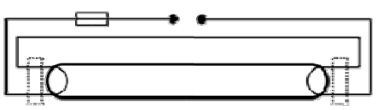
www.osram.com/substitube

Installation Instructions for retrofitting a CCG luminaire and direct line voltage connection

SubstiTUBE® Value / Basic / Advanced

ST8-HV / ST8-HB / ST8-HA



OSRAM

1. Installation options

1. Installation options

Which configuration fits to what kind of luminaire? Which setup leads to which advantages and disadvantages? Described below are the possible options. Please refer to the following chapters for more details, product related details and technical datasheets can be downloaded at www.osram.com/substitube

1.1 Overview

Retrofitting a CCG luminaire accord. IEC 62776 Draft

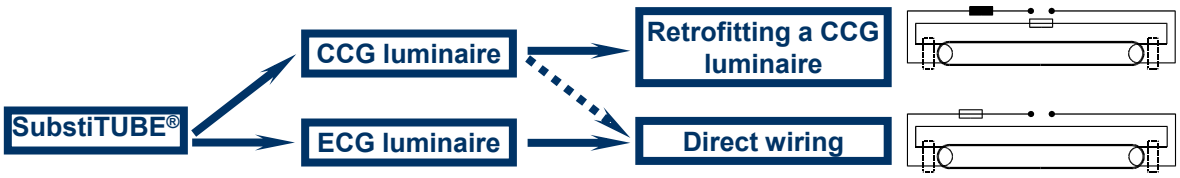
- Very easy and safe installation of SubstiTUBE®
- The luminaire can still be used for fluorescent lamps when the normal starter is reinstalled.
  → The certification of the luminaire remains valid.
- Losses of CCG are significantly reduced to usually ~1W

Direct wiring

- Rewiring of luminaire necessary! → Installation must be done by qualified Electricians only and all security precautions described herein must be followed

- Responsibility of technical and safety consequences of the converted luminaire is shifted to the party carrying out the conversion.
- Conformity with all applicable legal requirements must be assured for the rewired luminaire and compliance with all relevant safety requirements and other technical standards (e.g. acc. to DIN VDE 0701-0702) must be established
- The converted luminaire must be given a new type plate.
- The converted luminaire must not be operated with fluorescent lamps after rewiring.
- The installer becomes the legal responsible for the converted luminaire.

Please refer to chapter 3.1 “Direct wiring” for more details.

