

# MAINTENANCE PROTOCOL

## LED



*In addition to cleaning the reflectors and protective glass and replacing lamps, a lighting installation needs to be checked from time to time for good operation. The lighting installation is part of the electrical installation of a company and must comply with the NEN 3140 and NEN 1010 standards. Just like a car, good maintenance ensures that the installation is safe and reliable. Good maintenance greatly reduces the risk of power failures and even fires.*

*This manual examines in depth the need for the timely replacement of lamps, testing of the installation, inspection of fittings and replacement of components.*

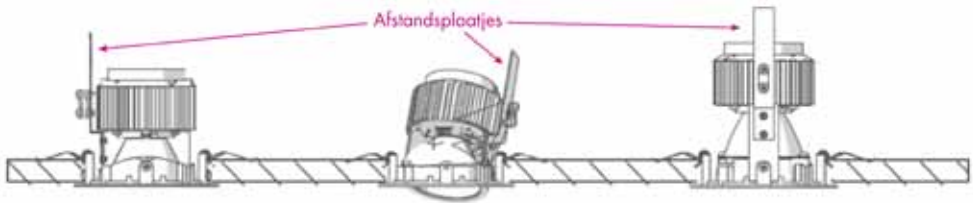
**Any modifications to the electrical installation should always be carried out by a qualified professional!  
Repairs/modifications to the devices should only be performed by Lunoo!**

POINTS TO NOTE DURING TESTING AND MAINTENANCE:

## -- COOLING SYSTEM

The lifespan of an LED is determined by its junction temperature. Active or passive cooling is used to keep this under control. The cooling system has been set to optimally cool the LED to an ambient temperature of 25°C. When ambient temperatures are above 25°C, the lifespan of the LED is no longer guaranteed. Ventilation grilles may be fitted, depending on the type of device. For optimum operation, the ventilation grilles should be kept unobstructed and the cooling system should be kept free of dust. Where necessary, use a can of compressed air to remove the dust.

For the cooling system to work effectively, there should always be a gap of at least 3 cm between the device and the ceiling. The fitted spacer plate should not be removed under any circumstances.



Do not cover the fitting with insulation materials.

## -- LAMP REPLACEMENT

The lifespan of an LED module is usually defined as L70B50 @ 50,000 hours. This means that after 50,000 hours at least 50% of the LED modules will emit at least 70% of the initial quantity of light. In other words, a maximum of 50% of the LED modules will emit less than 70% of their initial light stream or become defective after 50,000 hours.

With the exception of an LED retrofit lamp, LED lamps seldom need to be replaced. When the LED is cooled properly, the LED will only malfunction under exceptional circumstances. However, the LED will emit less light depending on the number of hours of use. When an LED becomes defective it should only be replaced by Lunoo.

## -- MAINS VOLTAGE

Check the mains voltage regularly. For correct functioning, the mains voltage should be between 202 and 254V and it should have a frequency between 50 and 60Hz.

## -- LED CURRENT

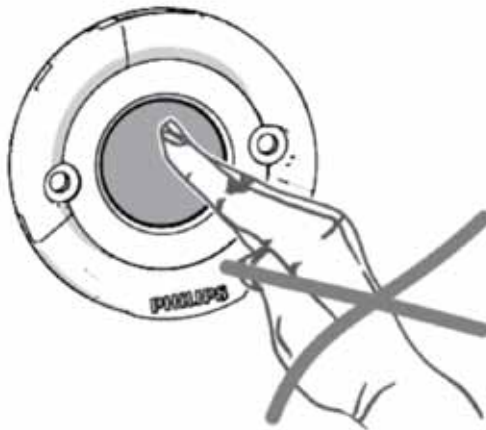
LEDs are driven by electrical current. The configured current should never be altered. A different current may cause the LED, its driver or even the active cooling system to malfunction.

## -- LIGHTNING AND OVERVOLTAGE PROTECTION

Lighting devices which become defective due to overvoltage are no longer covered by the guarantee. These malfunctions are temporary and rapidly changing voltage pulses that reach an amplitude of several kilovolts within a few microseconds. The most common causes for overvoltage are not lightning discharges as many people think. Rather, these are due to switching operations in installations. To protect the lighting devices, you should use an overvoltage protector. A specialised company would be best suited to help you with this.

## -- DO NOT TOUCH THE LED

The light-emitting surface of the LED module should not be touched. Furthermore, it should not be treated with chemical products as this can reduce the stream of light, change the colour temperature or even cause general malfunctions.



## -- CLEANING THE REFLECTOR

To maintain the highest possible performance, the reflector can be cleaned at regular intervals. These intervals depend on where the device is being used. You can find more information on the Lunoo website: <http://www.lunoo.eu/sites/www.lunoo.eu/files/manual-reinigen-reflektoren.pdf>

This maintenance protocol can also be found on the website  
**[www.lunoo.eu](http://www.lunoo.eu)**

If you require any further information, please contact  
**[service@lunoo.eu](mailto:service@lunoo.eu)**

