



LEDVANCE

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Advanced Tube

Better performance
More energy saving
ADVANCE WITH US!

Product Feature

- Advanced specification with high product quality and performance
- Single end design, comply with IEC safety standard
- 1:1 retrofit without rewiring. A simple and easy solution to upgrade to LED technology
- Up to 50,000 h lifetime, up to 50% of energy saving comparing to traditional fluorescence

Light is **OSRAM**

SubstiTUBE® Advanced EM Tube Technical Datasheet



Technical Operation Data

	Lumen flux [lm]	Power [W]	Voltage [V]	CCT [K]	Average Beam angle [°]	SDCM	Ra	Lifetime [h]
ST8A-0.6M 9W/865	1000	9	220-240	6500	>160	≤5	>83	50,000
ST8A-0.6M 9W/840	1000	9	220-240	4000	>160	≤5	>83	50,000
ST8A-1.2M 18W/865	2100	18	220-240	6500	>160	≤5	>83	50,000
ST8A-1.2M 18W/840	2100	18	220-240	4000	>160	≤5	>83	50,000
ST8A-1.5M 21W/865	2400	21	220-240	6500	>160	≤5	>83	50,000
ST8A-1.5M 21W/840	2400	21	220-240	4000	>160	≤5	>83	50,000
ST8A-1.2M 16W/865 HE	2200	16	220-240	6500	>160	≤5	>83	50,000
ST8A-1.2M 16W/840 HE	2200	16	220-240	4000	>160	≤5	>83	50,000
ST8A-1.2M 22W/865 HO	2600	22	220-240	6500	>160	≤5	>83	50,000
ST8A-1.2M 22W/840 HO	2600	22	220-240	4000	>160	≤5	>83	50,000

Technical Features

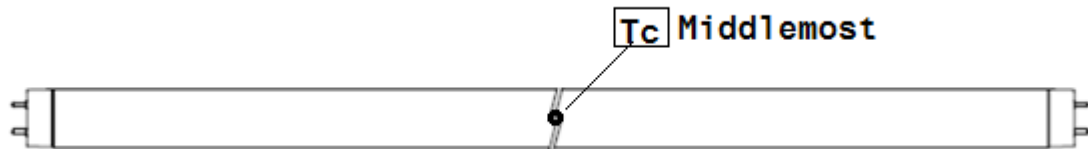
- LED lamp in T8 shape with G13 socket
- Glass body with polycarbonate end-cap
- 220V~240V, 50/60Hz input, direct retrofit for CCG luminaries
- Two CCT spec. 6500K, 4000K, Color Rendering Index (Ra)>83
- PF>0.95
- Total Harmonic Distortion <20%
- High color homogeneity, SDCM≤5
- Up to 50,000h lifetime (L70B50)
- Instant 100% light without flickering
- Not for operation with ECG, not dimmable
- RoHS-conformity, no mercury

1. All technical parameters apply to the entire lamp. Because of the complex manufacturing process for light-emitting diodes (LEDs), the specified typical values for LED technical parameters represent only purely statistical variables. They do not necessarily correspond to the actual technical parameters for each individual product which can deviate from the typical value.
2. The average lifetime of LED lamps is defined as the number of hours when the light output of 50% of a large group of identical lamps goes below 70% of its initial luminous flux (L70B50, IEC62612). The lifetime is estimated at room temperature (25°C), free air burning, base up burning position and at rated voltage.



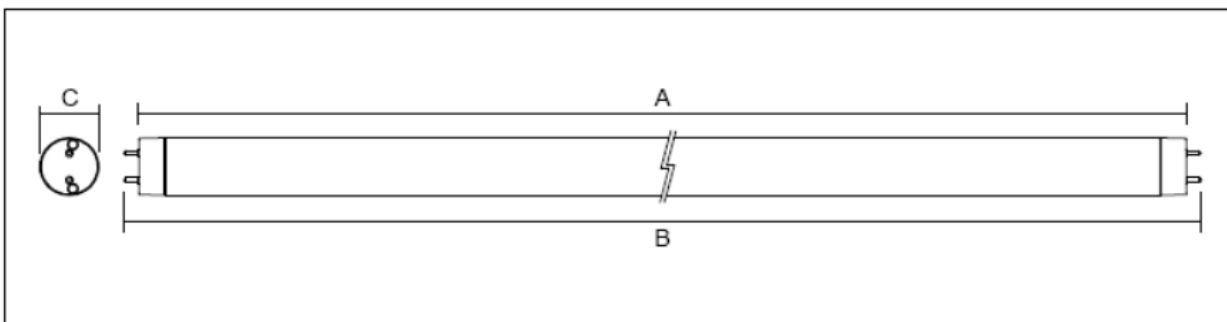
Minimum/Maximum rating

Models	Ambient temp. T_a	Storage temp. T_s	Maximum temp. T_c
ST8A-0.6M 9W	-20 ... 45° C	-20° ... 80° C	<75° C
ST8A-1.2M 18W	-20 ... 45° C	-20° ... 80° C	<75° C
ST8A-1.5M 21W	-20 ... 45° C	-20° ... 80° C	<75° C
ST8A-1.2M 16W HE	-20 ... 45° C	-20° ... 80° C	<75° C
ST8A-1.2M 22W HO	-20 ... 45° C	-20° ... 80° C	<75° C



