

## PRODUCT DATASHEET

### SubstiTUBE T8 HF Pro 20 W/4000 K 1500 mm

SubstiTUBE T8 HF PRO | LED tubes for electronic high frequency control gears (ECG), shatterproof



#### Areas of application

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

#### 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

#### Product features

- T8 LED tube made of glass with G13 base
- Low flicker according to EU 2019/2020
- Lamp tube made of glass with splinter protection e.g. for food industry applications
- Mercury-free and RoHS compliant
- Type of protection: IP20
- Lifetime: up to 60,000 h
- Compatible with many common electronic control gears (see also compatibility list)



TECHNICAL DATA

Electrical data

|                           |             |
|---------------------------|-------------|
| Nominal wattage           | 20 W        |
| Construction wattage      | 20.00 W     |
| Nominal voltage           | 40...70 V   |
| Nominal current           | 110 mA      |
| Type of current           | AC          |
| Inrush current            | 22 A        |
| Operating frequency       | 20...75 kHz |
| Mains frequency           | 20...75 kHz |
| Total harmonic distortion | < 20 %      |
| Power factor $\lambda$    | > 0.90      |

Photometrical data

|                                         |               |
|-----------------------------------------|---------------|
| Luminous flux                           | 3100 lm       |
| Luminous efficacy                       | 155 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    | $\leq 5$ sdcm |
| Flickering metric (Pst LM)              | $\leq 1$      |
| Stroboscope effect metric (SVM)         | $\leq 0,4$    |

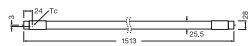


Light technical data

|                     |          |
|---------------------|----------|
| Beam angle          | 190 °    |
| Warm-up time (60 %) | < 2.00 s |

|                                    |          |
|------------------------------------|----------|
| Starting time                      | < 0.5 s  |
| Rated beam angle (half peak value) | 190.00 ° |

Dimensions & Weight



|                  |            |
|------------------|------------|
| Overall length   | 1513.10 mm |
| Diameter         | 27.80 mm   |
| Tube diameter    | 25,5 mm    |
| Maximum diameter | 28 mm      |
| Product weight   | 248.00 g   |

Temperatures & operating conditions

|                                      |              |
|--------------------------------------|--------------|
| Ambient temperature range            | -20...+45 °C |
| Maximum temperature at tc test point | 78 °C        |

Lifespan

|                                     |         |
|-------------------------------------|---------|
| Lifespan                            | 60000 h |
| Number of switching cycles          | 200000  |
| Lumen maintenance at end of serv    | 0.70    |
| Rated lamp survival factor at 6,000 | ≥ 0.90  |

Additional product data

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

Capabilities

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

Certificates & Standards

|                         |                 |
|-------------------------|-----------------|
| Energy efficiency class | D 1)            |
| Energy consumption      | 22.00 kWh/1000h |
| Type of protection      | IP20            |
| Standards               | CE              |

|                                              |     |
|----------------------------------------------|-----|
| Photobiological safety group acc. to EN62778 | RG0 |
|----------------------------------------------|-----|

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

### Country-specific categorizations

|                 |                 |
|-----------------|-----------------|
| Order reference | LEDTUBE T8 HF P |
|-----------------|-----------------|

### 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                                   | NMLS            |
| 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                                               | 1513.10 mm      |
| Height                                               | 27.80 mm        |
| Width                                                | 27.80 mm        |
| Chromaticity coordinate x                            | 0.381           |
| Chromaticity coordinate y                            | 0.379           |
| 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 | No              |
| EPREL ID                                             | 1536783,519424  |
| Model number                                         | AC33861,AC28282 |

### Safety advice

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

- Operation in outdoor applications in suitable damp-proof luminaires possible according to data sheet and installation instruction.
- The operating temperature range of LED tube is restricted. In case of doubt regarding suitability of the application please measure Tc max temperature on the product prior to installation.

## DOWNLOAD DATA

| Documents and certificates                                                          |                               |
|-------------------------------------------------------------------------------------|-------------------------------|
|     | User instruction              |
|     | Installation guide            |
|     | Declarations Of Conformity CE |
| Photometric and lighting design files                                               |                               |
|    | IES file (IES)                |
|    | LDT file (Eulumdat)           |
|   | LDC typ polar                 |
|  | Spectral power distribution   |

## LOGISTICAL DATA

| Product code  | Packaging unit (Pieces/Unit) | Dimensions (length x width x height) | Gross weight | Volume                |
|---------------|------------------------------|--------------------------------------|--------------|-----------------------|
| 4058075545243 | Sleeve<br>1                  | 1,520 mm x 31 mm x 31 mm             | 277.00 g     | 1.46 dm <sup>3</sup>  |
| 4058075545250 | Shipping box<br>10           | 1,572 mm x 210 mm x 115 mm           | 3542.00 g    | 37.96 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.

## DISCLAIMER

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