Dimming of amalgam lamps without flickering or reduced lifetime of lamp and ECG

Features

- Stable dimming range down to 1 % (CFL 3 %)
- Much more light in a wide range of temperature
- 90 % luminous flux from **0 °C** to +70 °C (temperature dependent cut-off)
- Reliable lamp ignition from -20 °C
- Power boost stabilizes discharges in the “pink-phase”
- No lifetime reduction of lamp and ECG

Lamp/ECG combinations

- T5: HO CONSTANT: 24 W, 39 W, 54 W, 80 W Dimming range 1…100 %
- CFL: DULUX L CONSTANT 40 W, 55 W, 80 W Dimming range 1…100 %
- CFL: DULUX T/E CONSTANT 26 W, 32 W, 42 W Dimming range 3…100 %

ECG \ Lamp	T5 24 W HO CONSTANT	T5 39 W HO CONSTANT	T5 54 W HO CONSTANT	T5 80 W HO CONSTANT	CFL DL 40 W CONSTANT	CFL DL 55 W CONSTANT	CFL DL 80 W CONSTANT	CFL D T/E 26 W CONSTANT	CFL D T/E 32 W CONSTANT	CFL D T/E 42 W CONSTANT
QTi DALI / QTi (1…10V) 1x14/24 DIM	x									
QTi DALI / QTi (1…10V) 1x21/39 DIM		x			x					
QTi DALI / QTi (1…10V) 1x28/54 DIM			x			x				
QTi DALI / QTi (1…10V) 1x35/49/80 DIM				x			*)			
QTi DALI / QTi (1…10V) 2x14/24 DIM	x									
QTi DALI / QTi (1…10V) 2x21/39 DIM		x			x					
QTi DALI / QTi (1…10V) 2x28/54 DIM			x			x				
QTi DALI / QTi (1…10V) 2x35/49/80 DIM				x			*)			
QTi DALI / QTi (1…10V) 3x14/24 DIM	x									
QTi DALI / QTi (1…10V) 4x14/24 DIM	x									
QTi DALI / QTi (1…10V) - T/E 1x18-57 DIM								x	x	x
QTi DALI / QTi (1…10V) - T/E 2x18-42 DIM								x	x	x

*not suited for blinking sequences, dimming within the scope of a special release

Figure 1: Dimming of amalgam lamps: Lamp/ECG combinations

Dimming of amalgam lamps

Dimming of amalgam CFL lamps ORAM DULUX T/E CONSTANT

Stable and reliable dimming operation of amalgam CFL
OSRAM DULUX T/E CONSTANT 26-42 W on ECGs QTi (DALI)…DIM,
from 3 % to 100 % lamp power.

Normal light color from approx. 30 % dimmer setting.
At its initial ignition, the ECG-internal „Power Boost“ increases the lamp power. It supports the release of the mercury and stabilization of the discharge.
During the "Pink Phase" at dimmer settings < 30 %, the ECG may intervene in favor if the amalgam lamp is operated unter insufficient gas pressure.

Functionality QTi DALI…DIM: Power boost and amalgam lamps

The amalgam releases just as much mercury as used for the discharge phase and reduces therefore the decrease of the luminous flux at high or low temperatures in a tremendous way. After a change in the operation mode, it takes several minutes until the mercury balance is set up. When the lamp is switched off for a longer time – no discharge, no mercury demand – the amalgam gathers again the whole amount of mercury. During a **restart**, there is **at first a lack of mercury**, being visible by the “**pink-phase**.”

If the lamp is dimmed during this phase, its voltage can rise to forbidden values. This could lead to instable discharges. Now the focus is on the **power boost**: The power boost **automatically rises the lamp power in order to reduce the lamp voltage and to stabilize the discharge phase**. When the amalgam has released enough mercury, the **lamp power will be reduced again automatically and the lamp can be dimmed normally**.

The power boost works even with normal mercury lamps: At very low temperatures, the power boost raises again automatically the lamp power, if necessary, and takes over the **role of the limitation of the dimming level**.

