

## PRODUCT DATASHEET

# SubstiTUBE T8 EM Pro Ultra Output 23.4 W/4000 K 1500 mm

SubstiTUBE T8 EM PRO ULTRA OUTPUT | High performance LED tubes for electromagnetic control gears (CCG), shatterproof



### 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 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
- Quick, simple and safe replacement without rewiring
- Energy savings of up to 60 % (compared to T8 fluorescent lamp on CCG)
- Instant-on light, therefore ideally suitable in combination with sensor technology
- Also suitable for operation at low temperatures

### 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 ( $SVM \leq 0.4$  /  $PstLM \leq 1$ )
- Lamp tube made of glass with splinter protection e.g. for food industry applications
- VDE certified according to IEC62776
- For especially uniform illumination
- Lifetime up to 75,000 h
- Type of protection: IP20
- Mercury-free and RoHS compliant

## TECHNICAL DATA

### Electrical data

|                           |   |
|---------------------------|---|
| Nominal wattage           | 23.4 W                                    |
| Construction wattage      | 23.40 W                                   |
| Nominal voltage           | 220...240 V                               |
| Operating mode            | Conventional control gear (CCG), AC Mains |
| Nominal current           | 110 mA                                    |
| Type of current           | AC  |
| Operating frequency       | 50/60 Hz                                  |
| Mains frequency           | 50/60 Hz                                  |
| Total harmonic distortion | 20 %                                      |
| Power factor $\lambda$    | > 0.90                                    |

### Photometrical data

|   |                     |
|---|---------------------|
| Luminous flux                           | 4100 lm             |
| Luminous efficacy                       | 175 lm/W            |
| Lumen main.fact.at end of nom.life time | 0.70                |
| Light color (designation)               | Cool White          |
| Color temperature                       | 4000 K              |
| Color rendering index Ra                | 83                  |
| Light color                             | 840                 |
| Standard deviation of color matching    | ≤5 sdc <sub>m</sub> |
| Rated LLMF at 6,000 h                   | 0.80                |
| Flickering metric (Pst LM)              | 1                   |
| Stroboscope effect metric (SVM)         | 0.4                 |

### Light technical data

|                     |          |
|---------------------|----------|
| Beam angle          | 190 °    |
| Warm-up time (60 %) | · 0.50 s |
| Starting time       | < 0.5 s  |

### Dimensions & Weight

|                  |            |
|------------------|------------|
| Overall length   | 1513.00 mm |
| Diameter         | 26.70 mm   |
| Maximum diameter | 27 mm      |
| Product weight   | 267.00 g   |

### Temperatures & operating conditions

|                                      |              |
|--------------------------------------|--------------|
| Ambient temperature range            | -25...+50 °C |
| Maximum temperature at tc test point | 70 °C        |

### Lifespan

|  |         |
|--|---------|
| Lifespan L70/B50 at 25 °C                    | 75000 h |
| Number of switching cycles                   | 200000  |
| Lumen maintenance at end of service lifetime | 0.70    |
| Rated lamp survival factor at 6,000 h        | ≥ 0.90  |

### Additional product data

|                             |        |
|-----------------------------|--------|
| Base (standard designation) | G13    |
| Mercury content             | 0.0 mg |

### Capabilities

|          |    |
|----------|----|
| Dimmable | No |
|----------|----|

### Certificates & Standards

|  |                 |
|--|-----------------|
| Energy efficiency class                      | C               |
| Energy consumption                           | 24.00 kWh/1000h |
| Type of protection                           | IP20            |
| Standards                                    | CE / VDE / EAC  |
| Photobiological safety group acc. to EN62778 | RG0             |

### Country-specific categorizations

|                 |                 |
|-----------------|-----------------|
| Order reference | RL-T8 58S HO23, |
|-----------------|-----------------|

### LOGISTICAL DATA

|                              |              |
|------------------------------|--------------|
| Temperature range at storage | -20...+80 °C |
|------------------------------|--------------|

### Energy labelling regulation data acc EU 2019/2015

|   |      |
|---|------|
| Lighting technology used                            | LED  |
| Non-directional or directional                      | NDLS |
| Mains or non-mains                                  | MLS  |
| Light source cap-type (or other electric interface) | G13  |
| Connected light source (CLS)                        | No   |
| Color-tuneable light source                         | No   |
| Envelope  | No   |

|  |              |
|--|--------------|
| High luminance light source                          | No           |
| Anti-glare shield                                    | No           |
| Correlated colour temperature type                   | SINGLE_VALUE |
| Claim of equivalent power                            | No           |
| Length   | 1513.00 mm   |
| Height   | 26.70 mm     |
| Width  | 26.70 mm     |
| Chromaticity coordinate x                            | 0.382        |
| Chromaticity coordinate y                            | 0.380        |
| R9 Colour rendering index                            | 0.00         |
| Beam angle correspondence                            | SPHERE_360   |
| Survival factor                                      | 0.90         |
| Displacement factor                                  | 0.90         |
| LED light source replaces a fluorescent light source | Yes          |
| EPREL ID   | 563390       |

## EQUIPMENT / ACCESSORIES

- Suitable for operation with low-loss and conventional control gears

## 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.
- Disconnect mains before installation.
- Not suitable for emergency lighting.

## LOGISTICAL DATA

| Product code  | Packaging unit (Pieces/Unit) | Dimensions (length x width x height) | Gross weight | Volume                |
|---------------|------------------------------|--------------------------------------|--------------|-----------------------|
| 4008597200489 | Sleeve<br>1                  | 1,605 mm x 29 mm x 29 mm             | 301.00 g     | 1.35 dm <sup>3</sup>  |
| 4008597600487 | Shipping box<br>10           | 1,652 mm x 210 mm x 115 mm           | 3852.00 g    | 39.90 dm <sup>3</sup> |

The mentioned product code describes the smallest quantity unit which can be ordered. One shipping unit can contain one or more single products. When placing an order, for the quantity please enter single or multiples of a shipping unit.

## References / Links

– For current information see [www.ledvance.com/substitute](http://www.ledvance.com/substitute)

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### Legal advice

– When used to replace a T8 fluorescent lamp the total energy efficiency and light distribution depends on the design of the lighting system.

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### DISCLAIMER

Subject to change without notice. Errors and omission excepted. Always make sure to use the most recent release.