Mechanical Specifications

Models	A	B	C	Net weight
ST8A-0.6M 9W	589±1mm	603±1mm	28mm	104g
ST8A-1.2M 18W	1198±1m	1212±1mm	28mm	200g
ST8A-1.5M 21W	1499±1mm	1513±1mm	28mm	239g
ST8A-1.2M 16W HE	1198±1m	1212±1mm	28mm	200g
ST8A-1.2M 22W HO	1198±1m	1212±1mm	28mm	200g

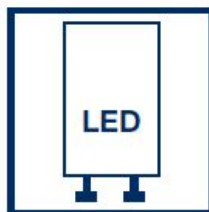


Safety and application notes

- The SubstiTUBE® Tube must be handled with care, and do not operate the product that in a damaged condition.
- When operating with CCG (magnetic ballast), SubstiTUBE® Starter has to be inserted to replace the conventional fluorescent lamp starter. If the conventional starter is not replaced, the SubstiTUBE® Tube will start blinking and be damaged!
- Do not use SubstiTUBE® Tube in luminaires which do not have any conventional starter or whereby the conventional starter cannot be replaced. Otherwise, rewiring is needed.
- Not suitable for luminaires with serial lamp connection i.e. more than one tube at one magnetic ballast.
- The SubstiTUBE® Tube emits light at limited angle, unlike conventional fluorescent tube in 360°Omni direction.
- Due to the light distribution characteristic of the SubstiTUBE® Tube the resulting luminaires light characteristic is likely to change. It is not guaranteed that e.g. standards for lighting at working places will be complied with after replacement. A photometric check of the installation is highly recommended.
- The effective energy savings depend on the efficiency of the luminaire setup to be replaced and should be considered individually in each case. Particularly magnetic ballast losses are reduced to ohmic losses and are normally only about 1W.
- The SubstiTUBE® Tube is protected according to IP20. Applications with external risk of moisture and dust can be served with an adequately protected luminaire.
- SubstiTUBE® products differ in their diameters and geometries from fluorescent lamps. Their use in open batten luminaires with gaskets is possible if no excessive force is expended during the fixing. Obtaining the necessary IP protection in open batten luminaires with gaskets cannot be ensured.
- SubstiTUBE® Tube may also be driven directly on line voltage. In order to grant a safe operation mode please refer to the installation instructions for further information.
- Photobiological Safety of lamps and lamp systems according to IEC 62471. Risk Group: Exempt



Dimming not allowed

Lamp suitable for
50 Hz or 60 Hz
operationLED replacement
starterLamp to be used in
dry conditions or
in a luminaire that
provides protectionLamp not suitable for
emergency operation

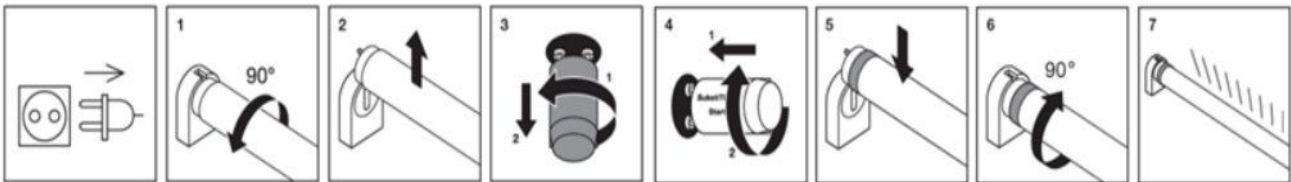
Installation Guide

1) Retrofitting a CCG luminaire accord. to EN 62776

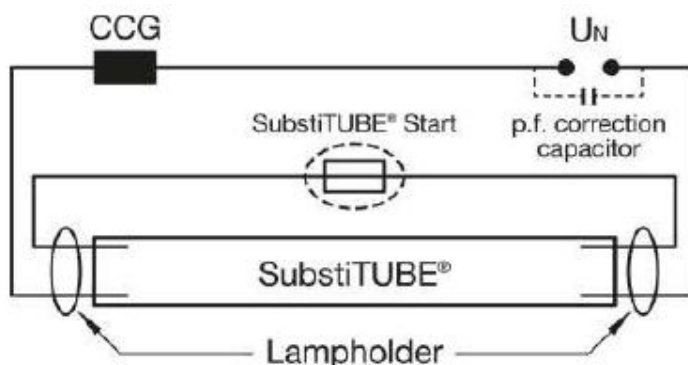
Replacing fluorescent T8-tube and installed starter by SubstiTUBE® Advanced EM tube and SubstiTUBE® Starter

Below an example for typical lamp holder types

- ✓ Please ensure that the voltage supply is disconnected.
- ✓ Carefully remove the fluorescent tube and conventional starter according to the lamp holder type
- ✓ Insert SubstiTUBE® Advanced Tube and SubstiTUBE® Starter properly.