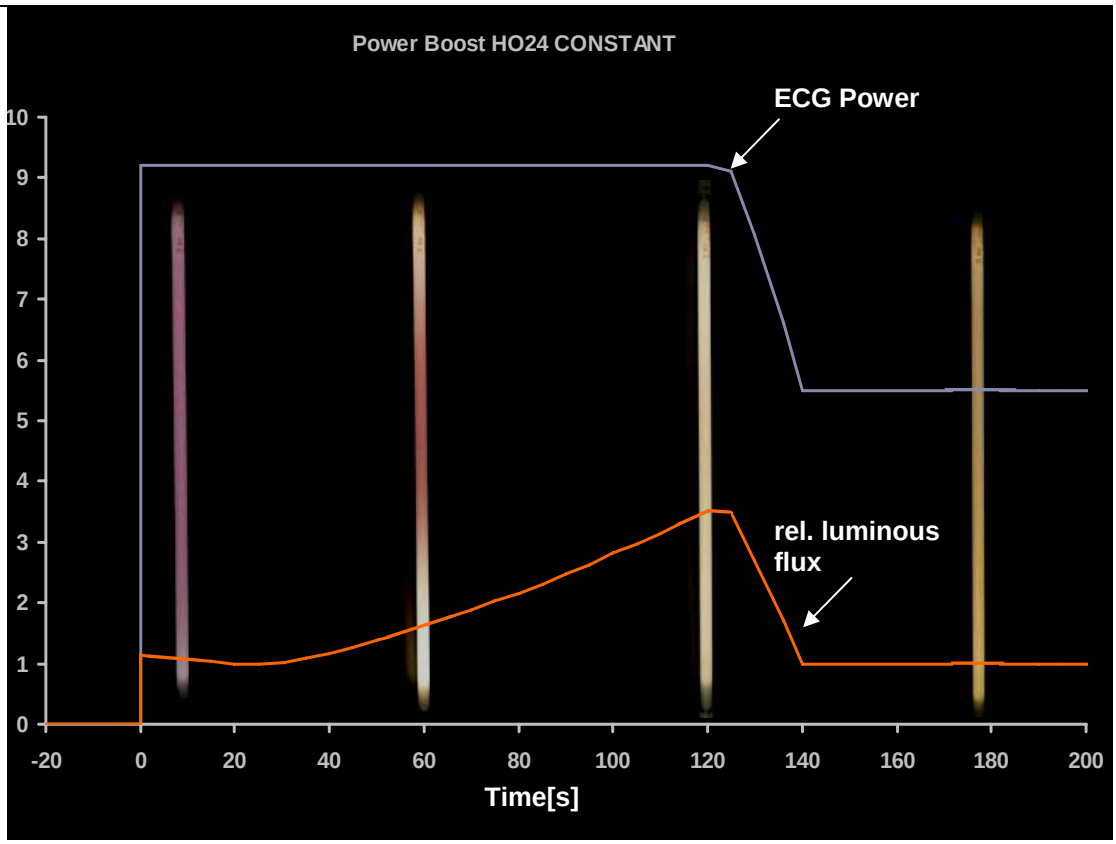

Figure 2: Power boost and start with HO CONSTANT 24 W lamp

Functionality QTi DALI…DIM:
Relative luminous flux > 90 % within the expanded temperature range of 0 °C to 70 °C

Mercury T5 lamps have their optimum in luminous flux at 35 °C ambient temperature – but only, when the mercury balance is not affected by additional pre-heating of the filaments. The QTi DALI…DIM ECGs have the feature of the **cut-off**, means **switching off the pre-heating of the filaments when not used**.

New!

Amalgam lamps have a **higher light output at low temperatures, when the filaments are pre-heated**. Nevertheless, at high temperatures, this effect turns over.

The QTi DALI…DIM uses its **internal temperature sensor to shut off the pre-heating of the filaments at high temperatures**. This additionally raises the luminous flux of cold amalgam lamps: The **temperature limit of relative luminous flux < 90 % can be decreased from 5 °C down to 0 °C** (see figure 3)!

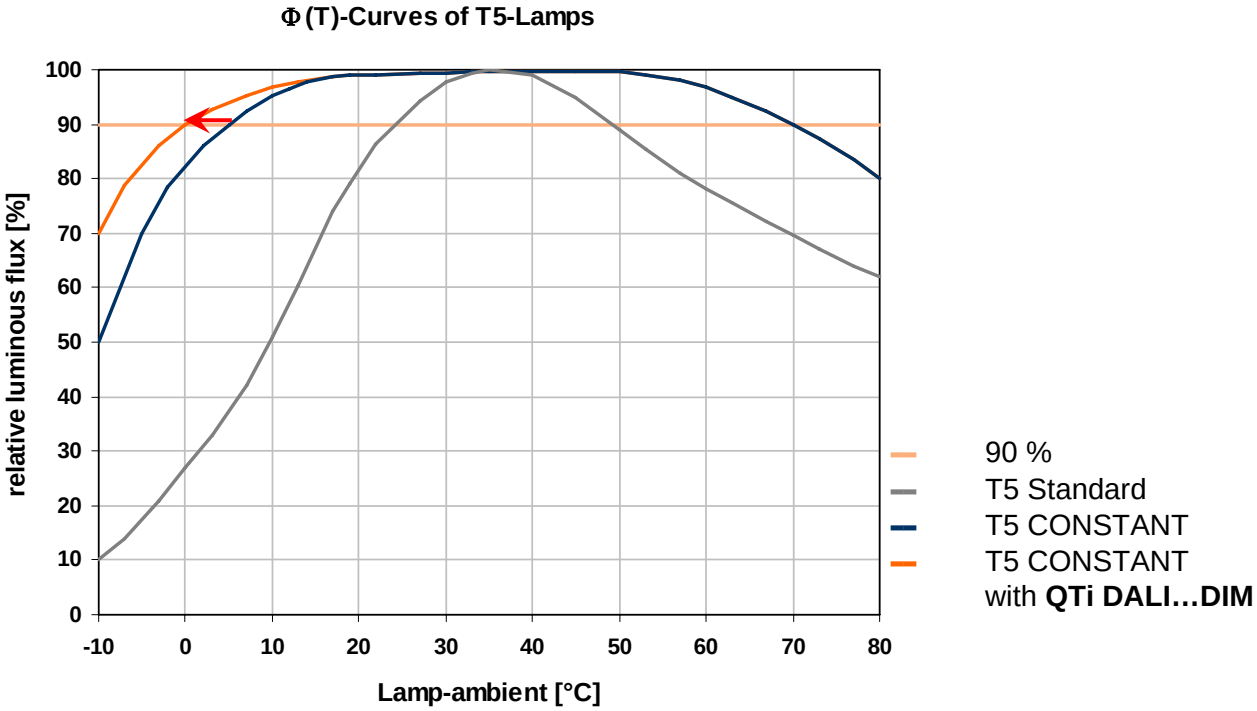

Figure 3: QTi DALI…DIM: More luminous flux over a wider range of temperature