
GUIDELINE LEDLAMPS

1. WHERE CAN LEDRETROFITLAMPS BE INSERTED?

Retrofit lamps are replacements for classic incandescent, halogen or compact and standard fluorescent lamps

LEDr lamps are retrofit products and can normally be used wherever traditional lamps have previously been used.

However, there are some special characteristics to be considered, see also point 2 below.

2. WHAT HAS TO BE CONSIDERED WHEN USING LED LAMPS?

Contrary to traditional illumination LED light emits significantly less heat than traditional lamps. However, to operate the LEDr lamps in the luminaire housing (usually in the sockets) electronic drivers are implemented. The components of these integrated electronic drivers generate heat during operation and are sensitive to excessive temperatures. Therefore, it is helpful for the lifetime of the LEDr lamp to ensure a suitable heat dissipation (see also 10. Tc temperature). Particularly critical are very narrow, closed luminaires. As a typical example, reflector recessed luminaires for halogen spots can be considered. In open luminaires using classic design shaped lamps there are usually less problems. Thermal overloading of the lamps, which is often discernible externally from discoloration and faded stamping, can lead to overheating with premature wear and failure of individual components.

The hotter an LEDr lamp operates, the higher the expected rate of early failures and the shorter the expected LED lifetime.

3. WHICH LAMPS ARE SUITABLE FOR OUTDOOR USE AND WHAT HAS TO BE CONSIDERED?

LEDr lamps are generally IP20 rated. This does not provide adequate protection against humidity (rain, condensation) but is sufficient for interior usage. They can be used outdoors only in designated and approved luminaires.

4. WHICH LAMPS ARE SUITABLE FOR STAIRCASE TIMER LIGHTING FIXTURES AND WHAT HAS TO BE CONSIDERED?

There are a variety of staircase timer lighting fixtures in the market which produce lag function and switch-off warning in different ways. There are timer lighting fixtures with a switch-off warning, which dim the light down slowly. For this dimmable lamps must be used.

If the pre-warning function is generated by short off-times (flashing), non-dimmable lamps can be used.

The switch-off warning initiates a high number of switching cycles in the lamps.

Therefore, it should be ensured to use lamps with high switching cycles.

Mixed operation with inductive loads can cause voltage spikes with each switching operation, thereby damaging the LED lamp.

Due to the large number of different staircase automats in the market, it should be tested using a sample lamp as to whether all functions are guaranteed.

5. INFORMATION FOR DIMMER AND TRANSFORMER OPERATION

In application with dimmers or low-voltage lamps (12V), the compatibility list provided for the respective lamps (for tested and approved dimmers and ballasts) should be referred to:

<https://www.ledvance.com/professional/services/led-lamps-compatibility/index.jsp>

6. WHAT ABOUT THE USE OF LED LAMPS, IF FOR EXAMPLE THE CEILING LUMINAIRE ONLY ALLOWS ONE LAMP WITH MAXIMUM 60W, BUT A REPLACEMENT TYPE FOR 75W OR 100W SHOULD BE USED?

The max. permissible lamp wattages usually refer to incandescent lamps and are not crucial for LEDr lamps. This information can be used to guide you through application problems by switching to LEDr lamps. Depending on the design of the luminaire, equipping can also be successful with a higher lamp wattage; always note points 2 and 10.

7. WHAT TO OBSERVE WHEN USING LED TUBES (OSRAM SUBSTITUBE) REGARDING COMPENSATION, ECG, COMPATIBILITY, ETC.?

The rod-shaped LED retrofit tubes have their own installation and compatibility list, which it is vital to observe.

Any existing luminaire compensation must be observed.

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8. WHAT HAS TO BE CONSIDERED WHEN USING DULUX LED LAMPS (ECG COMPATIBILITY, ETC.)?

The published compatibility list must also be observed for LED replacement types for compact fluorescent lamps. In particular there are sometimes different types of wiring for operation on direct line voltage or electronic ballast operation.

<https://www.ledvance.com/professional/services/led-lamps-compatibility/ecg-compatibility/index.jsp>

(Compatibility lists special lamps)

9. GLIMMERING FLASH OF TURNED OFF LED LAMPS.

Unfavorably installed parallel lines can cause capacitive coupling into electroless lines, which can result in glowing or flashing of LED lamps.

When using incandescent or halogen lamps, this does not matter. If, however, the old lamps are replaced by LED retrofit lamps, even small residual currents in the off position of the switch can charge the input circuit of the LEDr lamp until the threshold voltage at the input capacitor is reached. The discharge of the capacitor can lead to an uncontrolled and unwanted flickering, flashing or glowing of the LEDr lamp.

Examples of other components that can cause such disturbances: power dissipation capacitors, electronic switching elements, glow lamps in the light switch, sensors, etc. Even with power dimmers with load monitoring (as known from some KNX building automations systems) monitoring currents can cause a similar flicker or glowing effect.

For lamp types that show this glowing or flashing, this phenomenon can be corrected by a parallel RC extinguishing element.

10. OPERATING TEMPERATURE OF LED LAMPS

The maximal permissible operation temperature (T_c max-temperature) of the lamps are specified in the technical data sheet. There are also T_c measuring points deposited or which can be communicated on request.

To check the temperatures occurring in the application, a suitable temperature measuring device with a thermocouple glued to the lamp is recommended. Infrared thermometers are not suitable for a measurement and lead to inaccurate results.

For LED lamps, there is also a maximum permissible ambient temperature which must not be exceeded under any circumstance. This temperature is usually 40°C (see information on the lamp package and in the data sheet).

A too high operating temperature can damage both the LEDs and the integrated electronics and lead to early failures, color changes, and so on.

Ideal is a free-burning lamp or a lamp which allows a good flow of cooling air (convection heat) around it without heat accumulation. In upward facing closed luminaires it often comes to temperature accumulation, which can affect the optimal operation of the lamp.

11. LIFETIME INFORMATION

On the packaging so-called L70B50 lifetime values are given. These have been determined statistically in firing tests under standard conditions. These are mean values, meaning deviations from individual lamps are possible and permitted. The same applies to the information on the switching resistance.

The lifetime is determined or defined at an ambient temperature of 25°C. Higher ambient temperatures lead to a reduction of the lamp lifetime.