



OSRAM SubstiTUBE

TIME FOR A CHANGE

FUTURE-PROOF LED TUBES FOR YOUR APPLICATIONS

SEPTEMBER 2021

LEDVANCE is licensee of product trademark OSRAM for lamps products in general lighting.





SWITCH NOW FOR A BRIGHT FUTURE WITH THE EU-COMPLIANT OSRAM SubstiTUBE

The new European Single Lighting Regulation (SLR) and Energy Labeling Regulation (ELR) mean that from September 2021 many conventional fluorescent tubes will be gradually phased out. But there's nothing to worry about for you. Having LEDVANCE with more than 100 years of experience by your side as an innovative lighting partner will give you peace of mind.

Whether it's a conversion (rewiring) or retrofit you require, our comprehensive SubstiTUBE range offers you the ideal LED tubes for your projects – energy-efficient and durable, low-flicker and with a shatter-proof glass body but, above all, EU-compliant and therefore future-proof.

Discover all the advantages of the new extended SubstiTUBE range from LEDVANCE on the following pages and switch to high-quality, climate-friendly and future-proof light.

CONTENTS

BENEFITS	03	RETROFIT OR CONVERSION	12
SLR AND ELR – THE PATHWAY TO CLIMATE-FRIENDLY LIGHTING	04	INSTALLATION INSTRUCTIONS	14
ELR – THE NEW ENERGY LABELING REGULATION	05	CASE STUDY	17
SLR – QUALITY OF LIGHT	06	SubstiTUBE APPLICATION MATRIX	18
SLR AND ELR – NEXT STEPS	07	PRODUCT TRENDS	19
SEGMENTATION	08	PRODUCT RANGE	20
SPECIAL TYPES T8 AND T9	10	CONVERSION KIT	40
LED TUBE T5	11	DAMP PROOF HOUSING	41
		FURTHER INFORMATION ON SIGNS, SYMBOLS AND LEDVANCE	42

DURABLE. HIGH-QUALITY. EFFICIENT. TOP BENEFITS GUARANTEE FUTURE-PROOF SOLUTIONS

With their powerful performance and leading technology, OSRAM SubstiTUBE LED tubes are superior to conventional T8, T5 and T9 fluorescent lamps in many ways.

OSRAM SubstiTUBE



EASY RETROFIT

Quick, simple and safe replacement with no rewiring



LOW MAINTENANCE AND OPERATING COSTS

Thanks to a long life of up to 75 000 hours



HIGH EFFICIENCY

Up to 175 lm/W



LOW-FLICKER LIGHT

According to the EU 2019/2020 regulation, and already meeting the requirements of 2024



DIRECT LAMP START

Instant 100 % light, ideal in combination with sensors



EFFICIENT POWER FACTOR

Pay only for the energy that is used



GREAT ENERGY SAVINGS

Up to 70 % compared to similar fluorescent lamps



SAFE SHATTER PROTECTION

Glass body with protective PET sleeve on many SubstiTUBE



EXCELLENT ECONOMY

Payback of acquisition and replacement costs possible after only four months



HIGH-QUALITY FULL GLASS

T5 and T8 range in full glass



RELIABLE PRODUCT GUARANTEE

3 or 5 years; more information at: www.ledvance.com/guarantee



APPROVED SAFETY

VDE-tested and certified according to IEC 62776: SubstiTUBE T8 EM PRO UO and PRO, SubstiTUBE T8 EM Food and Motion Sensor



GET READY FOR CLIMATE-FRIENDLY LIGHT

THE NEW EU ECODESIGN AND ENERGY LABELING REGULATIONS

The EU is embarking on the next stage in the journey toward efficient, climate-friendly lighting and there are some fundamental changes coming to the lighting market in 2021.

These changes are being triggered by the new EU 2019/2020 Single Lighting Regulation (SLR) and the new EU 2019/2015 Energy Labeling Regulation (ELR), which have been in force since the end of 2019. They are now being implemented in phases. The aim is to protect the environment, boost consumer protection and improve the sustainability of products.

Another innovation is the **European Product Registry for Energy Labeling (EPREL)**. For the first time, all the relevant information for all the light sources on the market will be centralized here and made available to all users of this database.

CO₂ REDUCTION – BUSINESS POTENTIAL

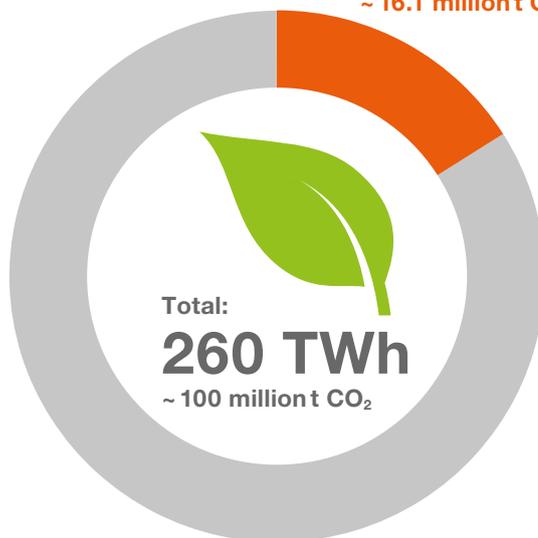
In the EU, the building sector accounts for around 36 % of total CO₂ emissions. Since 35 % of the buildings are over 50 years old, there is great renovation potential in this area. The goal is to reduce CO₂ emissions on the European construction market by at least 55 % by 2030 through energy-related retrofits and efficient technology. The EU countries support this goal with subsidies for energy-related building renovation. LEDVANCE's economical LED and connected lighting solutions are an excellent match for these savings.

AMBITIOUS CLIMATE TARGETS

The EU plans to save a total of 260 TWh of energy in 2030. Lighting would account for around 16 % of that. Energy consumption for lighting is to be reduced by 41.9 TWh. This target can only be achieved if the energy efficiency requirements for light sources are further increased.

ENERGY-SAVING TARGET FOR 2030:

41.9 TWh
~ 16.1 million t CO₂



CLEAR AND TRANSPARENT THE NEW ENERGY LABELS

Since 1994, energy labels in the EU have been used as quick and simple guidelines for consumers. The labels are now entering round three. Apart from a slightly modified design, the new labels for light sources differ essentially in two respects:

- The new energy efficiency scale from A to G.
- A QR code with a link to the product data stored in the EPREL database.

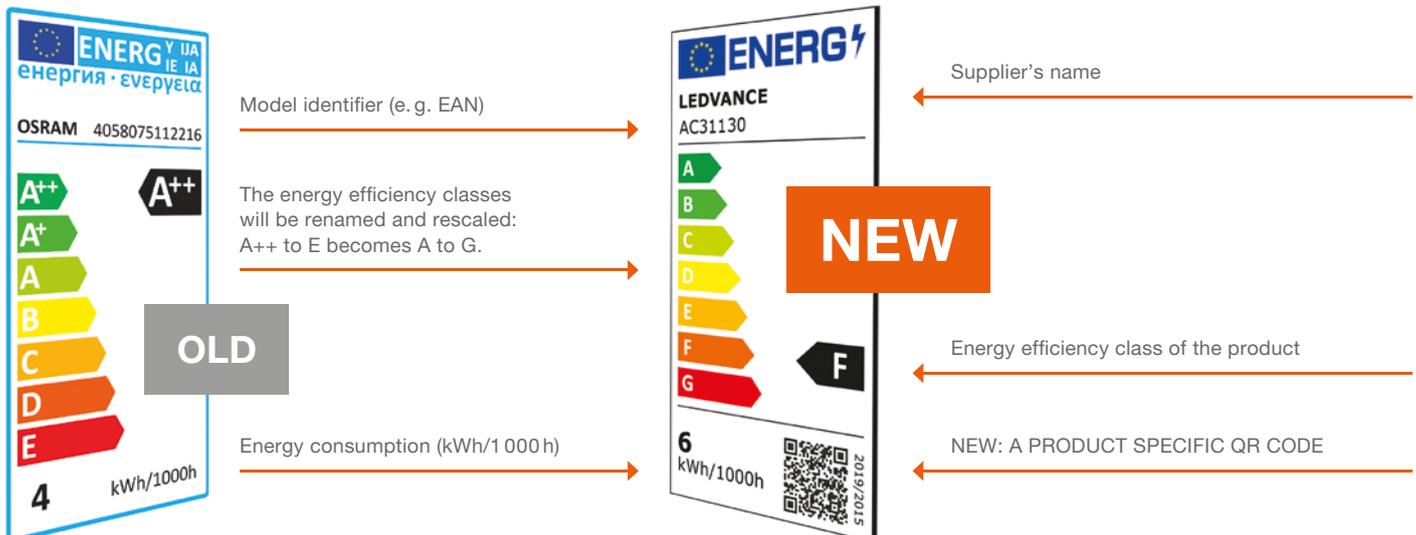
NEW CLASSIFICATION

The highest energy efficiency class was previously A++. Light sources in this class now fall into the new C to F classes. However, this does not mean they have been downgraded. The products are only being reclassified on a different calculation basis.

HOW TO READ OUR PRODUCT TABLES

The new lighting regulation states that the new EU label indicating the energy efficiency class must be clearly visible on every product packaging. To make our product tables clearer and easier to read, the energy efficiency class isn't specified by a colored arrow but a letter. See on the right.

Energy efficiency class Product packaging	Information Table
	A
	B
	C
	D
	E
	F
	G



TRANSITION PHASE UNTIL 2023

During a one-and-a-half-year transition period you will see both labels at the distributor.

Sept 1, 2021

Start of the transition phase. The old labels are now allowed only for products that were placed on the market before this date.

March 1, 2023

End of the transition phase. From this date, only the new label is allowed

OPTIMIZED QUALITY OF LIGHT: ILLUMINATING WORKSTATIONS FOR THE FUTURE

LEDVANCE will provide you with LED lamps that reliably fulfill the requirements of the new EU regulations at an early stage. Some of them already meet requirements that do not take effect until 09/01/2024 (see the infobox). Thanks to these products, you will be able to help your customers increase the safety of their workstations, improve employees' ability to concentrate, promote their well-being – and, in general, facilitate increased productivity.

MEETING TOMORROW'S REQUIREMENTS TODAY

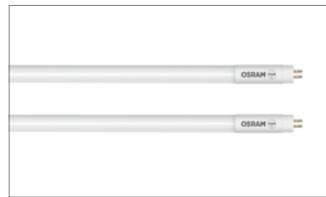
The following OSRAM LED tubes already meet the requirement of $SVM \leq 0,4^1$ that will go into effect on 09/01/2024:



OSRAM SubstiTUBE T8 EM and Connected



OSRAM SubstiTUBE T8 HF and Universal



OSRAM SubstiTUBE T5 HF and AC Mains



OSRAM SubstiTUBE T9 EM

STROBOSCOPIC AND FLICKER EFFECTS

As part of the SLR, the following new quality features are being introduced to improve the light quality of LED mains voltage light sources:

SVM (stroboscopic effect visibility measure)

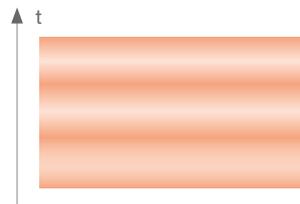
These effects can occur if non-compliant light sources illuminate a moving object. Stroboscopic effects can create dangerous situations because rotating or moving objects become less visible (e.g., revolving machine components are perceived to be "standing still").

P_{st}LM (perception of short-term light modulation)

This describes discernible flicker on monitors and light sources, among other areas. Compliance with the new thresholds will help prevent a feeling of discomfort, visual fatigue and headaches.



High-quality light creates occupational safety and dependable visual appearance in areas where rotating objects are used to facilitate concentration and control.



Here: a discernible and disruptive flicker effect



In comparison: Homogeneous light calms the visual field

NEW REGULATIONS AND KEY DATES

Requirements governing low-flicker qualities and the stroboscopic effect will be gradually toughened:



Stroboscopic effect
 $SVM \leq 0,9^1$
Low-flicker qualities
 $P_{st}LM \leq 1$



Stroboscopic effect
 $SVM \leq 0,4^1$

¹Exemptions: light sources for outdoor, industry and other uses that offer color rendering with CRI ≤ 80 .

ALWAYS LOOKING AHEAD: LEDVANCE BY YOUR SIDE

The new EU regulations are not aimed simply at removing certain lighting products from the market. They specifically promote energy-efficient and sustainable lighting design, strengthening of the circular economy and transparent information for consumers.

LEDVANCE expressly welcomes this path. That's why we are actively supporting our partners with the development of new, even more energy-efficient light sources, with measures and information that will guide you through the various phases of the regulations coming into force.

Products that do not achieve the minimum efficiency required by SLR may no longer be manufactured or sold from certain dates. You will find exceptions in the current SLR/ELR regulation in Annex III (SLR) and Annex IV (ELR) at www.eur-lex.eu.

The good news for you is that LEDVANCE defined all the affected products early on and can offer suitable alternatives. They will be ready in good time.

