PHILIPS

dynalite

DDBC120-DALI

Signal Dimmer Controllers

Technical Note

DALI 209 Color Control

Tunable white benefits

Lighting has a strong impact on the timing and strength of the circadian sleep–wake rhythm and on our sense of wellbeing during the day.

Bright light in the morning and warm light at the end of the day strengthens the circadian system. This biorhythm support by tunable white dynamics is reflected in better health, increased daytime wakefulness, greater well-being and better state-of-mind.

Tunable white and brightness control offers the freedom to create different ambiances in multidisciplinary spaces supporting specific activities such as; welcoming guests, optimizing presentations, enhancing collaboration, stimulating creativity, providing focus and boosting concentration levels.

Configuring DALI tunable white channels

The updated DDBC120-DALI multimaster controller now supports tunable white light for DALI 209 compliant color control luminaires. This provides a single Warm White Cool-White (WWCW) channel for tuning the color temperature and adjusting the light intensity.

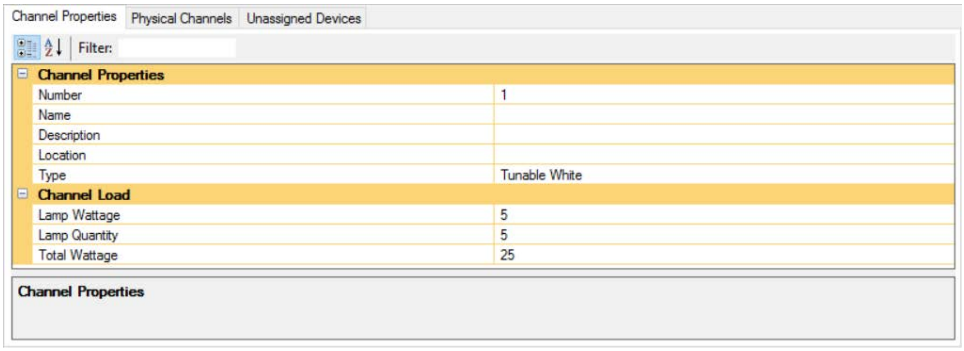
Previously, DALI luminaires required two channels that controlled a Warm-White driver and a Cool-White driver, to achieve the same effect. Both the old and new channel types are supported by the controller.

The controller detects the type of luminaire driver during the enumeration process. When this physical channel is assigned to a logical channel, System Builder (SB) will automatically set the logical channel type to Tunable White.

If precommissioning, you can set the channel type manually.

Manually set logical channel type:

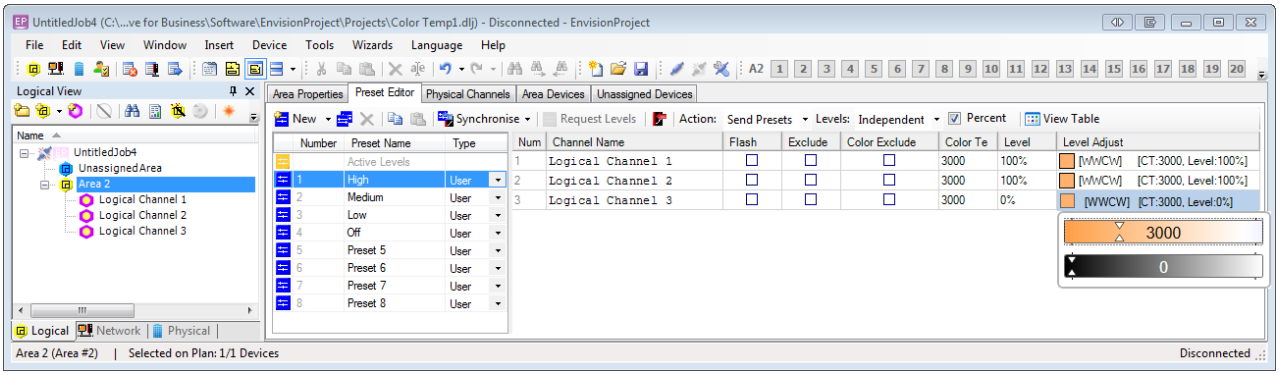
1. In Logical view, create or select a logical area.
2. Click an existing logical channel or click to create a new channel in the area.
3. In the Properties window, click Channel properties
4. Under channel properties, click the Type dropdown box and select Tunable White (WWCW). The Tunable White logical channel icon is displayed in the Logical View Area Tree.



