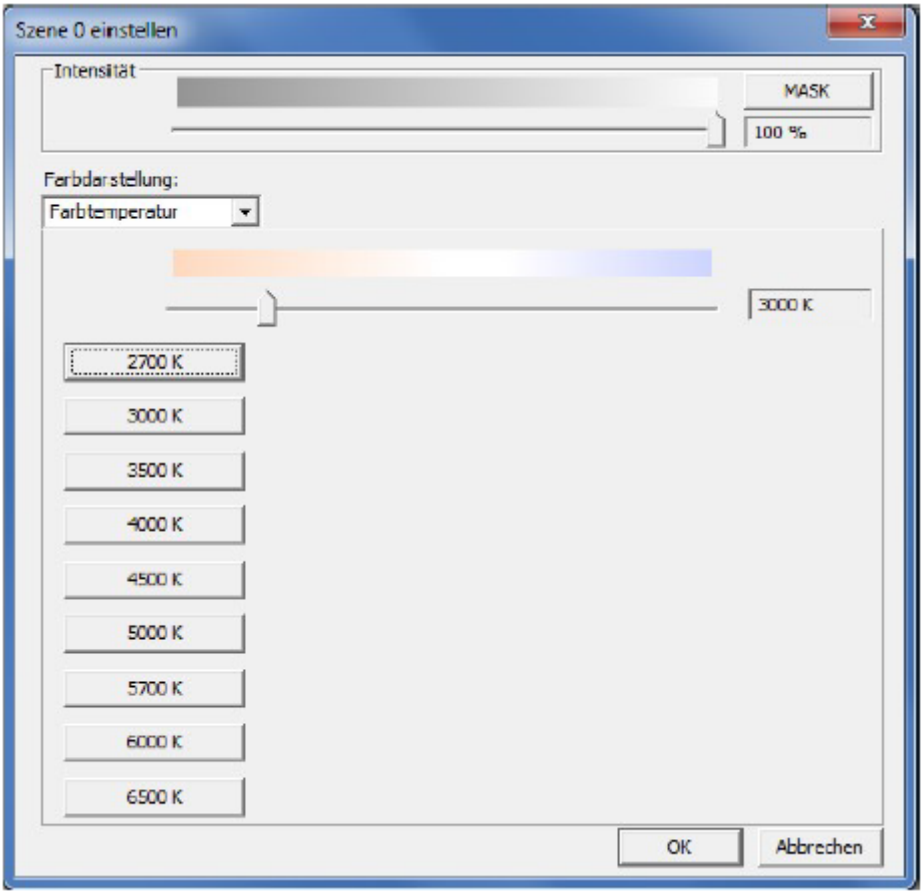
Here, the intensity of the luminaire and its colour temperature or x-y coordinates can be set for all 16 scenes (0 - 15). The detail view shows an overview of the set scenes.

The settings can be defined in the "Set scene" pop-up window.



Configuration via masterConfigurator

Via the symbol  the colour temperature can be changed in 100 K steps.



The SLE premium system can be adjusted via colour temperature and also via x-y coordinates.

Configuration via masterConfigurator