PHASE-OUT AND LEDVANCE REPLACEMENT PRODUCTS

PRODUCTS AFFECTED

BANNED FROM¹

LED REPLACEMENT

LINEAR FLUORESCENT LAMPS
T12 und T2



01.09.2021



LINEAR FLUORESCENT LAMPS
T8
600 mm, 1 200 mm, 1 500 mm



01.09.2023



¹ Products that are already on the market may still be sold after this date, but may not be placed on the market again.

HOW LEDVANCE AS A PARTNER CAN HELP YOU:

For you as a wholesaler, two aspects are particularly important – you need LED replacements for phased-out products to be available in good time and you need full compliance with the regulations regarding the new energy label and other information.

In both respects LEDVANCE ensures that you are compliant, both technically and legally. Here's how we support you:



Complete data management and registration of all LEDVANCE light sources in EPREL – including all required data



Full compliance with all **labeling and information requirements** – for example on packaging, on product data sheets and in operating instructions



Prompt availability of energy-efficient LED replacements for affected products



Continued reliable supply of traditional lamps as permitted in law



Continual development of our portfolio – for even greater energy efficiency and climate-friendly products



Clear and comprehensive information so you can be technically and legally compliant

THREE SEGMENTS FOR EVERY NEED

PERFORMANCE & TECHNOLOGY



OSRAM SubstiTUBE T8 EM PRO ULTRA OUTPUT

Operation on CCG and AC mains

- Luminous flux up to 4 100 lm
- Efficiency up to 175 lm/W
- Lifetime of 75 000 h¹
- 1 200 mm, 1 500 mm



OSRAM SubstiTUBE T8 EM PRO

Operation on CCG and AC mains

- Luminous flux up to 3 100 lm
- Efficiency up to 165 lm/W
- Lifetime of 75 000 h¹
- 438 mm, 600 mm, 900 mm, 1 100 mm, 1 200 mm, 1 500 mm



OSRAM SubstiTUBE T8 EM ADVANCED ULTRA OUTPUT

Operation on CCG and AC mains

- Luminous flux up to 3 700 lm
- Efficiency up to 160 lm/W
- Lifetime of 50 000 h¹
- 1 200 mm, 1 500 mm



OSRAM SubstiTUBE T8 EM ADVANCED

Operation on CCG and AC mains

- Luminous flux up to 3 100 lm
- Efficiency up to 150 lm/W
- Lifetime of 50 000 h¹
- 600 mm, 1 200 mm, 1 500 mm



OSRAM SubstiTUBE T8 EM VALUE

Operation on CCG and AC mains

- Luminous flux up to 2 200 lm
- Efficiency up to 120 lm/W
- Lifetime of 30 000 h¹
- 600 mm, 1 200 mm, 1 500 mm



MAKE THE RIGHT CHOICE

CONTROL GEAR AND TECHNOLOGY OVERVIEW

COMPATIBILITY	CCG	ECG ²	FOR AC MAINS
SubstiTUBE EM: "Electro magnetic" Replacement for T8 fluorescent lamps	✓	✗	✓
SubstiTUBE AC: "AC Mains" Replacement for T5 fluorescent lamps	✗	✗	✓

✗ = not compatible ✓ = compatible

¹L70/B50

²Check of the ECG compatibility list before installation required: www.ledvance.com/ecg-compatibility

The SubstiTUBE LED tubes come in the PRO, ADVANCED and VALUE segments. This allows you to easily meet the requirements of each of your lighting projects. And when it comes to technology, the SubstiTUBE range will also have the answer – no matter whether operated on ECG², CCG or AC mains.

OSRAM SubstiTUBE T8 HF/UN PRO ULTRA OUTPUT

HF on ECG² | UNIVERSAL on ECG², CCG and AC mains

OSRAM SubstiTUBE T8 HF PRO

HF on ECG² | UNIVERSAL on ECG², CCG and AC mains

- Lumen output up to 3 700 lm
- Efficiency up to 161 lm/W
- Lifetime of 60 000 h¹
- 600 mm (UN only), 1 200 mm, 1 500 mm



- Lumen output up to 3 100 lm
- Efficiency up to 155 lm/W
- Lifetime of 60 000 h¹
- 600 mm, 1 200 mm, 1 500 mm



OSRAM SubstiTUBE T8 HF/UN VALUE

HF on ECG² | UNIVERSAL on ECG², CCG and AC mains

- Lumen output up to 2 800 lm
- Efficiency up to 116 lm/W
- Lifetime of 30 000 h¹
- 600 mm (HF only), 1 200 mm (UN only), 1 500 mm (UN only)



COMPATIBILITY	CCG	ECG ²	FOR AC MAINS
SubstiTUBE HF: "High frequency" Replacement for T8/T5 fluorescent lamps	X	✓	X
SubstiTUBE UN: "Universal" One for everything. Replacement for T8 fluorescent lamps	✓	✓	✓

X = not compatible ✓ = compatible

¹L70/B50

²Check of the ECG compatibility list before installation required: www.ledvance.com/ecg-compatibility

OSRAM SubstiTUBE SPECIAL TYPES

SPECIAL TASKS, SPECIAL SOLUTIONS

The SubstiTUBE range from LEDVANCE also includes specialists. You can use them to offer your customers real added value for special applications.

OSRAM SubstiTUBE T8 EM CONNECTED

Operation on CCG
and AC mains

Light on demand: intelligent control via a sensor reduces energy consumption.

- Communication via Zigbee 3.0
- Low-flicker according to EU 2019/2020
- (SVM \leq 0.4; P_{stLM} \leq 1)
- Glass tube with splinter protection
- Only in connection with the LEDVANCE Connected Sensor:
Installation height
Low bay: up to 4 m
High bay: 4–14 m

LEDVANCE
5
year
guarantee

GLASS



OSRAM SubstiTUBE T8 EM MOTION SENSOR

Operation on CCG
and AC mains

With movement there's light.
Lighting control via the microwave sensor integrated in the tube.

- Integrated 5.8 GHz microwave sensor
- Available in three lengths:
600 mm, 1 200 mm, 1 500 mm
- Detection range up to 5 m
- 2-step dimming:
100 % (5 min), then 20 % (2 min),
then off
- Also works in closed luminaires

LEDVANCE
5
year
guarantee



GLASS



OSRAM SubstiTUBE T8 EM FOOD

Operation on CCG
and AC mains

A burst of freshness for
food presentation thanks to
a high R9 value.

- Similar spectrum to traditional NATURA (76) lamps with a high R9 value
- Available in three lengths:
600 mm, 1 200 mm, 1 500 mm
- Luminous flux up to 1 700 lm
- Ideal for meat processing plants,
butchers, supermarkets

LEDVANCE
5
year
guarantee



GLASS



OSRAM SubstiTUBE T9 EM

Operation on CCG
and AC mains

A great all-rounder: the efficient
LED alternative for traditional
T9 fluorescent lamps.

- Retrofit solution without rewiring
- Suitable for many luminaires thanks
to rotatable base
- Uniform illumination
- Lifetime of 30 000 h¹

LEDVANCE
3
year
guarantee



¹ L70/B50

OSRAM SubstiTUBE T5

LOWER MAINTENANCE COSTS, HIGHER LIGHT QUALITY

SubstiTUBE T5 LED tubes are the right energy-efficient and SLR-compliant replacement for virtually all conventional T5 HO or T5 HE fluorescent tubes. Available as SubstiTUBE T5 HF for the operation on ECG² or as SubstiTUBE T5 AC for operation directly on mains voltage (AC). Particularly convenient: you can keep using existing luminaires.



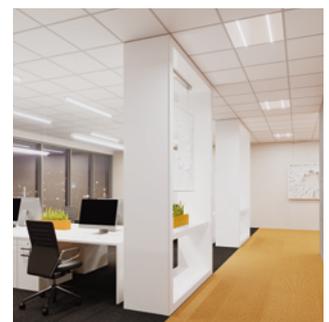
THE BENEFITS OF BOTH PRODUCT SEGMENTS AT A GLANCE:

- Maximum luminous flux of up to 5600 lm
- Low-flicker according to EU 2019/2020 ($SVM \leq 0.4$; $P_{stLM} \leq 1$)
- Shatter-proof glass tubes
- Lifetime of up to 50 000h¹

OSRAM SubstiTUBE T5 HF

Operation on ECG²

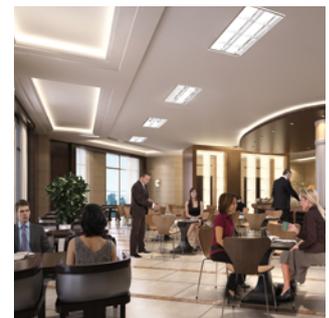
- High energy savings and longer lifetime result in fast payback times
- Quick and easy installation
- Operation on compatible ECG^{2,3}
- Shatter-proof glass tubes



OSRAM SubstiTUBE T5 220–240V AC

Operation on AC mains

- Existing luminaire is kept: rewired directly on 220 – 240V AC mains
- Removes any compatibility issues and energy losses from the control gear
- Eliminating maintenance costs associated with ballast replacements
- Shatter-proof glass tube



¹ L70/B50 | ² Check of the ECG compatibility list before installation required: www.ledvance.com/ecg-compatibility
³ Non-compatible with a direct mains voltage connection, 220–240 V AC

STEP BY STEP FINDING A SUITABLE OSRAM SubstiTUBE

The requirements for an LED tube vary greatly from application to application. For existing installations, the following steps will help you to decide whether a retrofit or conversion (rewiring) is the better solution, and to find the exact SubstiTUBE you need.

01 DETERMINE THE TUBE DIAMETER: T5 OR T8



02 DETERMINE THE TUBE LENGTH



03 DETERMINE THE CONTROL GEAR INSTALLED IN THE LAMP: ECG OR CCG?



See page 16:
Professional tips for identifying
the installed control gear.

04 FIND COMPATIBLE PRODUCTS FOR YOUR ECG OR CCG:

A) CHECK WHICH LEDVANCE LED TUBES YOUR ECG IS COMPATIBLE WITH

Check at
ledvance.com/ecg-compatibility



- Step 1:** Make a note of the ECG's brand, name and reference number
- Step 2:** Find the ECG in the list
- Step 3:** Select compatible LED tube from the list

Check online in the web app at
ledvance.com/tubefinder



- Step 1:** Enter the ECG's brand, name and reference number in the app's search field
- Step 2:** Compatible LED tubes are displayed and can be selected

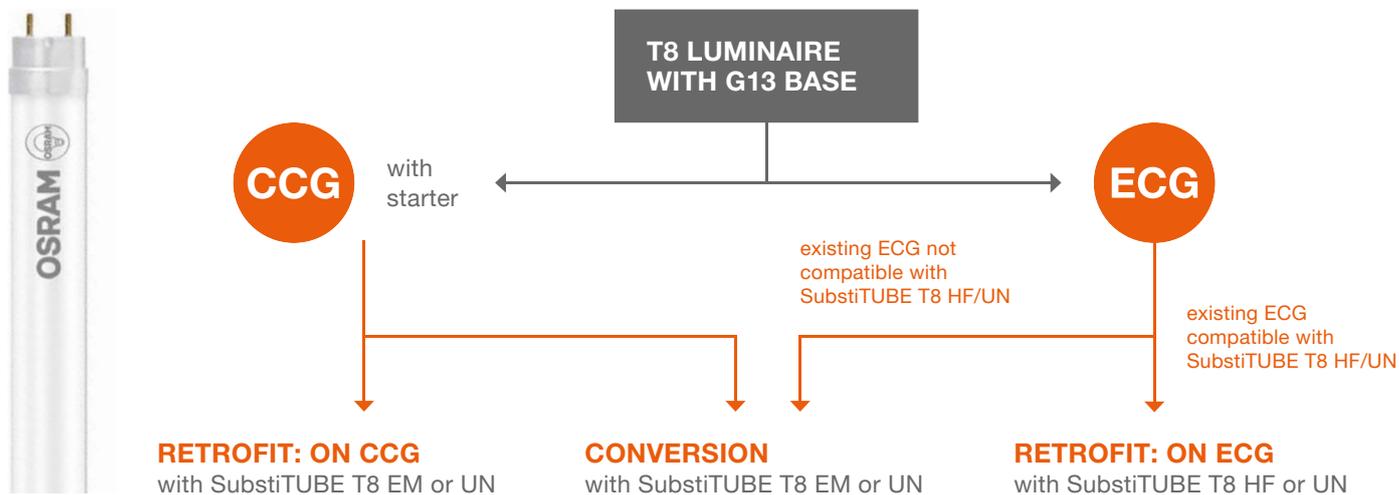
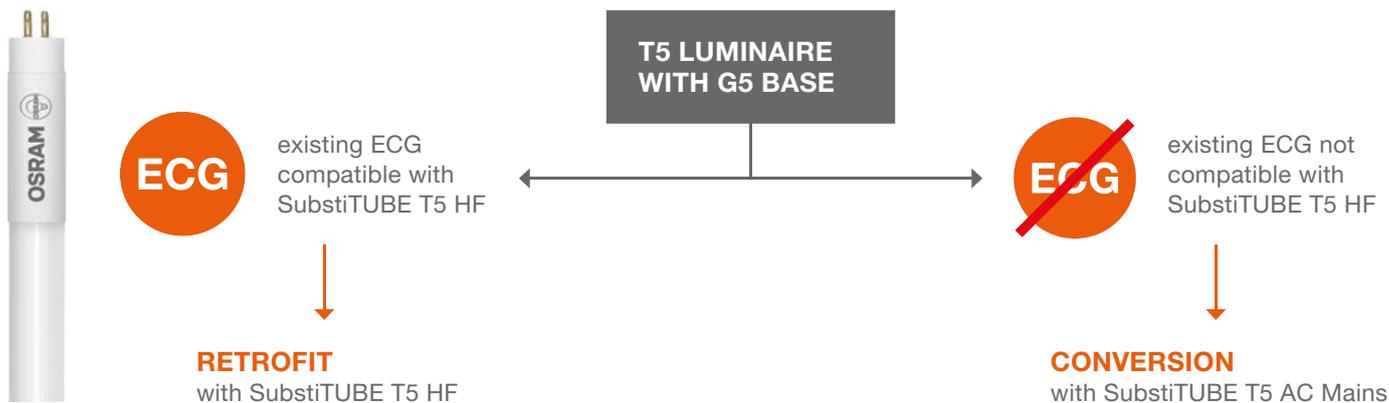
Result: ✓ matching SubstiTUBE available:
retrofit

Result: ✗ no matching SubstiTUBE: rewiring
or new ECG required

B) CCG ARE ALWAYS COMPATIBLE WITH THE SUBSTITUBE EM AND UNIVERSAL PRODUCTS: RETROFIT

05 DEFINE THE DESIRED OUTPUT AND OTHER PRODUCT FEATURES AND CHOOSE THE RIGHT PRODUCT

HELP TO DECIDE HOW TO CHOOSE THE RIGHT LED TUBE



RETROFIT OR CONVERSION: WHICH PROCESS IS THE RIGHT ONE?