A Tunable White channel has two components that can be adjusted independently:

Color temperature (CT)
The color temperature is set in Degrees Kelvin (°K) ranging from 2500 °K to 7000 °K. This allows the light to range from a warm reddish hue to a cool blueish hue

Channel level (brightness)
The channel level is set as a percentage 0% to 100% or as an 8-bit value from 0 to 254. Click the **Percent** checkbox to change the channel level units



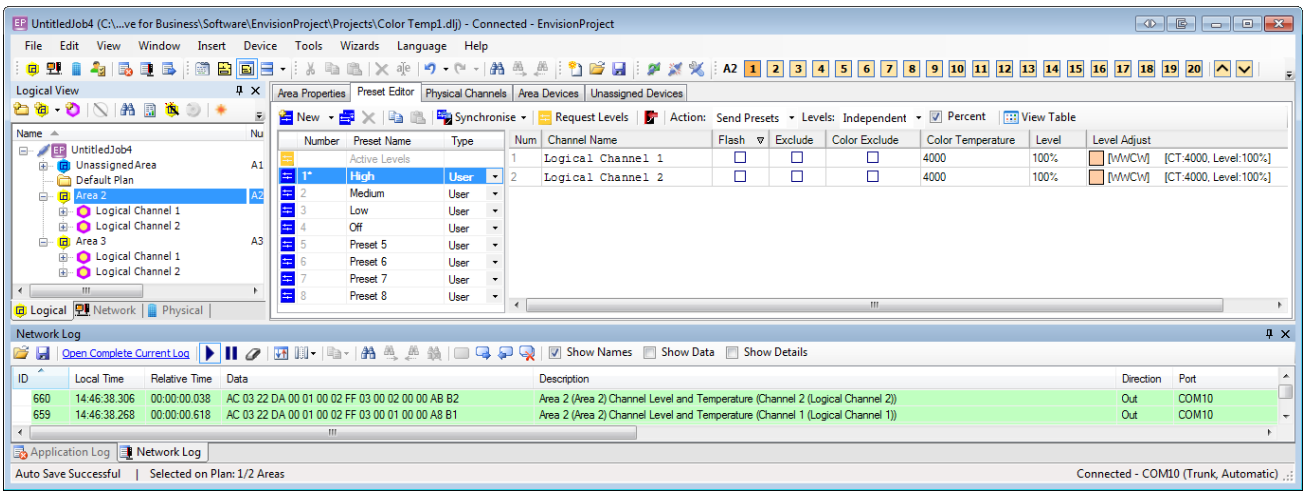
Note: If you have a Technician License you can create DALI channels without enumerating by manually entering the DALI short addresses in the short address column of the Device Channel Editor. Ensure Tools > Settings > User Settings > Behavior > Enable manual DALI address editing is set to True.

Programming Presets

Program Presets for Tunable White channels

1. In Logical view, click the **Preset Editor tab**.
2. Select a logical area.
3. Select an existing Preset or click **New** to add a Preset.
4. Click the **Level Adjust** property to adjust the **Color Temperature** and **Channel Level** sliders
   or
   Click the **Color Temperature** property and enter a value in °K.
   Click the **Level** property and enter a value in % (0 to 100) or in decimal (0 to 254).
5. Click the **Exclude** checkbox so the channel level will not change when the preset is recalled.
6. Click the **Color Exclude** checkbox so the color temperature will not change when the preset is recalled.
7. Levels for brightness and color temperature are preprogrammed for each channel. When a preset is recalled that includes a Tunable White channel, both the channel level and the color temperature will fade to the recalled preset values.