- Turn the conventional lamp 90° and take it out of the socket.
- Remove the conventional starter by turning it.
- Insert and latch the SubstiTUBE® Starter into starter socket.
- Insert SubstiTUBE® Advanced EM tube into socket and locate into position by turning 90°.
- Check light .emission direction



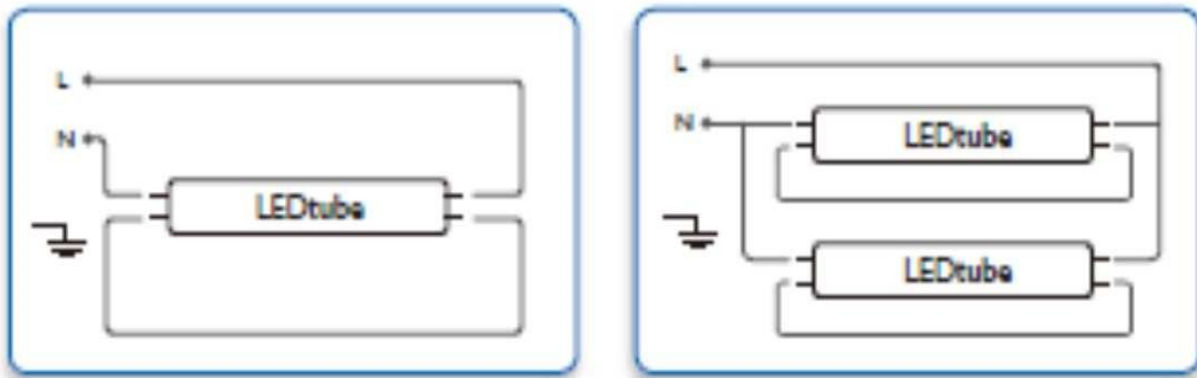
Circuit diagram of a retrofitted CCG luminaire

Installation Guide

2) Installation directly on line voltage

SubstiTUBE® Advanced EM Tube may also be driven directly on line voltage. **Please check the L/N markings on the LED tube.** In order to grant a safe operation mode please refer to the installation instructions for further information. Installation must be done by qualified Electricians and all security described should be strictly followed.

Diagram show on below is the reference rewiring for one lamp and repeat same wiring for multiple tubes



3) Installation of an ECG luminaire with EM tube

SubstiTUBE® Advanced EM is not for use with ECG (electronic control gear). Rewiring of the luminaire is necessary for replacing fluorescent tube by SubstiTUBE® in ECG luminaires. Installation must be done by qualified Electricians and all security described should be strictly followed.

Ordering Guide

Product	EAN-10*	EAN-40**	S-Unit***
ST8A-0.6M 9W/865 230V EM 25X1 G7APMOSRAM	4058075034174	4058075034181	25X1
ST8A-0.6M 9W/840 230V EM 25X1 G7APMOSRAM	4058075034198	4058075034204	25X1
ST8A-1.2M 18W/865 230V EM 25X1G7APMOSRAM	4058075034211	4058075034228	25X1
ST8A-1.2M 18W/840 230V EM 25X1G7APMOSRAM	4058075034235	4058075034242	25X1
ST8A-1.5M 21W/865 230V EM 25X1G7APMOSRAM	4058075034259	4058075034266	25X1
ST8A-1.5M 21W/840 230V EM 25X1G7APMOSRAM	4058075034273	4058075034280	25X1
ST8A-1.2M 16W/865 220VEM HE 25X1 G7OSRAM	4058075034297	4058075034303	25X1
ST8A-1.2M 16W/840 230VEM HE 25X1 G7OSRAM	4058075034310	4058075034327	25X1
ST8A-1.2M 22W/865 230VEM HO 25X1 G7OSRAM	4058075034334	4058075034341	25X1
ST8A-1.2M 22W/840 230VEM HO 25X1 G7OSRAM	4058075034358	4058075034365	25X1

* ENA-10: ordering code for single unit

** ENA-40: ordering code for shipping unit

*** S-Unit: Lamps per shipping unit

Sales and Technical Support

Sales and technical support is given by the local LEDVANCE subsidiaries.

On our worldwide homepage all LEDVANCE subsidiaries are listed with complete address and phone numbers.

WWW.ledvance.com

WWW.osram-lamps.com/substitube

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Any update of data in this datasheet will
not be informed
Please contact LEDVANCE Lighting for
detailed information