RETROFIT	
<p>ADVANTAGES</p> <ul style="list-style-type: none"> - Easiest installation - Lowest installation costs 	<p>DISADVANTAGES</p> <ul style="list-style-type: none"> - Compatibility check required for ECG¹

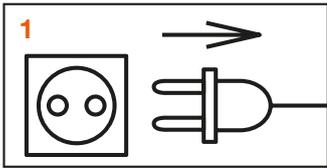
CONVERSION	
<p>ADVANTAGES</p> <ul style="list-style-type: none"> - No compatibility issues - Maximum efficiency and no driver maintenance 	<p>DISADVANTAGES</p> <ul style="list-style-type: none"> - Higher installation costs - More complex installation and additional material required - New CE label needed for luminaire

¹Check of the ECG compatibility list before installation required: www.ledvance.com/ecg-compatibility

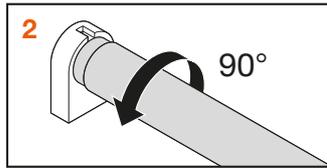
INSTALLATION INSTRUCTIONS

REPLACEMENT MADE EASY

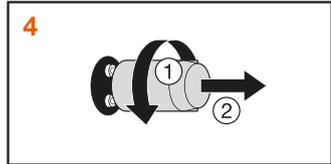
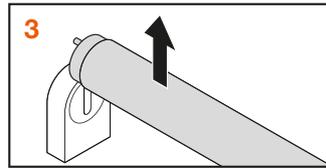
RETROFIT IN T8 LUMINAIRE WITH CCG



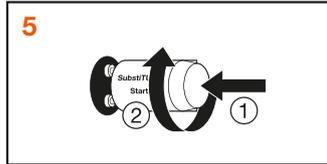
1 Disconnect luminaire from mains



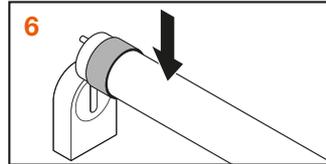
2 Unscrew and remove conventional T8 lamp



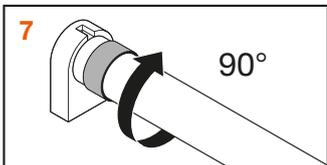
4 Remove conventional starter



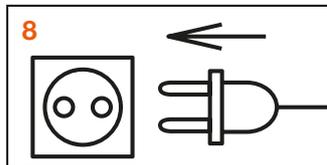
5 Insert SubstiTUBE LED starter



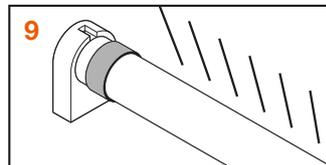
6 Insert SubstiTUBE T8 EM/UN



7 Screw in SubstiTUBE T8 EM/UN



8 Turn on power

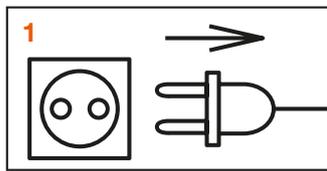


9 That's it!

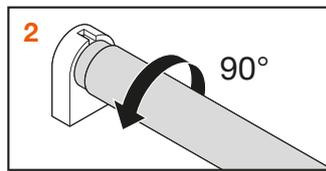
RETROFIT IN T8 OR T5 LUMINAIRE WITH ECG



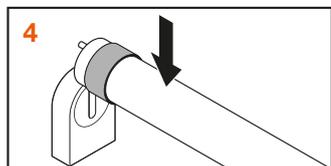
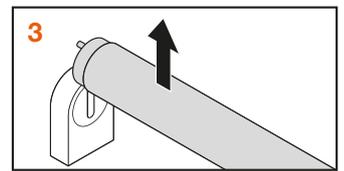
Check ECG compatibility at ledvance.com/compatibility



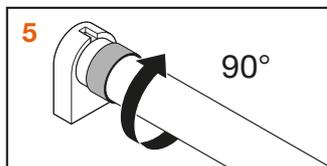
1 Disconnect luminaire from the mains



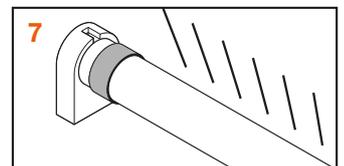
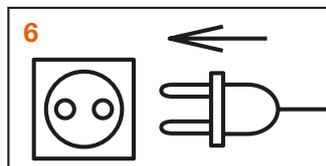
2 Unscrew and remove conventional T8 or T5 lamp



4 Insert and screw in SubstiTUBE T8 HF/UN or T5 HF

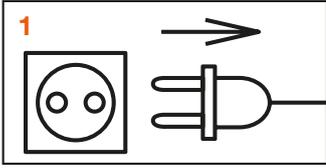


5 Turn on power

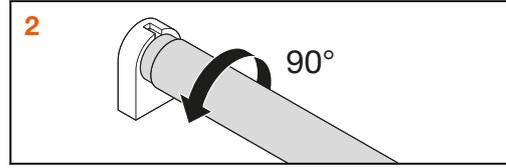


6 That's it!

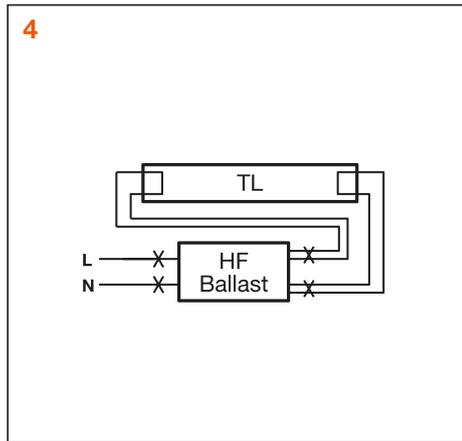
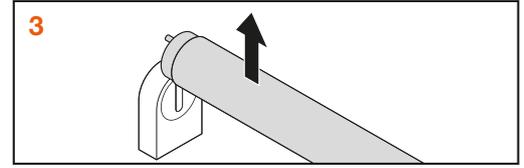
CONVERSION OF T8 OR T5 LUMINAIRES



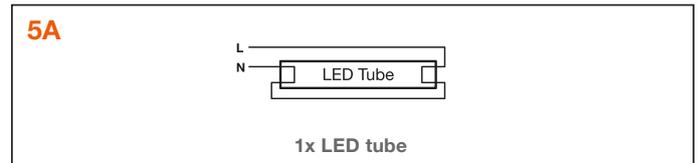
Disconnect luminaire from mains



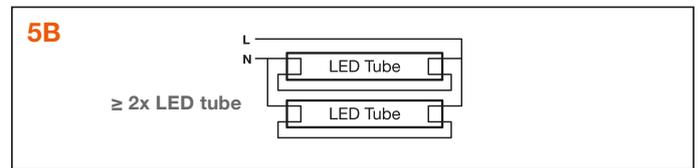
Unscrew and remove conventional T8 or T5 lamp



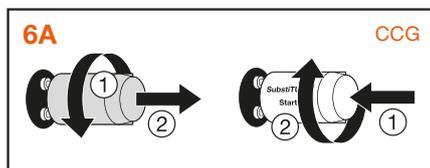
Remove ECG/CCG from the luminaire
For CCG: also remove capacitors for reactive power compensation



Rewiring following wiring diagram for single-lamp luminaires



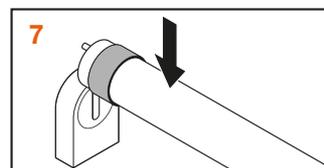
Rewiring following wiring diagram for multi-lamp luminaires



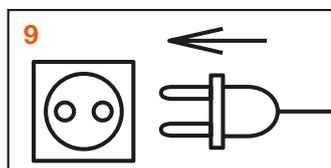
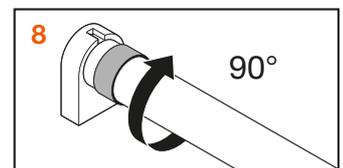
Replace conventional starter with SubstiTUBE LED starter



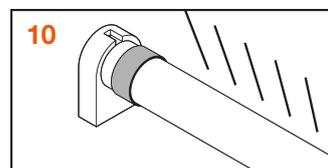
Insert microfuse (250 V, T2A)



Insert and screw in SubstiTUBE T8 or T5



Turn on power



That's it!

IMPORTANT!

- A new CE label has to be placed on the luminaire after the modification. For this purpose, testing following legal and safety requirements and technical standards such as DIN VDE 0701-0702 and DIN EN60598-1 is recommended.
- Affix a new type plate to the luminaire and obscure the old type plate.

NOTES

- The rewiring may only be carried out by qualified electricians.
- After rewiring, fluorescent lamps may no longer be used in the luminaire, only LED tubes. This should be mentioned on the luminaire's new type plate, for example. The SubstiTUBE LED tubes are already provided with an appropriate sticker.

ALL MATERIALS IN ONE PACKAGE THE LEDVANCE CONVERSION KIT

The LEDVANCE conversion kit includes all the materials you need for converting T8 or T5 lamps – including step-by-step instructions. Rewiring is quick and easy with this kit.

It comes in two versions for single- or double-lamp luminaires and includes:

- WAGO connectors
- Adhesive sockets for cable ties
- Cable ties
- New blank type plate
- Microfuse (250 V T2A) with wiring
- Step-by-step instructions



For single-lamp luminaires



For double-lamp luminaires

NOTE:

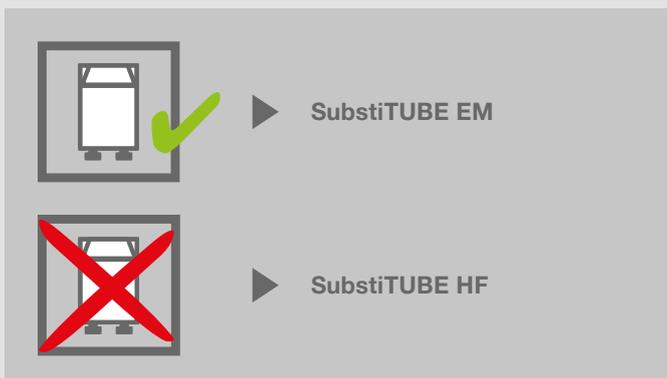
The conversion kit is available in combination with selected LED tubes. For ordering information, see page 40.

FIND THE RIGHT TECHNOLOGY EM OR HF

Are you wondering which technology you need for your luminaire with T8 fluorescent lamp – an EM lamp or an HF lamp? Our insider tip reveals two easy ways to find out.

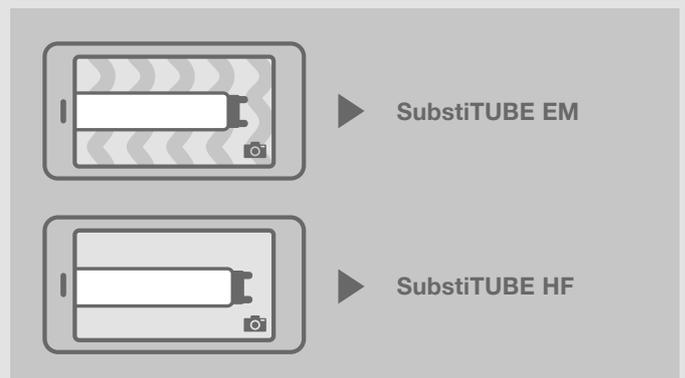
STARTER TEST

Check whether the luminaire you want to fit the new lamp in has a starter. If it does, you need a **SubstiTUBE T8 EM** for operation on a CCG. If not, use an ECG-compatible version, either **SubstiTUBE HF** or **UNIVERSAL**.