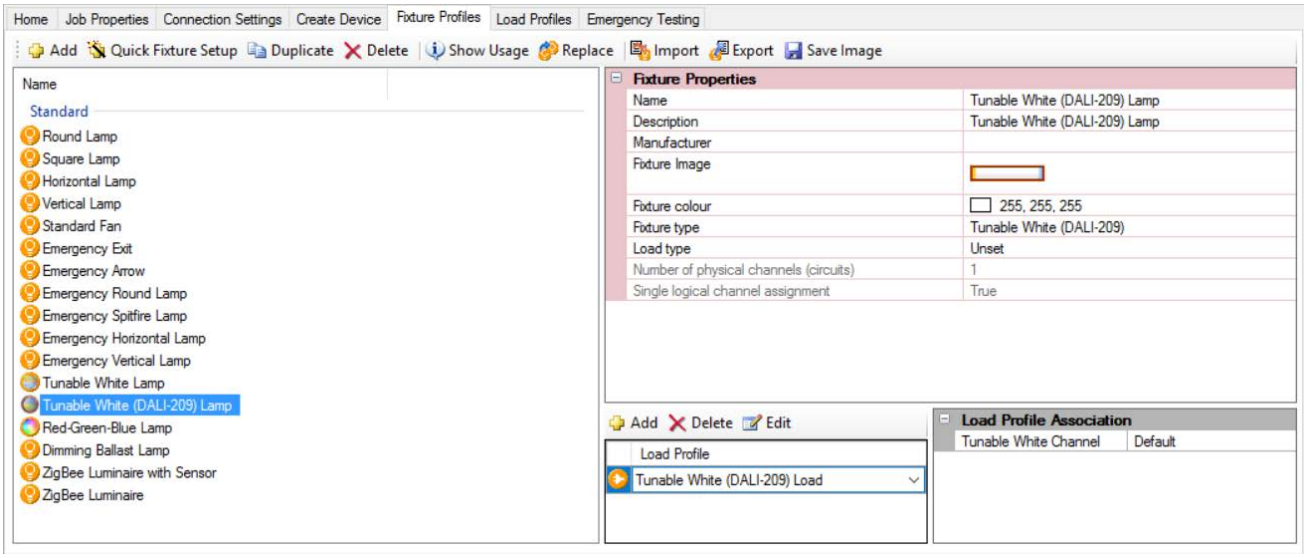
Requesting the levels for a Preset that includes Tunable White channels, returns both the Color Temperature and Channel Level.



Tunable White Fixture Type

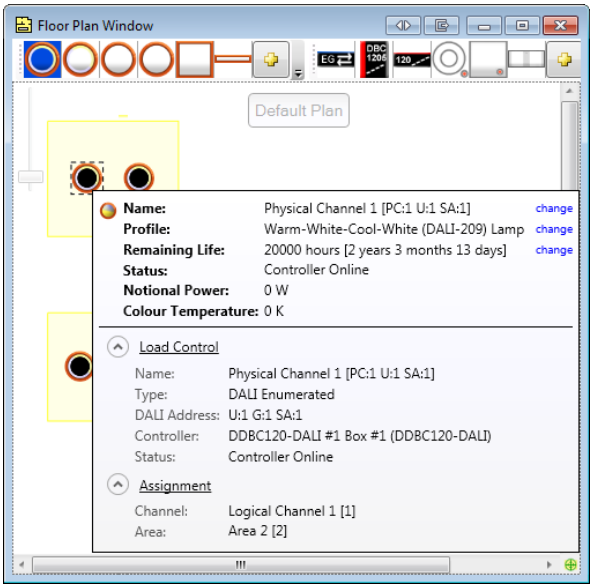
Add a Tunable Wite fixture to the floor plan:

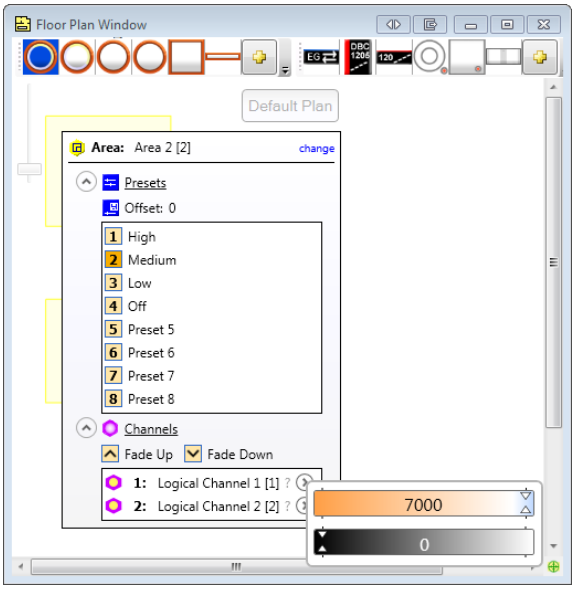
1. Click the icon in the Fixture Palette
2. Select the Warm-White Cool-White fixture



3. Click OK
4. Click to place the Tunable White fixture on the floor plan. Hover the mouse over a fixture to see the Fixture Information tooltip.

On the floor plan, you can use the sliders to adjust the color temperature and channel level from the Area Information tooltip. Hover the mouse over an area and click the icon next to a channel to show the sliders.





DyNet commands

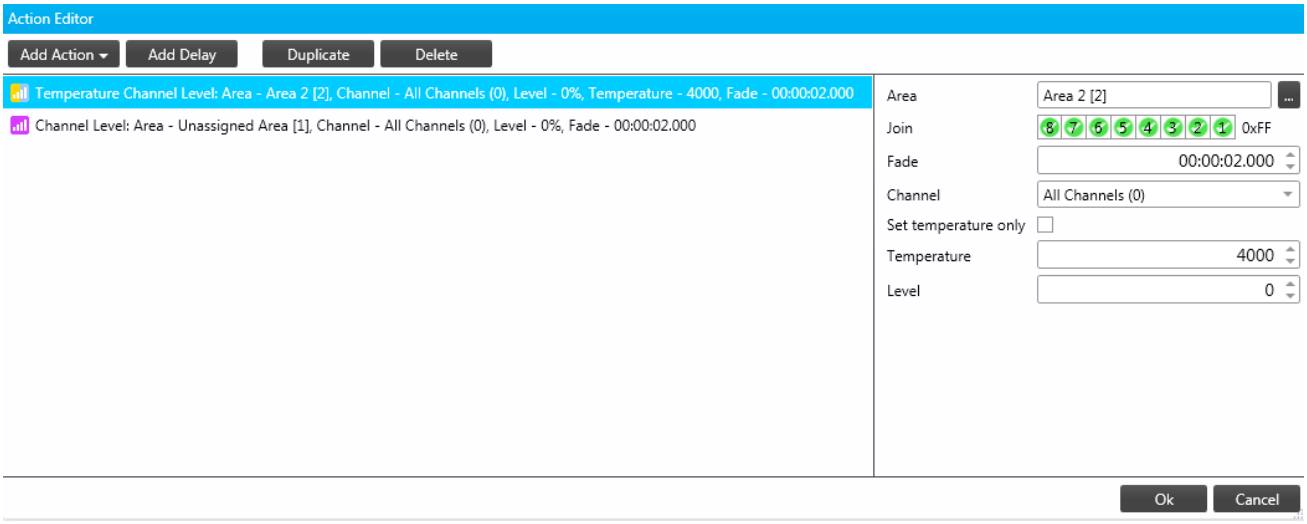
DyNet includes a new DyNet2 logical command to set/request both the color temperature and channel level. Standard preset and channel level commands remain unchanged.

The following commands can be used for Tunable White channels.

Command	Protocol
Preset	DyNet1
Channel Level	DyNet1
Color Temperature Level (proposed)	DyNet1
Color Temperature and Channel Level	DyNet2

The DyNet2 Color Temperature and Channel Level command is supported by:

Software	Editor
System Builder	Logical Preset Editor in the DDBC120-DALI. Schedule Editor (Macro Action) in Ethernet Gateway. Floor plan area tooltip
System Manager	Preset Editor Site Map Schedules Editor (Macro Action)



Note: Use the standard Channel Level command if you just want to set or request the channel level.