

# PRODUCT DATASHEET

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

LED TUBE T8 EM SUPERIOR | 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

- Energy savings of up to 71 % (compared to T8 fluorescent lamp)
- Quick, simple and safe replacement with or without rewiring
- Highly versatile thanks to selectable power/lumen steps (1200 mm, 1500 mm)
- No bending thanks to glass technology
- Support the implementation of the HACCP concepts from production through to presentation
- Very high resistance to switching loads
- 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
- Multi Lumen function: 2 power steps selectable (1200 mm, 1500 mm)



- LED tube made of glass with shatter protection e.g. for food industry applications
- ENEC 10 VDE mark
- Single and tandem operation on conventional control gear ( $\leq 0.9$  m versions)
- Extremely long lifetime: up to 100,000 h
- Type of protection: IP20
- Mercury-free and RoHS compliant
- Low flicker according to EU 2019-2020 ( $SVM \leq 0.4$  /  $PstLM \leq 1$ )

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## TECHNICAL DATA

### Electrical data

|                                                          |                        |
|----------------------------------------------------------|------------------------|
| Nominal wattage                                          | 5.1 W                  |
| Nominal voltage                                          | 220...240 V            |
| Operating mode                                           | CCG, AC Mains          |
| Nominal current                                          | 24 mA                  |
| Type of current                                          | AC                     |
| Inrush current                                           | 2.56 A                 |
| Suitable for DC input                                    | Yes                    |
| Input voltage DC                                         | 186...260 V            |
| Operating frequency                                      | 50/60 Hz               |
| Mains frequency                                          | 50/60 Hz <sup>1)</sup> |
| Max. lamp number on MCB B10 A                            | 234                    |
| Max. lamp number on MCB B10 A - CCG without compensation | 102                    |
| Max. lamp number on MCB B10 A - CCG with compensation    | 73                     |
| Max. lamp number on MCB B16 A                            | 293                    |
| Max. lamp number on MCB B16 A - CCG without compensation | 129                    |
| Max. lamp number on MCB B16 A - CCG with compensation    | 91                     |
| Total harmonic distortion                                | < 20 %                 |
| Power factor $\lambda$                                   | 0.90                   |

<sup>1)</sup> DC 0 Hz

### Photometrical data

|                                         |                     |
|-----------------------------------------|---------------------|
| Luminous flux                           | 900 lm              |
| Nominal useful luminous flux 90°        | 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 sdc <sub>m</sub> |
| Rated LLMF at 6,000 h                   | 0.80                |
| Flickering metric (Pst LM)              | 1                   |

|                                 |     |
|---------------------------------|-----|
| Stroboscope effect metric (SVM) | 0.4 |
|---------------------------------|-----|

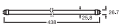


EPREL data spectral diagram PROF  
LEDr 4000K

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  |
| 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                      |
| Performance temp. acc. to IEC 62717  | 35 °C <sup>2)</sup>        |

1) Temperature surrounding the lamp - for enclosed luminaires: temperature inside of the luminaire  
2) Tp rated. Tp point coincides with Tc point - marked on device

Lifespan

|                           |          |
|---------------------------|----------|
| Lifespan L70/B50 at 25 °C | 100000 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 & Standards

|                                              |                              |
|----------------------------------------------|------------------------------|
| Energy efficiency class                      | G <sup>1)</sup>              |
| Energy consumption                           | 6.00 kWh/1000h               |
| Type of protection                           | IP20                         |
| Standards                                    | CE / UKCA / EAC / ENEC / VDE |
| 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 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                            | 1               |
| Beam angle correspondence                            | SPHERE_360      |
| Survival factor                                      | 0.9             |
| Displacement factor                                  | 0.9             |
| LED light source replaces a fluorescent light source | No              |
| EPREL ID                                             | 2150920,2340243 |
| Model number                                         | AC69441,AC82147 |

## 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                                                       |
|  | Extended installation guide            | Installation instructions LED TUBE T8, T5 und DULUX LED 2024 10 EN     |
|  | Extended installation guide            | Notes on the operation of LEDVANCE LED tubes in compensated luminaires |
|  | Extended installation guide            | LEDVANCE Luminaire conversion checklist                                |

| Documents and certificates                                                        |                                 | Document name                                             |
|-----------------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------|
|  | Legal information               | Informationstext 18 Abs 4 ElektroG                        |
|  | Declarations of conformity      | LEDTUBE                                                   |
|  | Declarations of conformity      | LED tube                                                  |
|  | Declarations of conformity UKCA | LEDTUBE                                                   |
|  | Declarations of conformity UKCA | LED tubes                                                 |
|  | Certificates                    | LEDTUBE T8 EM S 438                                       |
|  | EPD                             | ENVIRONMENTAL PRODUCT DECLARATION LED TUBE T8 EM SUPERIOR |

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

| Tender texts                                                                        |                  | Document name                              |
|-------------------------------------------------------------------------------------|------------------|--------------------------------------------|
|  | Tender documents | LED TUBE T8 EM SUPERIOR 438 mm 5.1W 840-en |

LOGISTICAL DATA

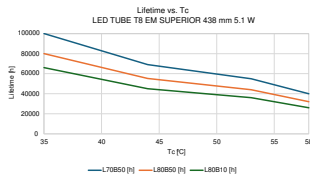
| Product code  | Packaging unit (Pieces/Unit) | Dimensions (length x width x height) | Gross weight | Volume               |
|---------------|------------------------------|--------------------------------------|--------------|----------------------|
| 4099854432507 | Sleeve<br>1                  | 550 mm x 29 mm x 29 mm               | 95.00 g      | 0.46 dm <sup>3</sup> |
| 4099854432514 | 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.

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## ADDITIONAL CATALOG INFORMATION



## References / Links

- For Guarantee see [www.ledvance.com/guarantee](http://www.ledvance.com/guarantee)
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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.