CAMERA TEST

If the luminaire still has a working T8 lamp, take a look at it through a digital camera (such as the one on your smartphone or tablet). If the light flickers, you need a **SubstiTUBE T8 EM** for operation on a CCG. Otherwise use an ECG-compatible version, either **SubstiTUBE HF** or **UNIVERSAL**.



TOTAL COST OF OWNERSHIP IT ALL ADDS UP

Our TCO sample calculation using a parking garage clearly shows that a switch to efficient, durable SubstiTUBE LED tubes is also worthwhile financially for your customers. Because the upgrade costs will be offset very quickly. And from that point on, it's savings, savings, savings.

OSRAM SubstiTUBE T8 EM ADVANCED UO 23,1W

GLOBAL PARAMETERS¹:

Period of operation:

60 months, 5 years, 43 680 operating hour

Operating times:

7 days per week, 52 weeks per year, 24 hours per day

OSRAM SubstiTUBE T8 EM Connected 24W

GLOBAL PARAMETERS¹:

Period of operation:

60 months, 5 years, 21 840 operating hours

Operating times:

7 days per week, 52 weeks per year, 12 hours per day

Note: reduced operating hours thanks to control by sensors based on demand

	OLD: Traditional T8 58W	NEW: OSRAM SubstiTUBE T8 EM Advanced UO 23,1W	Savings	NEW: OSRAM SubstiTUBE T8 EM Connected 24W	Savings
Number of light points:	100 Lamps	100 Lamps		100 Lamps	
Efficiency	90 lm/W	160 lm/W		154 lm/W	
System wattage (incl. CCG losses)	68 W	24.1 W		25 W	
Average lifetime	15 000 h	50 000 h		50 000 h	
Operating hours per year	8 736 h/year	8 736 h/year		4 368 h/year	
Energy consumption over period of operation	297 024 kWh	105 269 kWh	191 755 kWh	54 600 kWh	242 424 kWh
CO ₂ emissions (474 g/kWh)	140 789 kg	49 897 kg	90 892 kg	25 880 kg	114 909 kg

Energy consumption of project	6.8 kW	2.41 kW		2.5 kW	
Number of lamps/sensors needed in period of operation	300 Lamps	100 Lamps		100 Lamps/5 Sensores	
Lamp and labor costs over period of operation	3 900 €	2 500 €	1 400 €	5 055 €	-1 155 €
Electricity costs over period of operation	44 554 €	15 790 €	28 763 €	8 190 €	36 364 €
Total cost over period of operation	48 454 €	18 290 €	30 163 €	13 245 €	35 209 €

THE POTENTIAL SAVINGS ARE ENORMOUS:

OSRAM SubstiTUBE T8 EM ADVANCED UO 23,1W

Total savings
62 %

Total CO₂ savings
65 %

Payback time
2.5 months

Energy savings
191 755 kWh

Cost savings for electricity
65 %

OSRAM SubstiTUBE T8 EM Connected 24W

Total savings
73 %

Total CO₂ savings
82 %

Payback time
13.0 months

Energy savings
242 424 kWh

Cost savings for electricity
82 %

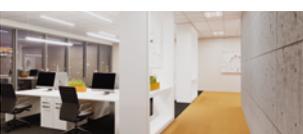
RESULTS:

- Easier and faster upgrade and payback with SubstiTUBE T8 EM ADVANCED
- Higher initial investment and installation costs, but light control based on demand and greater savings long-term when using SubstiTUBE T8 EM Connected

¹ Calculation parameters for traditional T8 58 W compared to OSRAM SubstiTUBE T8 EM ADVANCED UO 23.1W and OSRAM SubstiTUBE T8 EM Connected: Number of light points: 100; Replacement costs for one lamp: Traditional T8 58 W 3.00 €/piece, SubstiTUBE T8 EM Advanced UO 23,1 W 15.00 €/piece; OSRAM SubstiTUBE T8 EM Connected 24 W 33.60 €/piece; sensor costs: 129.-/piece; Costs for exchanging one lamp (incl. labour cost): 10.00 €/piece; Electricity costs: 0.15 €/kWh

* Illustrative pricing. Prices may vary.

SubstiTUBE APPLICATION MATRIX

OSRAM SubstiTUBE PORTFOLIO	T8							T5	T9C	
	PRO UO	PRO	ADVANCED UO	ADVANCED	VALUE	CONNECTED	FOOD	MOTION SENSOR	HF/AC MAINS	T9 C
 <p>INDUSTRY Typical operating time: 24 h/day 6 days/week Recommended illuminance: 200–500+ lux</p>	✓	✓	✓	✓					✓	
 <p>WAREHOUSE Typical operating time: 24 h/day 6 days/week Recommended illuminance: 200–300 lux</p>	✓	✓	✓	✓	✓	✓		✓ ¹	✓	
 <p>PARKING Typical operating time: 24 h/day 7 days/week Recommended illuminance: 75–300 lux</p>			✓	✓	✓	✓		✓ ¹	✓	
 <p>RETAIL Typical operating time: 15 h/day 7 days/week Recommended illuminance: 500+ lux</p>	✓	✓	✓	✓					✓	
 <p>FOOD PRESENTATION Typical operating time: 15 h/day 7 days/week Recommended illuminance: Special spectrum with high CRI-R9 level, shatter protection</p>							✓		✓	
 <p>OFFICE Typical operating time: 14 h/day 5 days/week Recommended lighting intensity: 500+ lux</p>	✓		✓						✓	✓
 <p>RESIDENTIAL AREAS Typical operating time: 2.7 h/day 7 days/week Recommended illuminance: 100+ lux</p>					✓			✓	✓	✓
 <p>OUTDOOR AREAS/PUBLIC TRANSPORTATION Typical operating time: 10 h/day 7 days/week Recommended illuminance: 5–500+ lux</p>	✓	✓	✓	✓					✓	✓
 <p>PUBLIC BUILDINGS/ SPORTS AND LEISURE Typical operating time: 15 h/day 7 days/week Recommended illuminance: 100–500+ lux</p>	✓	✓	✓	✓		✓			✓	✓

¹ < 10 light outlets

SETTING LIGHT TRENDS, FULFILLING REGULATORY REQUIREMENTS: ALWAYS REMAIN UP TO DATE WITH LEDVANCE PRODUCTS



- 01 OSRAM SubstiTUBE T8 EM**
Whether it's **PRO**, **ADVANCED** or **VALUE**, the core range of SubstiTUBE T8 EM LED tubes offers unprecedented performance as replacements for conventional T8 fluorescent lamps with G13 bases. All **SubstiTUBE T8 EMs** are **low-flicker according to EU 2019/2020 at SVM \leq 0.4** and feature shatter-proof, no-bend glass bodies as well as metal end caps. Other major benefits include extremely high efficiency of up to 175 lm/W, extremely high luminous flux of **up to 4 100 lm** and an extremely long life of **up to 75000 hours**. Thanks to energy savings of up to 70 %, the switch to **SubstiTUBE T8 EM** pays for itself very quickly.
- ▶ Ideal for industry, warehouses and offices

- 02 OSRAM SubstiTUBE T8 EM MOTION SENSOR**
Thanks to its integrated 5.8 GHz microwave sensor, the new **SubstiTUBE T8 EM MOTION SENSOR** with **low-flicker at SVM \leq 0.4 in line with EU 2019/2020 detects movements** within a radius of up to 5 meters even if it is installed in a closed luminaire. Its 2-step dimming – from 100 % to 20 % after 5 minutes, and shutdown after another 2 minutes – increases the potential for energy savings. And plug and play makes installation super easy.
- ▶ Ideal for small warehouses and homes

- 03 OSRAM SubstiTUBE T9**
The **OSRAM SubstiTUBE T9 C** with **low-flicker at SVM \leq 0.4 in line with EU 2019/2020** serves as a direct LED replacement for T9 fluorescent lamps with 22 or 32W output. With its **new rotatable base** it now fits into even more luminaires. The **SubstiTUBE T9 C** is CCG-compatible but can also be operated on mains voltage. What's more, it offers up to 45 % energy savings, a long lifetime and an excellent price/performance ratio.
- ▶ Ideal for public buildings and homes

SubstiTUBE PRO Ultra Output EM^{1,2}

High performance LED tubes for electromagnetic control gears (CCG), shatterproof



1



PRODUCT FEATURES

- LED replacement for classic T8 fluorescent lamps with G13 socket for use in CCG luminaires or on AC mains
- Low flicker according to EU 2019/2020 (SVM $\leq 0,4$ / PstLM ≤ 1)
- Lamp tube made of glass with spliter protection e.g. for food industry applications
- VDE certified according to IEC62776
- For especially uniform illumination

PRODUCT BENEFITS

- No bending thanks to glass tube
- Shatter protection thanks to special PET coating
- Support the implementation of the HACCP concepts from production through to presentation
- Very high resistance to switching loads
- High luminous flux for sophisticated lighting tasks

AREAS OF APPLICATION

- General illumination within ambient temperatures from -20...+50 °C
- Illumination of production areas
- Traffic zones and corridors
- Supermarkets and department stores
- Industry

Product name	GTIN (EAN)	w/w	W	lm	lm/W	K	°C	CRI	t _h	5	10	1		
SubstiTUBE T8 EM Pro Ultra Output 14.9 W/3000K 1200 mm	4058075612037	36	G13	1212	14.9	2340	157	3000	190	83	75 000	D	10	1
SubstiTUBE T8 EM Pro Ultra Output 14.9 W/4000K 1200 mm	4058075612051	36	G13	1212	14.9	2600	174	4000	190	83	75 000	C	10	1
SubstiTUBE T8 EM Pro Ultra Output 14.9 W/6500K 1200 mm	4058075612075	36	G13	1212	14.9	2600	174	6500	190	83	75 000	C	10	1
SubstiTUBE T8 EM Pro Ultra Output 23.4 W/3000K 1500 mm	4058075612099	58	G13	1513	23.4	3690	157	3000	190	83	75 000	D	10	1
SubstiTUBE T8 EM Pro Ultra Output 23.4 W/4000K 1500 mm	4058075612112	58	G13	1513	23.4	4100	175	4000	190	83	75 000	C	10	1
SubstiTUBE T8 EM Pro Ultra Output 23.4 W/6500K 1500 mm	4058075612136	58	G13	1513	23.4	4100	175	6500	190	83	75 000	C	10	1

SAFETY ADVICE

Not suitable for operation with electronic control gear.

Operation in outdoor applications in suitable damp-proof luminaires possible according to data sheet and installation instruction.

¹ Protection class: IP20 | ² Non-dimmable | ³ You will find further information and the exact guarantee terms and conditions at www.ledvance.com/guarantee | ⁴ L70/B50 | ⁵ Energy efficiency class (EEC) on a scale of A (highest efficiency) to G (lowest efficiency)

SubstiTUBE PRO EM^{1,2}

High performance LED tubes for electromagnetic control gears (CCG), shatterproof



1



3

PRODUCT FEATURES

- LED replacement for classic T8 fluorescent lamps with G13 socket for use in CCG luminaires or on AC mains
- Low flicker according to EU 2019/2020 (SVM $\leq 0,4$ / PstLM ≤ 1)
- Lamp tube made of glass with spliter protection e.g. for food industry applications
- VDE certified according to IEC62776
- Single and tandem operation on conventional control gear (0.6 m version)

PRODUCT BENEFITS

- No bending thanks to glass tube
- Shatter protection thanks to special PET coating
- Support the implementation of the HACCP concepts from production through to presentation
- Very high resistance to switching loads
- High luminous flux for sophisticated lighting tasks

AREAS OF APPLICATION

- General illumination within ambient temperatures from $-20...+50$ °C
- Illumination of production areas
- Traffic zones and corridors
- Supermarkets and department stores
- Industry

Product name	GTIN (EAN)	W	W	I (mm)	W	lm	lm/W	K	°C	CRI	t _h ⁴	5	6	7
SubstiTUBE T8 EM Pro 5.4 W/3000K 438 mm	4058075614475	15	G13	450	5.4	810	150	3000	190	83	75000	D	10	1
SubstiTUBE T8 EM Pro 5.4 W/4000K 438 mm	4058075614499	15	G13	450	5.4	900	166	4000	190	83	75000	C	10	1
SubstiTUBE T8 EM Pro 6.7 W/4000K 600 mm	4058075612150	18	G13	603	6.7	1100	164	4000	190	83	75000	C	10	1
SubstiTUBE T8 EM Pro 6.7 W/6500K 600 mm	4058075612174	18	G13	603	6.7	1100	164	6500	190	83	75000	C	10	1
SubstiTUBE T8 EM Pro 10.3 W/4000K 900 mm	4058075612198	30	G13	908	10.3	1700	165	4000	190	83	75000	C	10	1
SubstiTUBE T8 EM Pro 10.3 W/6500K 900 mm	4058075612211	30	G13	908	10.3	1700	165	6500	190	83	75000	C	10	1
SubstiTUBE T8 EM Pro 12.1 W/4000K 1050 mm	4058075612235	38	G13	1060	12.1	2000	165	4000	190	83	75000	C	10	1
SubstiTUBE T8 EM Pro 12.1 W/6500K 1050 mm	4058075612259	38	G13	1060	12.1	2000	165	6500	190	83	75000	C	10	1
SubstiTUBE T8 EM Pro 12.7 W/4000K 1200 mm	4058075612273	36	G13	1212	12.7	2100	165	4000	190	83	75000	C	10	1
SubstiTUBE T8 EM Pro 12.7 W/6500K 1200 mm	4058075612297	36	G13	1212	12.7	2100	165	6500	190	83	75000	C	10	1
SubstiTUBE T8 EM Pro 18.8 W/4000K 1500 mm	4058075612310	58	G13	1513	18.8	3100	164	4000	190	83	75000	C	10	1
SubstiTUBE T8 EM Pro 18.8 W/6500K 1500 mm	4058075612334	58	G13	1513	18.8	3100	164	6500	190	83	75000	C	10	1

SAFETY ADVICE

Not suitable for operation with electronic control gear.

