

## PRODUCT DATASHEET

### LF4000TW -G1-827.865-02 L1

LINEARlight FLEX® Tunable White | LED modules for professional and industrial applications



#### Areas of application

- Cove lighting
- Shop lighting
- Offices

#### Product benefits

- Color uniformity better than 3 SDCM on the entire LED strip and between strips
- LED lifetime acc.to IES LM-80 and IES TM-21 standards, and also internal OSRAM LAB tests
- Excellent robustness: single reel manufacturing technology (no solder joints on strip)
- Easy mounting on many smooth surfaces thanks to self-adhesive tape at the back
- Extraordinary design and high quality materials
- Pre-soldered wires

#### Product features

- 24 V LED strips flexible and cuttable
- Luminous flux: up to 3,800 lm/m
- Up to 60,000 h L90/B10 with SDT technology, tested acc. to IEC 62717 on real LED strips
- Adjustable color temp. via Tunable White: 2200...3500 K, 2500...4000 K, 2700...5700 K CRI90
- Adjustable color temp. via Tunable White: 2200...3500 K, 2500...3500 K, 2700...6500 K CRI80
- CRI80, CRI90 options available
- Stable light flux over length: active constant current regulators (ICs), PWM safe



- Embedded automatic quick protection against accidental miswiring up to 25 V
- Fully PWM dimmable from zero up to 2.5 kHz, audible noise free, suitable for quite places
- Designed, engineered and manufactured and tested in Italy (ISO9001, ISO 17025, ACCREDIA, VDE)

## TECHNICAL DATA

### Electrical data

Nominal wattage	76.40 W
Construction wattage	76.40 W
Nominal wattage per meter	36.4 W
Nominal voltage	24 V
Input voltage range	23...25 V
Reverse Voltage	25 V
Type of current	DC
Nominal current	3185.000 mA

### Photometrical data

Luminous efficacy	104 lm/W
Luminous flux per meter	3800 lm
Color temperature	2700 ... 7000 K
Color rendering index Ra	> 80
Light color LED	White
Light color (designation)	Dynamic White
Standard deviation of color matching	≤4 sdc <sub>m</sub>
Lumen main.fact.at end of nom.life time	0.70

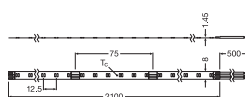
### Light technical data

Beam angle	120 °
Rated beam angle (half peak value)	120.00 °
Starting time	< 0.5 s
Warm-up time (60 %)	< 0.50 s

### LED MODULE INFORMATION

Number of LEDs per meter	160
Number of LEDs per smallest unit	12

### Dimensions & Weight



Length	2100.00 mm
Length – smallest unit	75,0 mm
Cable length	500.000
Width	8.00 mm
Height	1.45 mm
Cable cross-section, input side	0.5 mm <sup>2</sup>
Conductor cross section	0.5 mm <sup>2</sup>
LED pitch	12,5 mm
Product weight	32.5 g

### Temperatures & operating conditions

Ambient temperature range	-20...+50 °C <sup>1)</sup>
Maximum temperature at tc test point	-20...+85 °C
Temperature range in operation	-20...+85 °C <sup>2)</sup>
Performance temp. acc. to IEC 62717	70 °C <sup>3)</sup>

1) Rated ambient temp. 25°C / Providing that temperature at Tc point is below max value during operation / Temperature ramping for environmental testing acc. to IEC 62717, 1K/min

2) Exceeding the maximum ratings will reduce expected life time or destroy the LED strip.

3) Tp rated. Tp point coincides with Tc point - marked on device

### Lifespan

Nominal lamp life time	60000 h
Number of switching cycles	30000

### Capabilities

Dimmable	Yes
Dimming interface	PWM
Type of installation	Surface mounting
Lowest bending radius	20 mm
Self-adhesive	Yes

### Certificates & Standards

Standards	CE; ENEC 10 VDE / EAC / UL/CSA Recognized
Type of protection	IP00
Energy consumption	84.10 kWh/1000h

## LOGISTICAL DATA

Temperature range at storage	-40...+85 °C
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## EQUIPMENT / ACCESSORIES









- Flexessories: a complete set of aluminum channels with diffusers and lenses
- Simplified connection with optional matching CONNECTsystem
- Perfectly matched with OPTOTRONIC OTi DALI 50/220...240/24 TW
- Perfectly matched with OPTOTRONIC OTi DALI 80/220...240/24 TW