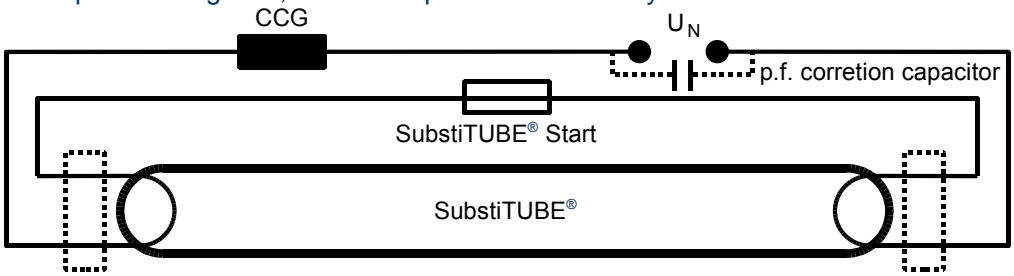


Overview of possible installations

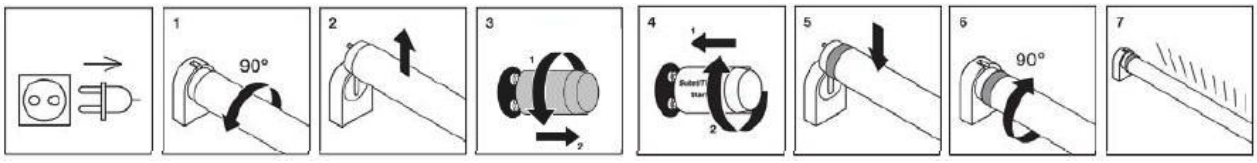
2. Retrofitting CCG

2. Retrofitting in a CCG luminaire

Exchanging the starter and replacing the lamp is all what needs to be done to upgrade an existing luminaire with conventional control gear to newest OSRAM LED-technology. The fluorescent lamp has to be exchanged with SubstiTUBE® and the starter being replaced by SubstiTUBE® Start. The built-in CCG can be used as it is and existing certifications remain valid. Its losses are reduced to ohmic losses of usually about 1W.
If the starter has not been changed to SubstiTUBE® Start the luminaire will start blinking. Please switch off immediately and change the starter, because SubstiTUBE® can be damaged.
SubstiTUBE® can be used in luminaires with changeable starter only. Existing power factor compensation capacitors worsen the power factor, but may remain within the luminaire.
Furthermore, it should be taken into consideration the maximum amount of SubstiTUBE® connected to one circuit breaker according technical datasheet.
In case a conventional fluorescent lamp is being inserted when the SubstiTUBE® Start is in place, the lamp ends will gleam, but the lamp will not be destroyed.



Circuit diagram of a retrofitted CCG luminaire



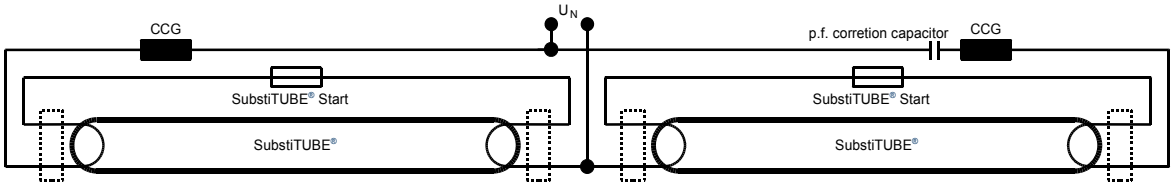
Retrofitting for common lamp holders

Installation Instructions

- Make sure that the supply voltage is disconnected
- Remove the conventional lamp
- Replace the old starter with SubstiTUBE® Start
- Insert SubstiTUBE® into lamp holders and check the light distribution angle

- SubstiTUBE® Start (with fuse 250V, T2A) necessary for operation and safety

Duo circuit double lamp luminaires can be refitted analogue to single lamp luminaires.



Circuit diagram of a retrofitted double lamp CCG luminaire

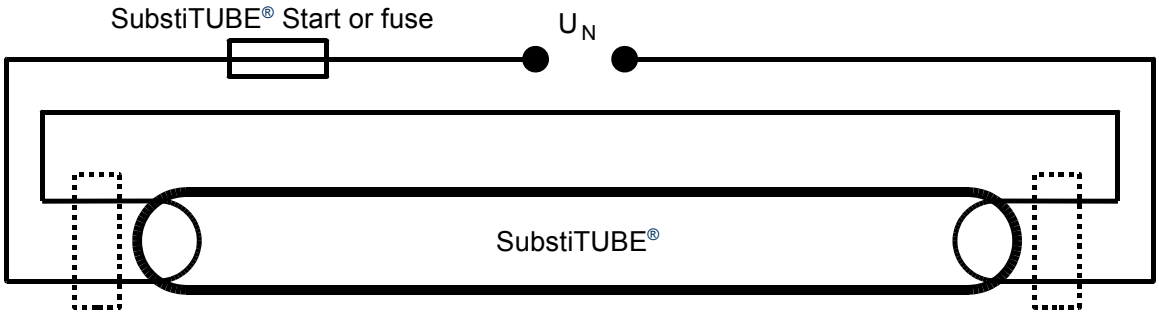
3. Direct Wiring

3. Direct line voltage connection

If an ECG luminaire is retrofitted or the losses of CCGs should be eliminated, the luminaire must be rewired, as described below in 3.1 “Direct wiring”. Analogue proceeding is recommended for new luminaires.
Luminaires may only be adapted to accept conversion lamps by appropriately trained personnel. Conversion of the luminaire shifts the responsibility for the technical and the safety consequences of the conversion to the party carrying out the conversion; this person becomes the legal responsible for the new product.

3.1 Direct wiring

It is recommended to rewire a luminaire on both sides as shown below. Thus SubstiTUBE® can be inserted in any direction with standardized IEC compliant G13 lamp holders. All wires need to be approved for the existing voltages and appliance class. Usually solid wires with single isolation can be used for class I, double insulation wires could be used for class II. The maximum wire cross-section for lamp holders and starters is typically 0.5mm^2. Built-in control gears must not remain connected after rewiring.