Operation in outdoor applications in suitable damp-proof luminaires possible according to data sheet and installation instruction.

¹ Protection class: IP20 | ² Non-dimmable | ³ You will find further information and the exact guarantee terms and conditions at www.ledvance.com/guarantee | ⁴ L70/B50 | ⁵ Energy efficiency class (EEC) on a scale of A (highest efficiency) to G (lowest efficiency)

SubstiTUBE Advanced Ultra Output^{1,2}

LED tubes for electromagnetic control gear (CCG)



1



PRODUCT FEATURES

- LED replacement for classic T8 fluorescent lamps with G13 socket for use in CCG luminaires or on AC mains
- Low flicker according to EU 2019/2020 (SVM $\leq 0,4$ / PstLM ≤ 1)
- Tube made of glass
- For especially uniform illumination
- Mercury-free and RoHS compliant

PRODUCT BENEFITS

- No bending thanks to glass tube
- Quick, simple and safe replacement without rewiring
- Energy savings of up to 60 % (compared to T8 fluorescent lamp on CCG)
- Very high resistance to switching loads
- High luminous flux for sophisticated lighting tasks

AREAS OF APPLICATION

- General illumination within ambient temperatures from $-20...+50$ °C
- Illumination of production areas
- Traffic zones and corridors
- Supermarkets and department stores

Product name	GTIN (EAN)	w/w	mm	$\frac{l}{\text{mm}}$	W	lm	$\frac{\text{lm}}{\text{W}}$	K	Δ	CRI	t _h ⁴	$\frac{E}{\text{h}}$ ⁵	RoHS	Light No.
SubstiTUBE T8 EM Advanced Ultra Output 15.6 W/3000K 1200 mm	4058075611917	36	G13	1212	15.6	2250	144	3000	190	83	50 000	D	10	1
SubstiTUBE T8 EM Advanced Ultra Output 15.6 W/4000K 1200 mm	4058075611931	36	G13	1212	15.6	2500	160	4000	190	83	50 000	C	10	1
SubstiTUBE T8 EM Advanced Ultra Output 15.6 W/6500K 1200 mm	4058075611955	36	G13	1212	15.6	2500	160	6500	190	83	50 000	C	10	1
SubstiTUBE T8 EM Advanced Ultra Output 23.1 W/3000K 1500 mm	4058075611979	58	G13	1513	23.1	3330	144	3000	190	83	50 000	D	10	1
SubstiTUBE T8 EM Advanced Ultra Output 23.1 W/4000K 1500 mm	4058075611993	58	G13	1513	23.1	3700	160	4000	190	83	50 000	C	10	1
SubstiTUBE T8 EM Advanced Ultra Output 23.1 W/6500K 1500 mm	4058075612013	58	G13	1513	23.1	3700	160	6500	190	83	50 000	C	10	1

SAFETY ADVICE

Not suitable for operation with electronic control gear.

Operation in outdoor applications in suitable damp-proof luminaires possible according to data sheet and installation instruction.

¹ Protection class: IP20 | ² Non-dimmable | ³ You will find further information and the exact guarantee terms and conditions at www.ledvance.com/guarantee | ⁴ L70/B50 | ⁵ Energy efficiency class (EEC) on a scale of A (highest efficiency) to G (lowest efficiency)

SubstiTUBE Advanced^{1,2}

LED tubes for electromagnetic control gear (CCG)



1



PRODUCT FEATURES

- LED replacement for classic T8 fluorescent lamps with G13 socket for use in CCG luminaires or on AC mains
- Low flicker according to EU 2019/2020 (SVM $\leq 0,4$ / PstLM ≤ 1)
- Single and tandem operation on conventional control gear (0.6 m version)
- Tube made of glass
- Mercury-free and RoHS compliant

PRODUCT BENEFITS

- No bending thanks to glass tube
- Quick, simple and safe replacement without rewiring
- Energy savings of up to 64 % (compared to T8 fluorescent lamp on CCG)
- Instant-on light, therefore ideally suitable in combination with sensor technology
- Very high resistance to switching loads

AREAS OF APPLICATION

- General illumination within ambient temperatures from $-20...+50$ °C
- Illumination of production areas
- Traffic zones and corridors
- Supermarkets and department stores
- Industry

Product name	GTIN (EAN)	w/w	mm	$\frac{l}{\text{mm}}$	W	lm	$\frac{\text{lm}}{\text{W}}$	K	Δ	CRI	t _h ⁴	$\frac{l}{\text{m}}$ ⁵	RoHS	Light No.
SubstiTUBE T8 EM Advanced 7.3 W/4000K 600 mm	4058075611795	18	G13	603	7.3	1100	150	4000	190	83	50000	D	10	1
SubstiTUBE T8 EM Advanced 7.3 W/6500K 600 mm	4058075611818	18	G13	603	7.3	1100	150	6500	190	83	50000	D	10	1
SubstiTUBE T8 EM Advanced 14 W/4000K 1200 mm	4058075611832	36	G13	1212	14	2100	150	4000	190	83	50000	D	10	1
SubstiTUBE T8 EM Advanced 14 W/6500K 1200 mm	4058075611856	36	G13	1212	14	2100	150	6500	190	83	50000	D	10	1
SubstiTUBE T8 EM Advanced 20.6 W/4000K 1500 mm	4058075611870	58	G13	1513	20.6	3100	150	4000	190	83	50000	D	10	1
SubstiTUBE T8 EM Advanced 20.6 W/6500K 1500 mm	4058075611894	58	G13	1513	20.6	3100	150	6500	190	83	50000	D	10	1

SAFETY ADVICE

Not suitable for operation with electronic control gear.

Operation in outdoor applications in suitable damp-proof luminaires possible according to data sheet and installation instruction.

¹ Protection class: IP20 | ² Non-dimmable | ³ You will find further information and the exact guarantee terms and conditions at www.ledvance.com/guarantee | ⁴ L70/B50 |

⁵ Energy efficiency class (EEC) on a scale of A (highest efficiency) to G (lowest efficiency)

SubstiTUBE Value^{1,2}

Economic LED tubes for electromagnetic control gears (CCG)



1



PRODUCT FEATURES

- LED replacement for classic T8 fluorescent lamps with G13 socket for use in CCG luminaires or on AC mains
- Low flicker according to EU 2019/2020 (SVM $\leq 0,4$ / PstLM ≤ 1)
- Tube made of glass
- Mercury-free and RoHS compliant
- Uniform illumination

PRODUCT BENEFITS

- No bending thanks to glass tube
- Energy savings of up to 68 % (compared to T8 fluorescent lamp on CCG)
- Quick, simple and safe replacement without rewiring
- Instant-on light, therefore ideally suitable in combination with sensor technology
- Very high resistance to switching loads

AREAS OF APPLICATION

- General illumination within ambient temperatures from -20...+45 °C
- Corridors, stairways, parking garages
- Industry
- Warehouses
- Cooling and storage rooms

Product name	GTIN (EAN)	w	W	l (mm)	Im	lm/W	K	°C	CRI	t _h	°	°	°	°
SubstiTUBE T8 EM Value 6.6 W/3000K 600 mm	4058075611610	18	G13	603	6.6	720	109	3000	190	≥80	30000	F	10	1
SubstiTUBE T8 EM Value 6.6 W/4000K 600 mm	4058075611634	18	G13	603	6.6	800	121	4000	190	≥80	30000	E	10	1
SubstiTUBE T8 EM Value 6.6 W/6500K 600 mm	4058075611658	18	G13	603	6.6	800	121	6500	190	≥80	30000	E	10	1
SubstiTUBE T8 EM Value 15 W/3000K 1200 mm	4058075611672	36	G13	1212	15	1620	108	3000	190	≥80	30000	F	10	1
SubstiTUBE T8 EM Value 15 W/4000K 1200 mm	4058075611696	36	G13	1212	15	1800	120	4000	190	≥80	30000	E	10	1
SubstiTUBE T8 EM Value 15 W/6500K 1200 mm	4058075611719	36	G13	1212	15	1800	120	6500	190	≥80	30000	E	10	1
SubstiTUBE T8 EM Value 18.3 W/3000K 1500 mm	4058075611733	58	G13	1513	18.3	1980	108	3000	190	≥80	30000	F	10	1
SubstiTUBE T8 EM Value 18.3 W/4000K 1500 mm	4058075611757	58	G13	1513	18.3	2200	120	4000	190	≥80	30000	E	10	1
SubstiTUBE T8 EM Value 18.3 W/6500K 1500 mm	4058075611771	58	G13	1513	18.3	2200	120	6500	190	≥80	30000	E	10	1

SAFETY ADVICE

Not suitable for operation with electronic control gear.

Operation in outdoor applications in suitable damp-proof luminaires possible according to data sheet and installation instruction.

¹ Protection class: IP20 | ² Non-dimmable | ³ You will find further information and the exact guarantee terms and conditions at www.ledvance.com/guarantee | ⁴ L70/B50 | ⁵ Energy efficiency class (EEC) on a scale of A (highest efficiency) to G (lowest efficiency)

SubstiTUBE MOTION SENSOR^{1,2}

LED tubes with integrated microwave sensor for electromagnetic control gears (CCG), shatterproof



1



3

PRODUCT FEATURES

- LED replacement for classic T8 fluorescent lamps with G13 socket for use in CCG luminaires or on AC mains
- Integrated microwave sensor with motion detection
- Automatic dimming to 20 % light output after 5 minutes without motion detection
- Automatic light switch off 7 minutes after the last motion detection
- Microwave sensor with 5,8 GHz

PRODUCT BENEFITS

- Suitable for closed luminaires thanks to microwave technology
- No bending thanks to glass tube
- Shatter protection thanks to special PET coating
- Support the implementation of the HACCP concepts from production through to presentation
- Very high resistance to switching loads

AREAS OF APPLICATION

- General illumination within ambient temperatures from -20...+50 °C
- Corridors, stairways, parking garages
- Warehouses
- Walkways and corridors
- Storage rooms

Product name	GTIN (EAN)	w/w	W	Im	lm/w	K	°C	CRI	t _h	°	5	8	1	
SubstiTUBE T8 EM Motion Sensor 6.8 W/4000K 600 mm	4058075594302	18	G13	604	6.8	1100	161	4000	190	83	50 000	C	8	1
SubstiTUBE T8 EM Motion Sensor 13.1 W/4000K 1200 mm	4058075594326	36	G13	1212	13.1	2100	160	4000	190	83	50 000	C	8	1
SubstiTUBE T8 EM Motion Sensor 19.3 W/4000K 1500 mm	4058075594340	58	G13	1513	19.3	3100	160	4000	190	83	50 000	C	8	1

SAFETY ADVICE

Not suitable for operation with electronic control gear.

Operation in outdoor applications in suitable damp-proof luminaires possible according to data sheet and installation instruction.

Recommended maximum mounting height: 5 m

¹ Protection class: IP20 | ² Non-dimmable | ³ You will find further information and the exact guarantee terms and conditions at www.ledvance.com/guarantee | ⁴ L70/B50 | ⁵ Energy efficiency class (EEC) on a scale of A (highest efficiency) to G (lowest efficiency)

SubstiTUBE FOOD 1,2

LED tubes for electromagnetic control gears (CCG), shatterproof, for food presentation



1



3

PRODUCT FEATURES

- LED replacement for classic T8 fluorescent lamps with G13 socket for use in CCG luminaires or on AC mains
- Lamp tube made of glass with spliter protection e.g. for food industry applications
- Specially tailored spectral distribution (comparable to T8 FL NATURA 76)
- VDE certified according to IEC62776
- Type of protection: IP20

PRODUCT BENEFITS

- Food looks fresh and appetizing without unduly “beautifying” it
- No bending thanks to glass technology
- Quick, simple and safe replacement of fluorescent lamps without rewiring the CCG
- Energy savings of up to 60 % (compared to T8 fluorescent lamp on CCG)
- Shatter protection thanks to special PET coating

AREAS OF APPLICATION

- General illumination within ambient temperatures from -20...+50 °C
- Supermarkets and department stores
- Bakeries, meat processors, butchers
- Shops
- Especially suitable for the food sector

Product name	GTIN (EAN)	w/w	W	lm	lm/w	K	°C	CRI	t _h	5	10	1		
SubstiTUBE T8 EM Food 7.9 W/3300K 900 mm EM	4058075292475	30	G13	908	7.9	750	94	3300	190	≥80	50 000	-	10	1
SubstiTUBE T8 EM Food 11.6 W/3300K 1200 mm EM	4058075292499	36	G13	1212	11.6	1100	94	3300	190	≥80	50 000	-	10	1
SubstiTUBE T8 EM Food 17.9 W/3300K 1500 mm EM	4058075292512	58	G13	1513	17.9	1700	94	3300	190	≥80	50 000	-	10	1

SAFETY ADVICE

Not suitable for operation with electronic control gear.