## ADDITIONAL PRODUCT INFORMATION

- Some LED modules are equipped with a self-adhesive tape for attaching the LED module to suitable materials, such as aluminum profiles, which must be clean and free of oil or silicone coatings, as well as other dirt/dust particles. The adhesive tape is intended for single use and if removed may damage the material to which it is stuck and the LED module itself, which must then be scrapped. Use the adhesive tape when the installation material temperature is in the 18 °C...35 °C range. Complete adhesion takes up to 72 h.
- LED modules are designed for static installations in accordance with IPC 6013C – Use A. Take material vibrations, repetitive torsion, and elongation/compression into account.
- If the operating environment covers a broad temperature range (e.g. outdoor applications) and the operating length is longer than 2 m, the use of adequate mounting surfaces is required. The use of an additional thicker adhesive tape between LED module and mounting surface is also recommended in order to absorb the stress of any mismatch in expansion. Assure enough space for module expansion with increasing temperature.
- The manufacturer is not responsible for damage due to chemical corrosion. The user must provide suitable protection against corrosive agents such as moisture and condensation and any other harmful elements/compounds. Make certain to avoid corrosive atmospheres. According to the current state of LED technology, hydrogen sulfide (H<sub>2</sub>S) causes accelerated corrosion which leads to shortened lifetime or premature failure. Sources of H<sub>2</sub>S may be rubber, foam rubber, soft-foam tapes, rubber-based sealing, natural sources (e.g. sulfur springs), etc. To avoid H<sub>2</sub>S from sulfur-vulcanized rubber use silicon-based materials or peroxide-crosslinked rubber instead. Follow the recommendations in the material datasheet of the rubber supplier.
- IP00 LED modules, as manufactured, have no conformal coating and therefore offer no inherent protection against corrosion. Conformal coating treatment is possible, however materials must be selected properly in order to avoid product damage or impaired performance; the user must also completely seal the cut parts (ends/edges).
- For applications involving exposure to humidity and dust the module must be protected by a fixture or housing with a suitable IP protection class.
- Consult OSRAM Technical Service for further advice.
- Only a qualified electrician may install the module.
- Handle with care and ensure that there is no mechanical product damage, including damage to invisible internal electronics parts.
- Exceeding maximum operating and storage temperature ratings can reduce the expected lifetime or even destroy the LED module. The temperature of the LED module must be measured at the T<sub>c</sub>-point in accordance with EN 60598-1 under steady-state conditions, considering the worst case; drive all channels at 100 % power. Refer to the product drawing for the exact location of the T<sub>c</sub>-point.
- Exceeding the maximum ratings for the operating voltage causes hazardous overload and will likely destroy the LED module.
- Installation of LED modules and connection to the power supply must comply with all applicable electrical and safety standards.
- Observe correct polarity and wiring diagrams! Incorrect polarity or wrong wiring can cause unpredictable permanent damage or even failure of the product.
- Never exceed the maximum operable length, including daisy-chaining connections.
- Always ensure electrical isolation between the LED module and the mounting surface, especially in the vicinity of connections or cut ends.
- IP00 LED modules are ESD-sensitive; take adequate precautions during installation and operation of the products.
- Use only SELV LED drivers in accordance with applicable lighting standards and LED module ratings. In order to safely operate OSRAM LED modules it is necessary to supply them with an electronically stabilized power supply providing protection against short circuits, overload and overheating. To simplify the approval process of the luminaire/installation, the electronic power supplies control gear for LED modules must bear the CE and ENEC marking. In Europe the Declarations of Conformity must include at least the following standards: EN 61347-2-13, EN 55015, EN 61547 and EN 61000-3-2. ENEC certification will be based on EN 61347-2-13 and EN 62384. OSRAM OPTOTRONIC LED drivers comply with all relevant standards and guarantee safe operation; see the relevant brochure for more detailed information about OSRAM OPTOTRONIC.
- Avoid installations in rural and urban areas with high industrial activity and heavy traffic (higher than class than 4C1 according IEC 60721-3) and as

well as installation in spa, areas with chlorine atmosphere, direct exposure to blown sand.

**DOWNLOAD DATA**

Documents and certificates		Document name
	User instruction / safety instructions	LINEARlight FLEX Tunable White
	Declarations of conformity	Manufacturer declaration
	Declarations of conformity	Declaration of conformity
	Certificates	UL Certificate
	Certificates	ENEC+_VDE Certificate
	Certificates	CB TEST CERTIFICATE DE1-57844
Photometric and lighting design files		Document name
	IES file (IES)	LF4000TW -G1-827.865-02 L1
	LDT file (Eulumdat)	Eulumdat LF4000TW-G3-827-865-02

**LOGISTICAL DATA**

Product code	Packaging unit (Pieces/Unit)	Dimensions (length x width x height)	Gross weight	Volume
4062172032605	Folding box 1	107 mm x 55 mm x 25 mm	1718.00 g	0.15 dm <sup>3</sup>
4062172032612	Shipping box 8	241 mm x 195 mm x 205 mm	1193.00 g	9.63 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.