Direct wiring circuit diagram of a retrofitted luminaire

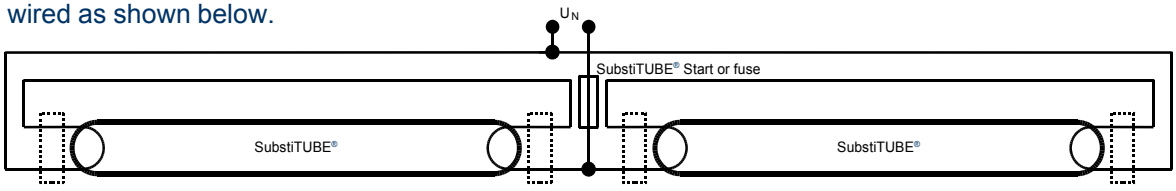
Installation instructions

- Rework by qualified electricians only
- Make sure that the supply voltage is disconnected
- Remove the conventional lamp
- Remove power factor correction capacitor (if installed) to improve power factor

- Rewire the luminaire as shown in the circuit diagram above
- Use SubstiTUBE® Start or a fuse (250V, T2A)
- Insert SubstiTUBE® into lamp holders and check the light distribution angle
- Assure that the rewired luminaire conforms with all applicable legal requirements and establish that it complies with all relevant safety requirements and other technical standards (e.g. acc. to DIN VDE 0701-0702)
- Mark rewired luminaire with new type plate

- SubstiTUBE® Start or fuse (250V, T2A) is necessary for installation protection
- Do not insert fluorescent lamps, as they would be destroyed

Double lamp luminaires can be refitted analogue to single lamp luminaires. The luminaires are to be wired as shown below.

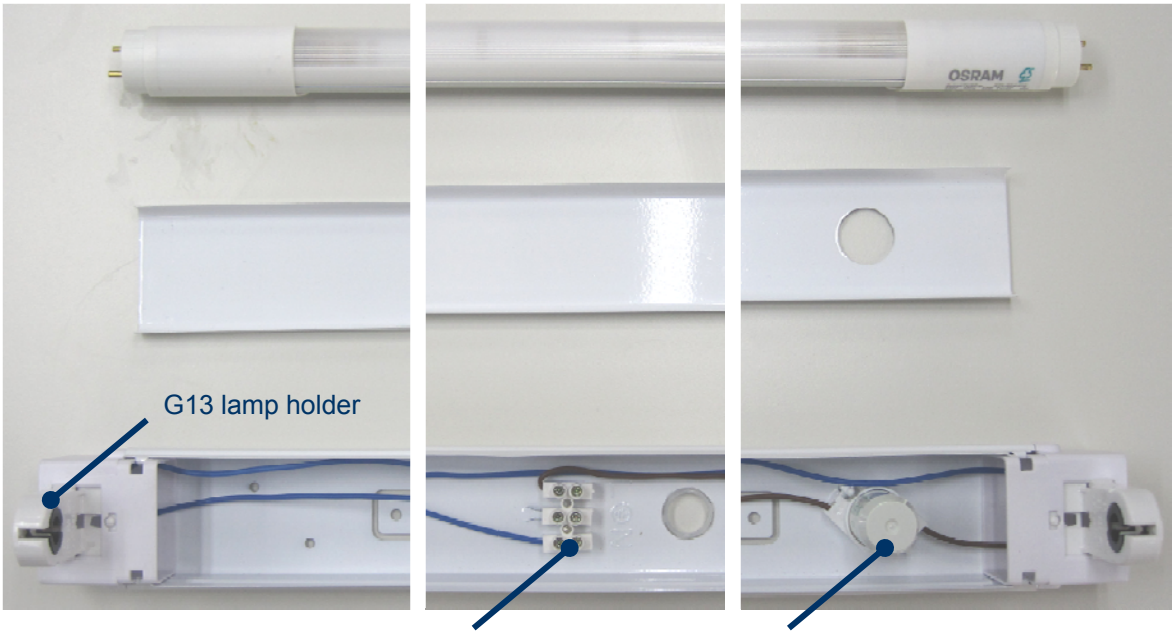


Direct wiring circuit diagram of a retrofitted double lamp luminaire

3. Direct Wiring

3.1.1 Sample installation direct wiring

Direct wiring of a luminaire for SubstiTUBE® (control gear removed).



Make sure to modify the wiring completely, otherwise e.g. short circuits could lead to damage.