Operation in outdoor applications in suitable damp-proof luminaires possible according to data sheet and installation instruction.

¹ Protection class: IP20 | ² Non-dimmable | ³ You will find further information and the exact guarantee terms and conditions at www.ledvance.com/guarantee | ⁴ L70/B50 | ⁵ Energy efficiency class (EEC) on a scale of A (highest efficiency) to G (lowest efficiency)

SubstiTUBE Start

Starter for SubstiTUBE EM (CCG)



1

PRODUCT FEATURES

- Substitute starter for the replacement of a fluorescent lamp with a LED tube
- Suitable for operation with low loss or conventional control gear or line voltage
- Integrated electrical fuse

AREAS OF APPLICATION

- Not suitable for operation with electronic control gears

Product name

GTIN (EAN)



SUBSTITUBE LED T8 STARTER 10X2 OSRAM

4058075013674

20

1

SubstiTUBE Connected Advanced Ultra Output 1,2

LED tubes for electromagnetic control gears



1



3

PRODUCT FEATURES

- Network protocol: ZigBee 3.0 (2.4 GHz mesh network)
- Connected tube can be only operated with Connected sensor
- Dimmable only with LEDVANCE Connected Sensor

PRODUCT BENEFITS

- No bending thanks to glass technology
- Shatter protection thanks to special PET coating
- Short payback period thanks to low energy consumption and maintenance costs

AREAS OF APPLICATION

- General illumination within ambient temperatures from -20...+50 °C
- Parking lots, warehouses, production areas, stairways
- Industry
- Offices

Product name	GTIN (EAN)	WxW	W	l (mm)	W	lm	lm/W	K	°C	CRI	t _h ⁴	5	6	7
SubstiTUBE T8 EM CON Advanced Ultra Ouput 7.5 W/4000K 600 mm	4058075187337	18	G13	603	7.5	1100	146	4000	160	83	50 000	D	10	1
SubstiTUBE T8 EM CON Advanced Ultra Ouput 7.5 W/6500K 600 mm	4058075187351	18	G13	603	7.5	1100	146	6500	160	83	50 000	D	10	1
SubstiTUBE T8 EM CON Advanced Ultra Ouput 16 W/4000K 1200 mm	4058075187375	36	G13	1213	16	2400	150	4000	160	83	50 000	D	10	1
SubstiTUBE T8 EM CON Advanced Ultra Ouput 16 W/6500K 1200 mm	4058075187399	36	G13	1213	16	2400	150	6500	160	83	50 000	D	10	1
SubstiTUBE T8 EM CON Advanced Ultra Ouput 24 W/4000K 1500 mm	4058075187634	58	G13	1513	24	3600	150	4000	160	83	50 000	D	10	1
SubstiTUBE T8 EM CON Advanced Ultra Ouput 24 W/6500K 1500 mm	4058075187658	58	G13	1513	24	3600	150	6500	160	83	50 000	D	10	1

SAFETY ADVICE

Operation in outdoor applications in suitable damp-proof luminaires possible according to data sheet and installation instruction.

¹ Protection class: IP20 | ² Non-dimmable | ³ You will find further information and the exact guarantee terms and conditions at www.ledvance.com/guarantee | ⁴ L70/B50 | ⁵ Energy efficiency class (EEC) on a scale of A (highest efficiency) to G (lowest efficiency)

SubstiTUBE Connected Sensor Low Bay

Stand-alone sensors



1



PRODUCT FEATURES

- Wireless smart PIR motion sensor
- Mounting height up to 4 m
- Two step dimming: 20 % and 100 % light output
- Network protocol: ZigBee 3.0 (2.4 GHz mesh network)
- Connected tube can be only operated with Connected sensor

PRODUCT BENEFITS

- Multiple sensors can be networked
- Control of compatible products without Internet connection or smart devices
- Easy to install and use

AREAS OF APPLICATION

- For indoor use only (IP54)
- Passive infra red sensor for ambient temperatures between -20 and +50 °C
- Parking lots, warehouses, production areas, stairways
- Industry
- Offices

Product name	GTIN (EAN)	INFRARED	L × W × H [mm]	IP	V _{DC}	kHz ECG	Icons	Light No.
Connected Sensor ST8 LB	4058075232969	Passive infrared (PIR)	126.0 x 65	IP54	220...240	50	27	1

¹ You will find further information and the exact guarantee terms and conditions at www.ledvance.com/guarantee

SubstiTUBE Connected Sensor High Bay

Stand-alone sensors



1



PRODUCT FEATURES

- Wireless smart PIR motion sensor
- Mounting height: 4...14 m
- Two step dimming: 20 % and 100 % light output
- Network protocol: ZigBee 3.0 (2.4 GHz mesh network)
- Connected tube can be only operated with Connected sensor

PRODUCT BENEFITS

- Multiple sensors can be networked
- Control of compatible products without Internet connection or smart devices
- Easy to install and use

AREAS OF APPLICATION

- For indoor use only (IP54)
- Parking lots, warehouses, production areas, stairways
- Passive infra red sensor for ambient temperatures between -20 and +50 °C
- Industry

Product name	GTIN (EAN)	INFRARED	L × W × H [mm]	IP	V _{DC}	kHz ECG	Light No.	Light No.
Connected Sensor ST8 HB	4058075232983	Passive infrared (PIR)	126.0 x 65	IP54	220...240	50	27	1

¹ You will find further information and the exact guarantee terms and conditions at www.ledvance.com/guarantee

SubstiTUBE Connected Sensor Remote

Connected Sensor Remote for LEDVANCE Connected Sensor HB and LB



1



PRODUCT FEATURES

- Compatible with LEDVANCE Connected Sensor HB and LB (Gen 2)
- Battery included (Lithium, 3 V)

PRODUCT BENEFITS

- LEDVANCE Connected sensor remote control for easy installation
- 3 years guarantee

Product name	GTIN (EAN)	L x W x H [mm]		 No.
CONNECTED SENSOR REMOTE 10X1 LEDV	4058075374034	58.0x8.0x8	10	1

¹ You will find further information and the exact guarantee terms and conditions at www.ledvance.com/guarantee

SubstiTUBE PRO UO UN^{1,2}

LED tubes for electronic control gears (ECG), electromagnetic control gears (CCG) and mains, shatterproof



Compatibility list also online:
ledvance.com/compatibility



1



PRODUCT FEATURES

- T8 LED tube made of glass with G13 base
- Compatible with conventional and many common electronic control gears (see also compatibility list) and line voltage
- Low flicker according to EU 2019/2020
- Lamp tube made of glass with spliter protection e.g. for food industry applications
- Mercury-free and RoHS compliant

PRODUCT BENEFITS

- No bending thanks to glass technology
- Shatter protection thanks to special PET coating
- Also suitable for operation at low temperatures
- High luminous flux for sophisticated lighting tasks
- Easy installation

AREAS OF APPLICATION

- General illumination within ambient temperatures from -20...+45 °C
- Supermarkets and department stores
- Industry

Product name	GTIN (EAN)	w/w	W	Im	lm/W	K	°C	CRI	t _h ⁵	°	6	7	8	9
SubstiTUBE T8 UN Pro Ultra Output 7.5 W/3000K 600 mm ³	4058075546752	18	G13	603	7.5	1000	133	3000	190	83	60000	E	10	1
SubstiTUBE T8 UN Pro Ultra Output 7.5 W/4000K 600 mm ³	4058075546776	18	G13	603	7.5	1100	146	4000	190	83	60000	D	10	1
SubstiTUBE T8 UN Pro Ultra Output 7.5 W/6500K 600 mm ³	4058075546790	18	G13	603	7.5	1100	146	6500	190	83	60000	D	10	1
SubstiTUBE T8 UN Pro Ultra Output 15 W/4000K 1200 mm	4058075546813	36	G13	1213	15	2400	160	4000	190	83	60000	C	10	1
SubstiTUBE T8 UN Pro Ultra Output 15 W/6500K 1200 mm	4058075546837	36	G13	1213	15	2400	160	6500	190	83	60000	C	10	1
SubstiTUBE T8 UN Pro Ultra Output 23 W/4000K 1500 mm	4058075546851	58	G13	1513	23	3700	160	4000	190	83	60000	C	10	1
SubstiTUBE T8 UN Pro Ultra Output 23 W/6500K 1500 mm	4058075546875	58	G13	1513	23	3700	160	6500	190	83	60000	C	10	1

SAFETY ADVICE

Operation in outdoor applications in suitable damp-proof luminaires possible according to data sheet and installation instruction. The Tc point is marked on the base of the lamp.

¹ Protection class: IP20 | ² Non-dimmable | ³ ST8 UN is not released for tandem circuit in CCG operation | ⁴ You will find further information and the exact guarantee terms and conditions at www.ledvance.com/guarantee | ⁵ L70/B50 | ⁶ Energy efficiency class (EEC) on a scale of A (highest efficiency) to G (lowest efficiency)

SubstiTUBE Value UN^{1,2}

LED tubes for electronic control gears (ECG), electromagnetic control gears (CCG) and mains



Compatibility list also online:
ledvance.com/compatibility



1



PRODUCT FEATURES

- LED tube made of glass
- Compatible with conventional and many common electronic control gears (see also compatibility list) and line voltage
- T8 LED tube made of glass with G13 base
- Low flicker according to EU 2019/2020
- Uniform illumination
- Lifetime: up to 30,000 h
- Mercury-free and RoHS compliant

PRODUCT BENEFITS

- No bending thanks to glass technology
- Also suitable for operation at low temperatures
- Easy installation

AREAS OF APPLICATION

- General illumination within ambient temperatures from -20...+45 °C
- Corridors, stairways, parking garages
- Warehouses

Product name	GTIN (EAN)	w/w	mm	I (mm)	W	lm	lm/w	K	°C	CRI	t _h ⁴	EEC ⁵	RoHS	Light No.
SubstiTUBE T8 UN Value 18 W/3000K 1200 mm	4058075546899	36	G13	1213	18	1850	103	3000	190	83	30000	F	10	1
SubstiTUBE T8 UN Value 18 W/4000K 1200 mm	4058075546912	36	G13	1213	18	2000	111	4000	190	83	30000	E	10	1
SubstiTUBE T8 UN Value 18 W/6500K 1200 mm	4058075546936	36	G13	1213	18	2000	111	6500	190	83	30000	E	10	1
SubstiTUBE T8 UN Value 24 W/3000K 1500 mm	4058075546950	58	G13	1513	24	2550	106	3000	190	83	30000	F	10	1
SubstiTUBE T8 UN Value 24 W/4000K 1500 mm	4058075546974	58	G13	1513	24	2800	116	4000	190	83	30000	E	10	1
SubstiTUBE T8 UN Value 24 W/6500K 1500 mm	4058075546998	58	G13	1513	24	2800	116	6500	190	83	30000	E	10	1

SAFETY ADVICE

Operation in outdoor applications in suitable damp-proof luminaires possible according to data sheet and installation instruction.
The Tc point is marked on the base of the lamp.

¹ Protection class: IP20 | ² Non-dimmable | ³ You will find further information and the exact guarantee terms and conditions at www.ledvance.com/guarantee | ⁴ L70/B50 | ⁵ Energy efficiency class (EEC) on a scale of A (highest efficiency) to G (lowest efficiency)

SubstiTUBE PRO UO HF^{1,2}

LED tubes for electronic high frequency control gears (ECG), shatterproof



Compatibility list also online:
ledvance.com/compatibility



1



PRODUCT FEATURES

- T8 LED tube made of glass with G13 base
- Compatible with many common electronic control gears (see also compatibility list)
- Low flicker according to EU 2019/2020
- Lamp tube made of glass with spliter protection e.g. for food industry applications
- Mercury-free and RoHS compliant

PRODUCT BENEFITS

- Quick, simple and safe replacement without rewiring
- Shatter protection thanks to special PET coating
- Also suitable for operation at low temperatures
- High luminous flux for sophisticated lighting tasks
- No bending thanks to glass technology

AREAS OF APPLICATION

- General illumination within ambient temperatures from -20...+45 °C
- Supermarkets and department stores
- Industry
- Offices, public buildings

Product name	GTIN (EAN)	w×w	mm	$\frac{l}{\text{mm}}$	W	lm	$\frac{\text{lm}}{\text{W}}$	K	°C	CRI	t[h] ⁴	$\frac{\text{lm}}{\text{W}}$ ⁵	Lightbulb No.	
SubstiTUBE T8 HF Pro Ultra Output 15 W/4000K 1200 mm	4058075545014	36	G13	1213	15	2400	160	4000	190	83	60000	D	10	1
SubstiTUBE T8 HF Pro Ultra Output 15 W/6500K 1200 mm	4058075545038	36	G13	1213	15	2400	160	6500	190	83	60000	D	10	1
SubstiTUBE T8 HF Pro Ultra Output 23 W/4000K 1500 mm	4058075545076	58	G13	1513	23	3700	160	4000	190	83	60000	D	10	1
SubstiTUBE T8 HF Pro Ultra Output 23 W/6500K 1500 mm	4058075545151	58	G13	1513	23	3700	160	6500	190	83	60000	D	10	1

SAFETY ADVICE

Operation in outdoor applications in suitable damp-proof luminaires possible according to data sheet and installation instruction.

