

# PRODUCT DATASHEET

## LED TUBE T8 EM S 438 mm 5.1W 840

LED TUBE T8 EM S | High performance LED tubes for electromagnetic control gear (CCG) and AC mains, 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 technology
- 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
- Quick, simple and safe replacement without rewiring
- Energy savings of up to 70 % (compared to T8 fluorescent lamp)
- 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
- ENEC 10 VDE mark



- Single and tandem operation on conventional control gear ( $\leq 0.9$  m versions)
- Lifetime up to 75,000 h
- Type of protection: IP20
- Mercury-free and RoHS compliant

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**TECHNICAL DATA****Electrical data**

|  |               |
|--|---------------|
| Nominal wattage  | 5.1 W         |
| Construction wattage                                     | 5.10 W        |
| Nominal voltage  | 220...240 V   |
| Operating mode   | CCG, AC Mains |
| Nominal current  | 24 mA         |
| Type of current  | AC            |
| Inrush current   | 3.25 A        |
| Suitable for DC input                                    | Yes           |
| Input voltage DC   | 186...260 V   |
| Operating frequency                                      | 50/60 Hz      |
| Mains frequency  | 50/60 Hz      |
| Max. lamp number on MCB B10 A                            | 184           |
| Max. lamp number on MCB B10 A - CCG without compensation | 102           |
| Max. lamp number on MCB B10 A - CCG with compensation    | 40            |
| Max. lamp number on MCB B16 A                            | 231           |
| Max. lamp number on MCB B16 A - CCG without compensation | 129           |
| Max. lamp number on MCB B16 A - CCG with compensation    | 51            |
| Total harmonic distortion                                | < 20 %        |
| Power factor $\lambda$                                   | 0.90          |

**Photometrical data**

|   |            |
|---|------------|
| Luminous flux                           | 900 lm     |
| Luminous efficacy                       | 176 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                | 80         |
| Light color                             | 840        |
| Standard deviation of color matching    | ≤5 sdcn    |
| Rated LLMF at 6,000 h                   | 0.80       |
| Flickering metric (Pst LM)              | 1          |
| Stroboscope effect metric (SVM)         | 0.4        |



EPREL data spectral diagram PROF  
LEDr 4000K

Light technical data

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

Dimensions & Weight



|   |           |
|---|-----------|
| Overall length                              | 450.00 mm |
| Length with base excl. base pins/connection | 438.00 mm |
| Diameter                                    | 26.70 mm  |
| Tube diameter                               | 25.8 mm   |
| Maximum diameter                            | 27 mm     |
| Product weight                              | 78.00 g   |

Temperatures & operating conditions

|                                      |                            |
|--------------------------------------|----------------------------|
| Ambient temperature range            | -20...+50 °C <sup>1)</sup> |
| Maximum temperature at tc test point | 60 °C                      |

1) Temperature surrounding the lamp - for enclosed luminaires: temperature inside of the luminaire

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 |
| Mercury-free                | Yes    |

## Capabilities

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

## Certificates &amp; Standards

|  |                              |
|--|------------------------------|
| Energy efficiency class                      | G <sup>1)</sup>              |
| Energy consumption                           | 6.00 kWh/1000h               |
| Type of protection                           | IP20                         |
| Standards                                    | CE / UKCA / VDE / ENEC / EAC |
| Photobiological safety group acc. to EN62778 | RG0                          |

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

## Country-specific categorizations

|                 |                 |
|-----------------|-----------------|
| Order reference | LEDTUBE T8 EM S |
|-----------------|-----------------|

## 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 |
| Standby power                                       | <0.5 W       |
| Claim of equivalent power                           | No           |
| Length  | 450.00 mm    |
| Height  | 26.70 mm     |

|  |                 |
|--|-----------------|
| Width  | 26.70 mm        |
| Chromaticity coordinate x                            | 0.3818          |
| Chromaticity coordinate y                            | 0.3797          |
| R9 Colour rendering index                            | 0.00            |
| Beam angle correspondence                            | SPHERE_360      |
| Survival factor                                      | 0.9             |
| Displacement factor                                  | 0.9             |
| LED light source replaces a fluorescent light source | No              |
| EPREL ID   | 1334051,1529741 |
| Model number   | AC45341,AC51551 |

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

## DOWNLOAD DATA

| Documents and certificates   |  | Document name                      |
|--|--|------------------------------------|
|  | User instruction / safety instructions | LED TUBE T8 EM S                   |
|  | Legal information                      | Informationstext 18 Abs 4 ElektroG |
|  | Declarations of conformity             | LEDTUBE T8 EM                      |
|  | Declarations of conformity             | LED TUBE T8 EM                     |
|  | Declarations of conformity UKCA        | LED TUBE T8 EM                     |
|  | Declarations of conformity UKCA        | LED TUBE T8 EM                     |

| Photometric and lighting design files  |                                     | Document name                               |
|--|-------------------------------------|---|
|  | IES file (IES)                      | LEDTUBE T8 EM S 438 5.1W 840                |
|  | LDT file (Eulumdat)                 | LEDTUBE T8 EM S 438 5.1W 840                |
|  | UGR file (UGR table)                | LEDTUBE T8 EM S 438 5.1W 840                |
|  | Light distribution curve type polar | LEDTUBE T8 EM S 438 5.1W 840                |
|  | Spectral power distribution         | EPREL data spectral diagram PROF LEDr 4000K |
| Tender texts   |                                     | Document name                               |
|  | Tender documents                    | LED TUBE T8 EM S 438 mm 5.1W 840-EN         |

## LOGISTICAL DATA

| Product code  | Packaging unit (Pieces/Unit) | Dimensions (length x width x height) | Gross weight | Volume               |
|---------------|------------------------------|--------------------------------------|--------------|----------------------|
| 4099854037351 | Sleeve<br>1                  | 550 mm x 29 mm x 29 mm               | 95.00 g      | 0.46 dm <sup>3</sup> |
| 4099854037368 | Shipping box<br>10           | 580 mm x 180 mm x 95 mm              | 1214.00 g    | 9.92 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/ledtube](http://www.ledvance.com/ledtube)

## 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.

## DISCLAIMER

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