Not suitable for operation with low-loss and conventional control gears and main voltage.

The Tc point is marked on the base of the lamp.

¹ Protection class: IP20 | ² Non-dimmable | ³ You will find further information and the exact guarantee terms and conditions at www.ledvance.com/guarantee | ⁴ L70/B50 | ⁵ Energy efficiency class (EEC) on a scale of A (highest efficiency) to G (lowest efficiency)

SubstiTUBE PRO HF^{1,2}

LED tubes for electronic high frequency control gears (ECG), shatterproof



Compatibility list also online:
ledvance.com/compatibility



1



PRODUCT FEATURES

- T8 LED tube made of glass with G13 base
- Compatible with many common electronic control gears (see also compatibility list)
- Low flicker according to EU 2019/2020
- Lamp tube made of glass with spliter protection e.g. for food industry applications
- Mercury-free and RoHS compliant

PRODUCT BENEFITS

- Quick, simple and safe replacement without rewiring
- Shatter protection thanks to special PET coating
- Also suitable for operation at low temperatures
- High luminous flux for sophisticated lighting tasks
- No bending thanks to glass technology

AREAS OF APPLICATION

- General illumination within ambient temperatures from -20...+45 °C
- Supermarkets and department stores
- Industry
- Offices, public buildings

Product name	GTIN (EAN)	w	W	l (mm)	W	lm	lm/W	K	°C	CRI	t _h ⁴	5	6	7
SubstiTUBE T8 HF Pro 7.5 W/3000K 600 mm	4058075545052	18	G13	603	7.5	1000	133	3000	190	83	60000	E	10	1
SubstiTUBE T8 HF Pro 7.5 W/4000K 600 mm	4058075545090	18	G13	603	7.5	1100	146	4000	190	83	60000	D	10	1
SubstiTUBE T8 HF Pro 7.5 W/6500K 600 mm	4058075545113	18	G13	603	7.5	1100	146	6500	190	83	60000	D	10	1
SubstiTUBE T8 HF Pro 14 W/3000K 1200 mm	4058075545137	36	G13	1213	14	1900	135	3000	190	83	60000	E	10	1
SubstiTUBE T8 HF Pro 14 W/4000K 1200 mm	4058075545175	36	G13	1213	14	2100	150	4000	190	83	60000	D	10	1
SubstiTUBE T8 HF Pro 14 W/6500K 1200 mm	4058075545205	36	G13	1213	14	2100	150	6500	190	83	60000	D	10	1
SubstiTUBE T8 HF Pro 20 W/3000K 1500 mm	4058075545229	58	G13	1513	20	2800	140	3000	190	83	60000	E	10	1
SubstiTUBE T8 HF Pro 20 W/4000K 1500 mm	4058075545243	58	G13	1513	20	3100	155	4000	190	83	60000	D	10	1
SubstiTUBE T8 HF Pro 20 W/6500K 1500 mm	4058075545267	58	G13	1513	20	3100	155	6500	190	83	60000	D	10	1

SAFETY ADVICE

Operation in outdoor applications in suitable damp-proof luminaires possible according to data sheet and installation instruction.

Not suitable for operation with low-loss and conventional control gears and main voltage.

The Tc point is marked on the base of the lamp.

¹ Protection class: IP20 | ² Non-dimmable | ³ You will find further information and the exact guarantee terms and conditions at www.ledvance.com/guarantee | ⁴ L70/B50 |

⁵ Energy efficiency class (EEC) on a scale of A (highest efficiency) to G (lowest efficiency)

SubstiTUBE Value HF^{1,2}

Economic LED tubes for electronic high frequency control gears (ECG)



Compatibility list also online:
ledvance.com/compatibility



1



PRODUCT FEATURES

- T8 LED tube made of glass with G13 base
- Compatible with many common electronic control gears (see also compatibility list)
- Low flicker according to EU 2019/2020
- Uniform illumination
- Lifetime: up to 30,000 h
- Mercury-free and RoHS compliant

PRODUCT BENEFITS

- Easy installation
- Also suitable for operation at low temperatures
- No bending thanks to glass technology

AREAS OF APPLICATION

- General illumination within ambient temperatures from -20...+45 °C
- Corridors, stairways, parking garages
- Warehouses

Product name	GTIN (EAN)	wxwx	mm	I (mm)	W	lm	lm/w	K	°C	CRI	t _h ⁴	°	5	6	7
SubstiTUBE T8 HF Value 8 W/4000K 600 mm	4058075545366	18	G13	603	8	800	100	4000	190	83	30000	F	10	1	
SubstiTUBE T8 HF Value 8 W/6500K 600 mm	4058075545380	18	G13	603	8	800	100	6500	190	83	30000	F	10	1	

SAFETY ADVICE

Operation in outdoor applications in suitable damp-proof luminaires possible according to data sheet and installation instruction.

Not suitable for operation with low-loss and conventional control gears and main voltage.

The Tc point is marked on the base of the lamp.

¹ Protection class: IP20 | ² Non-dimmable | ³ You will find further information and the exact guarantee terms and conditions at www.ledvance.com/guarantee | ⁴ L70/B50 | ⁵ Energy efficiency class (EEC) on a scale of A (highest efficiency) to G (lowest efficiency)

SubstiTUBE T5 HF^{1,2}

LED tubes for electronic high frequency control gears



Compatibility list also online:
ledvance.com/compatibility



1



PRODUCT FEATURES

- Retrofit replacement of existing T5 lamps on HF ballast installations
- Lamp tube made of glass with spliter protection e.g. for food industry applications
- High color consistency: ≤ 5 SDCM
- Lifetime: up to 50,000 h
- Low flicker according to EU 2019/2020

PRODUCT BENEFITS

- No bending thanks to glass technology
- Quick, simple and safe replacement without rewiring
- High luminous flux for sophisticated lighting tasks

AREAS OF APPLICATION

- Offices, public buildings
- Supermarkets and department stores
- Industry
- General illumination within ambient temperatures from $-20\dots+45$ °C

Product name	GTIN (EAN)	w/w	mm	l (mm)	W	lm	lm/W	K	°C	CRI	t _h ⁴	5	6	7
SubstiTUBE T5 HF HE14 7 W/3000K 549 mm	4058075543300	14	G5	549	7	900	128	3000	190	83	50 000	E	10	1
SubstiTUBE T5 HF HE14 7 W/4000K 549 mm	4058075543324	14	G5	549	7	1000	142	4000	190	83	50 000	D	10	1
SubstiTUBE T5 HF HE14 7 W/6500K 549 mm	4058075543348	14	G5	549	7	1000	142	6500	190	83	50 000	D	10	1
SubstiTUBE T5 HF HE21 10 W/3000K 849 mm	4058075543249	21	G5	849	10	1350	135	3000	190	83	50 000	E	10	1
SubstiTUBE T5 HF HE21 10 W/4000K 849 mm	4058075543263	21	G5	849	10	1500	150	4000	190	83	50 000	D	10	1
SubstiTUBE T5 HF HE21 10 W/6500K 849 mm	4058075543287	21	G5	849	10	1500	150	6500	190	83	50 000	D	10	1
SubstiTUBE T5 HF HE28 17 W/3000K 1149 mm	4058075543188	28	G5	1149	17	2150	126	3000	190	83	50 000	E	10	1
SubstiTUBE T5 HF HE28 17 W/4000K 1149 mm	4058075543201	28	G5	1149	17	2400	141	4000	190	83	50 000	E	10	1
SubstiTUBE T5 HF HE28 17 W/6500K 1149 mm	4058075543225	28	G5	1149	17	2400	141	6500	190	83	50 000	E	10	1
SubstiTUBE T5 HF HE35 18 W/3000K 1449 mm	4058075543126	35	G5	1449	18	2550	141	3000	190	83	50 000	E	10	1
SubstiTUBE T5 HF HE35 18 W/4000K 1449 mm	4058075543140	35	G5	1449	18	2800	155	4000	190	83	50 000	D	10	1
SubstiTUBE T5 HF HE35 18 W/6500K 1449 mm	4058075543164	35	G5	1449	18	2800	155	6500	190	83	50 000	D	10	1
SubstiTUBE T5 HF H049 26 W/3000K 1449 mm	4058075543065	49	G5	1449	26	3600	138	3000	190	83	50 000	E	10	1
SubstiTUBE T5 HF H049 26 W/4000K 1449 mm	4058075543089	49	G5	1449	26	4000	153	4000	190	83	50 000	D	10	1
SubstiTUBE T5 HF H049 26 W/6500K 1449 mm	4058075543102	49	G5	1449	26	4000	153	6500	190	83	50 000	D	10	1
SubstiTUBE T5 HF H054 26 W/3000K 1149 mm	4058075543003	54	G5	1149	26	3600	138	3000	190	83	50 000	E	10	1
SubstiTUBE T5 HF H054 26 W/4000K 1149 mm	4058075543027	54	G5	1149	26	4000	153	4000	190	83	50 000	D	10	1
SubstiTUBE T5 HF H054 26 W/6500K 1149 mm	4058075543041	54	G5	1149	26	4000	153	6500	190	83	50 000	D	10	1
SubstiTUBE T5 HF H080 37 W/3000K 1449 mm	4058075542945	80	G5	1449	37	5050	136	3000	190	83	50 000	E	10	1
SubstiTUBE T5 HF H080 37 W/4000K 1449 mm	4058075542969	80	G5	1449	37	5600	151	4000	190	83	50 000	D	10	1
SubstiTUBE T5 HF H080 37 W/6500K 1449 mm	4058075542983	80	G5	1449	37	5600	151	6500	190	83	50 000	D	10	1

SAFETY ADVICE

Operation in outdoor applications in suitable damp-proof luminaires possible according to data sheet and installation instruction.

¹ Protection class: IP20 | ² Non-dimmable | ³ You will find further information and the exact guarantee terms and conditions at www.ledvance.com/guarantee | ⁴ L70/B50 | ⁵ Energy efficiency class (EEC) on a scale of A (highest efficiency) to G (lowest efficiency)

SubstiTUBE T5 220-240V AC^{1,2}

LED tubes for operation on AC mains connection



1



PRODUCT FEATURES

- LED replacement for T5 fluorescent lamps with G5 base on AC mains
- Lamp tube made of glass with spliter protection e.g. for food industry applications
- High color consistency: ≤ 5 SDCM
- Lifetime: up to 50,000 h
- Low flicker according to EU 2019/2020

PRODUCT BENEFITS

- No bending thanks to glass technology
- Shatter protection thanks to special PET coating
- Quick, simple and safe replacement without rewiring
- High luminous flux for sophisticated lighting tasks

AREAS OF APPLICATION

- Offices, public buildings
- Supermarkets and department stores
- Industry
- General illumination within ambient temperatures from $-20\dots+45$ °C

Product name	GTIN (EAN)	weW	W	Im	lm/W	K	°C	CRI	t _h ⁴	5	6	7	8	
SubstiTUBE T5 AC HE14 8 W/3000K 549 mm	4058075530611	14	G5	549	8	1080	135	3000	190	83	50000	D	10	1
SubstiTUBE T5 AC HE14 8 W/4000K 549 mm	4058075543560	14	G5	549	8	1200	150	4000	190	83	50000	D	10	1
SubstiTUBE T5 AC HE14 8 W/6500K 549 mm	4058075543584	14	G5	549	8	1200	150	6500	190	83	50000	D	10	1
SubstiTUBE T5 AC HE28 16 W/3000K 1149 mm	4058075630581	28	G5	1149	16	2150	134	3000	190	83	50000	E	10	1
SubstiTUBE T5 AC HE28 16 W/4000K 1149 mm	4058075543522	28	G5	1149	16	2400	150	4000	190	83	50000	D	10	1
SubstiTUBE T5 AC HE28 16 W/6500K 1149 mm	4058075543546	28	G5	1149	16	2400	150	6500	190	83	50000	D	10	1
SubstiTUBE T5 AC HE35 18 W/3000K 1449 mm	4058075630567	35	G5	1449	18	2550	142	3000	190	83	50000	D	10	1
SubstiTUBE T5 AC HE35 18 W/4000K 1449 mm	4058075543485	35	G5	1449	18	2800	155	4000	190	83	50000	D	10	1
SubstiTUBE T5 AC HE35 18 W/6500K 1449 mm	4058075543508	35	G5	1449	18	2800	155	6500	190	83	50000	D	10	1
SubstiTUBE T5 AC HO49 26 W/3000K 1449 mm	4058075630543	49	G5	1449	26	3600	138	3000	190	83	50000	D	10	1
SubstiTUBE T5 AC HO49 26 W/4000K 1449 mm	4058075543447	49	G5	1449	26	4000	153	4000	190	83	50000	D	10	1
SubstiTUBE T5 AC HO49 26 W/6500K 1449 mm	4058075543461	49	G5	1449	26	4000	153	6500	190	83	50000	D	10	1
SubstiTUBE T5 AC HO54 26 W/3000K 1149 mm	4058075630529	54	G5	1149	26	3600	138	3000	190	83	50000	D	10	1
SubstiTUBE T5 AC HO54 26 W/4000K 1149 mm	4058075543409	54	G5	1149	26	4000	153	4000	190	83	50000	D	10	1
SubstiTUBE T5 AC HO54 26 W/6500K 1149 mm	4058075543423	54	G5	1149	26	4000	153	6500	190	83	50000	D	10	1
SubstiTUBE T5 AC HO80 37 W/3000K 1449 mm	4058075630505	80	G5	1449	37	5050	136	3000	190	83	50000	D	10	1
SubstiTUBE T5 AC HO80 37 W/4000K 1449 mm	4058075543362	80	G5	1449	37	5600	151	4000	190	83	50000	D	10	1
SubstiTUBE T5 AC HO80 37 W/6500K 1449 mm	4058075543386	80	G5	1449	37	5600	151	6500	190	83	50000	D	10	1

SAFETY ADVICE

Operation in outdoor applications in suitable damp-proof luminaires possible according to data sheet and installation instruction.
Not suitable for operation with electronic control gear.

¹ Protection class: IP20 | ² Non-dimmable | ³ You will find further information and the exact guarantee terms and conditions at www.ledvance.com/guarantee | ⁴ L70/B50 | ⁵ Energy efficiency class (EEC) on a scale of A (highest efficiency) to G (lowest efficiency)

SubstiTUBE T9 EM^{1,2}

Circular LED tube for electromagnetic control gear (CCG) and AC mains



1

2



PRODUCT FEATURES

- LED alternative to classic T9 fluorescent lamps in CCG luminaires
- Uniform illumination
- Lifetime: up to 30,000 h
- Mercury-free and RoHS compliant

PRODUCT BENEFITS

- Quick, simple and safe replacement without rewiring
- Energy savings of up to 50% (compared to T9 fluorescent lamp on CCG)
- Also suitable for operation at low temperatures
- Operation directly on 230 V AC mains possible

AREAS OF APPLICATION

- General illumination within ambient temperatures from -20...+45 °C
- Corridors, stairways, parking garages
- Domestic applications
- Decorative applications

Product name	GTIN (EAN)	w/w	mm	I (mm)	W	lm	lm/W	K	°	CRI	t _h ⁴	5	6	7
SubstiTUBE T9 C EM 22 12 W/4000K G10q	4058075604612	22	G10q	212	12	1320	110	4000	120	≥80	30 000	E	10	1
SubstiTUBE T9 C EM 22 12 W/6500K G10q	4058075604650	22	G10q	212	12	1320	110	6500	120	≥80	30 000	E	10	1
SubstiTUBE T9 C EM 32 20 W/4000K G10q	4058075604674	32	G10q	300	20	2200	110	4000	120	≥80	30 000	E	10	2
SubstiTUBE T9 C EM 32 20 W/6500K G10q	4058075604698	32	G10q	300	20	2200	110	6500	120	≥80	30 000	E	10	2

SAFETY ADVICE

Not suitable for operation with electronic control gear.

Operation in outdoor applications in suitable damp-proof luminaires possible according to data sheet and installation instruction.

¹ Protection class: IP20 | ² Non-dimmable | ³ You will find further information and the exact guarantee terms and conditions at www.ledvance.com/guarantee | ⁴ L70/B50 |

⁵ Energy efficiency class (EEC) on a scale of A (highest efficiency) to G (lowest efficiency)

SubstiTUBE AS A MULTIPACK LED TUBES WITH MATCHING CONVERSION KITS

A smart solution at an attractive price: you can get many OSRAM SubstiTUBE versions in a handy pack of 10 including matching conversion kits. This makes replacements even easier. If you can't find the SubstiTUBE you required, please contact us at: kundenservice@ledvance.com. We will find a solution.

Product name	EAN40		Product information SubstiTUBE on page
OSRAM SubstiTUBE LED TUBES + CONVERSION KIT FOR SINGLE-LAMP LUMINAIRES			
SubstiTUBE T8 EM Pro Ultra Output + conversion kit			
SubstiTUBE T8 EM PRO UO 1200 14.9W 840 KIT1	4058075692374	10	20
SubstiTUBE T8 EM PRO UO 1500 23.4W 840 KIT1	4058075692381	10	20
SubstiTUBE T8 EM Pro + conversion kit			
SubstiTUBE T8 EM PRO 1200 12.7W 840 KIT1	4058075692428	10	21
SubstiTUBE T8 EM PRO 1500 18.8W 840 KIT1	4058075692435	10	21
SubstiTUBE T8 EM Advanced Ultra Output + conversion kit			
SubstiTUBE T8 EM ADV UO 1200 15.6W 840 KIT1	4058075692503	10	22
SubstiTUBE T8 EM ADV UO 1500 23.1W 840 KIT1	4058075692466	10	22
SubstiTUBE T8 EM Advanced + conversion kit			
SubstiTUBE T8 EM ADV 1200 14W 840 KIT1	4058075692527	10	23
SubstiTUBE T8 EM ADV 1500 20.6W 840 KIT1	4058075692480	10	23
SubstiTUBE T5 AC HE + conversion kit			
SubstiTUBE T5 AC HE28 1149 16W 840 KIT1	4058075692749	10	38
SubstiTUBE T5 AC HE35 1449 18W 840 KIT1	4058075692398	10	38
SubstiTUBE T5 AC HO + conversion kit			
SubstiTUBE T5 AC HO49 1449 26W 840 KIT1	4058075692701	10	38
SubstiTUBE T5 AC HO54 1149 26W 840 KIT1	4058075692695	10	38
SubstiTUBE T5 AC HO80 1449 37W 840 KIT1	4058075692688	10	38
OSRAM SubstiTUBE LED TUBES + CONVERSION KIT FOR DOUBLE-LAMP LUMINAIRES			
SubstiTUBE T8 EM Pro Ultra Output + conversion kit			
SubstiTUBE T8 EM PRO UO 1200 14.9W 840 KIT2	4058075692404	10	20
SubstiTUBE T8 EM PRO UO 1500 23.4W 840 KIT2	4058075692411	10	20
SubstiTUBE T8 EM Pro + conversion kit			
SubstiTUBE T8 EM PRO 1200 12.7W 840 KIT2	4058075692442	10	21
SubstiTUBE T8 EM PRO 1500 18.8W 840 KIT2	4058075692459	10	21
SubstiTUBE T8 EM Advanced Ultra Output + conversion kit			
SubstiTUBE T8 EM ADV UO 1200 15.6W 840 KIT2	4058075692510	10	22
SubstiTUBE T8 EM ADV UO 1500 23.1W 840 KIT2	4058075692473	10	22
SubstiTUBE T8 EM Advanced + conversion kit			
SubstiTUBE T8 EM ADV 1200 14W 840 KIT2	4058075692534	10	23
SubstiTUBE T8 EM ADV 1500 20.6W 840 KIT2	4058075692497	10	23
SubstiTUBE T5 AC HE + conversion kit			
SubstiTUBE T5 AC HE28 1149 16W 840 KIT2	4058075692770	10	38
SubstiTUBE T5 AC HE35 1449 18W 840 KIT2	4058075692763	10	38
SubstiTUBE T5 AC HO + conversion kit			
SubstiTUBE T5 AC HO49 1449 26W 840 KIT2	4058075692756	10	38
SubstiTUBE T5 AC HO54 1149 26W 840 KIT2	4058075692732	10	38
SubstiTUBE T5 AC HO80 1449 37W 840 KIT2	4058075692725	10	38

ROBUST AND FUNCTIONAL DAMP PROOF HOUSING

They are the ideal addition to the SubstiTUBE T8 LED tubes, especially for use in harsh environments. The robust housing of the damp-proof luminaire not only protects against moisture and dust but also easily withstands a hefty shock or two. Installation is particularly easy thanks to prewiring and integrated accessories. Wow your customers with our dream team of SubstiTUBE T8 and damp-proof housing.

PRODUCT FEATURES

- Housing made of robust polycarbonate (PC), gray
- Suitable for **SubstiTUBE EM/UN** and **SubstiTUBE Connected**
- Luminaire housing, available for 1 or 2 **T8 LED lamps**
- Type of protection: IP65
- Impact resistance: IK08

PRODUCT BENEFITS

- Sustainable solution thanks to exchangeable lamps
- Prewired for easy installation of tubular AC LED lamps
- Robust housing
- Easy and quick installation
- 5 years guarantee

EQUIPMENT/ACCESSORIES

- All required accessories included



Product name	Segmentation	GTIN (EAN)				L x W x H [mm] Ø x H [mm]
DP HOUSING 600 1x Lamp IP65	■	4058075312395	105	IK08	600	651 x 64 x 75
DP HOUSING 600 2x Lamp IP65	■	4058075312418	105	IK08	850	651 x 103 x 75
DP HOUSING 1200 1x Lamp IP65	■	4058075312432	105	IK08	1000	1261 x 64 x 75
DP HOUSING 1200 2x Lamp IP65	■	4058075312456	105	IK08	1300	1261 x 103 x 75
DP HOUSING 1500 1x Lamp IP65	■	4058075312470	105	IK08	1300	1561 x 64 x 75
DP HOUSING 1500 2x Lamp IP65	■	4058075312494	105	IK08	1850	1561 x 103 x 75



A STRONG COMBINATION FOR LARGE INDOOR CAR PARKS:



OSRAM SUBSTITUBE T8 CONNECTED ADVANCED ULTRA OUTPUT LED tube, installed in a robust damp-proof housing (IP65), is connected wirelessly to LEDVANCE CONNECTED SENSOR ST8 LOW BAY via Zigbee. Two-stage switching (0% ⇆ 100% and 20% ⇆ 100%) increases efficiency even further.

¹ Refer to www.ledvance.com/guarantee for precise conditions

SHEDDING LIGHT AND SYMBOLS



Shatter protection



Color temperature in K



Low-flicker according to EU 2019/2020



Color rendering index



Type of protection



Average period of use/life in hours (B50/L70)



Wireless



Glass tube



Power in W for conventional technology



AC Mains



Power in W



Operation on conventional control gear



Output voltage in V



Operation on electronic control gear



Luminous flux in lm



Energy efficiency class



Luminous efficacy



Unit of Packaging



Base



Fig. no.



Length [mm]



Beam angle in °

GOOD LIGHT ALL ROUND

THE FULL LEDVANCE RANGE

LEDVANCE is leading the fight against bad light in every area. That's good news for you because when it comes to future-proof solutions relating to luminaires and lamps, HCL systems, electronic components, light management and smart residential products, you have a competent partner in LEDVANCE on your side for your complex lighting projects. You can always rely on LEDVANCE for excellent brand quality, professional service and a good price/performance ratio.



AESTHETICALLY FUNCTIONAL LUMINAIRES

The extensive luminaire portfolio covers virtually all professional and residential applications and delivers outstanding quality and functionality. The new BIOLUX HCL system is a winner of the VDE Quality Certificate, and the red dot 2020 Product Design and 2020 German Innovation Awards.

EACH LAMP A LIGHTING SOLUTION

The lamp portfolio includes a wide choice of shapes and base sizes as well as types with additional functions (e.g. sensors), all with outstanding efficiency and durability. Alongside UV-C and LED lamps, LEDVANCE will continue to offer conventional halogen, energy-saving, fluorescent and gas discharge lamps.

FLEXIBLE LED STRIP SYSTEM

The LED Strip System includes a large number of flexible LED strips, drivers and matching accessories. With a wide range of luminous fluxes and light colors, the system allows bespoke lighting solutions to be created for virtually any indoor or outdoor application. Easy to plan, easy to combine and easy to install – that's the principle here.

VIVARES: LIGHT MANAGEMENT, MORE COMFORTABLE THAN EVER

The future-proof IoT light management system (LMS) from LEDVANCE makes it easier and more flexible than ever to always produce optimal lighting conditions for defined requirements. The system is extremely reliable and compatible and offers all LMS components and matching LED luminaires from one source.

SMART LIGHTING FOR RESIDENTIAL APPLICATIONS

Our smart residential products offer a comprehensive combination of innovation, quality, reliability and user-friendliness. We provide a suitable solution for a variety of requirements that intelligent lighting has to meet.

MORE INFORMATION AND CLEVER TOOLS

For more information on LEDVANCE's extensive product portfolio and clever apps and tools that will help you in your day-to-day work go to www.ledvance.com

ABOUT LEDVANCE

With offices in more than 50 countries and business activities in more than 140 countries, LEDVANCE is one of the world's leading general lighting providers for professional users and end consumers. Having emerged from OSRAM's general lighting division, LEDVANCE offers a wide-ranging portfolio of LED luminaires for a broad spectrum of applications, intelligent lighting products for Smart Home and Smart Building solutions, one of the most comprehensive ranges of advanced LED lamps in the lighting industry, traditional light sources, an LED Strip System and light management systems.



LEDVANCE

LEDVANCE GmbH
Parkring 29–33
85748 Garching
Germany
LEDVANCE.COM

Partner:



LEDVANCE is licensee of product trademark OSRAM for lamps products in general lighting.

LEDVANCE.COM

