

Light is OSRAM

OSRAM

## LINEARLIGHT FLEX ECO

## LF05E2

## TECHNICAL DATASHEET

## Key Features &amp; Benefits

- Decorative linear separable LED strip on flexible printed circuit board with self-adhesive back
- High quality single PCB from continuous reel-to-reel production for improved reliability
- Current control technology for constant flux level along the module
- Fine white binning (3 steps MacAdam ellipse)
- PWM Dimmable

## Possible Applications

- Architectural lighting / integration  
Coves, hand rails, walls, edge coupling, et.al.
- Object lighting / integration
- Signage application



## QUICK REFERENCE

| Product        | Order Code    | Color | K    | V  | W/m | lm/m | lm/W | Beam Angle (°) | Shipping Units |
|----------------|---------------|-------|------|----|-----|------|------|----------------|----------------|
| LF05E2-W2F-824 | 4052899942790 | white | 2400 | 24 | 3.0 | 220  | 73   | 120            | 8              |
| LF05E2-W2F-827 | 4008321971357 | white | 2700 | 24 | 3.6 | 205  | 57   | 120            | 8              |
| LF05E2-W2F-830 | 4052899928435 | white | 3000 | 24 | 3.6 | 220  | 61   | 120            | 8              |
| LF05E2-W2F-840 | 4052899928442 | white | 4000 | 24 | 3.6 | 240  | 67   | 120            | 8              |
| LF05E2-W2F-865 | 4008321971418 | white | 6500 | 24 | 3.6 | 220  | 61   | 120            | 8              |
| LF05E2-W2F-824 | 4052899942790 | white | 2400 | 24 | 3.0 | 220  | 73   | 120            | 8              |

Due to the special conditions of manufacturing processes of LED, the typical data of technical parameters can only reflect statistical figures and do not necessarily correspond to the actual parameters of each single product which could differ from the typical data.

Subject to change without notice. Errors and omissions excepted.

Version: 2016-04-07

## TECHNICAL OPERATING DATA FOR COMPLETE REEL

| Product        | Order Code    | Power [W] | Current [A] | Luminous Flux [lm] | Module Length [m] |
|----------------|---------------|-----------|-------------|--------------------|-------------------|
| LF05E2-W2F-824 | 4052899942790 | 30.0      | 1.3         | 2,200              | 10                |
| LF05E2-W2F-827 | 4008321971357 | 36.0      | 1.5         | 2,050              | 10                |
| LF05E2-W2F-830 | 4052899928435 | 36.0      | 1.5         | 2,200              | 10                |
| LF05E2-W2F-840 | 4052899928442 | 36.0      | 1.5         | 2,400              | 10                |
| LF05E2-W2F-865 | 4008321971418 | 36.0      | 1.5         | 2,200              | 10                |
| LF05E2-W2F-824 | 4052899942790 | 30.0      | 1.3         | 2,200              | 10                |

## Technical Specifications

### GENERAL

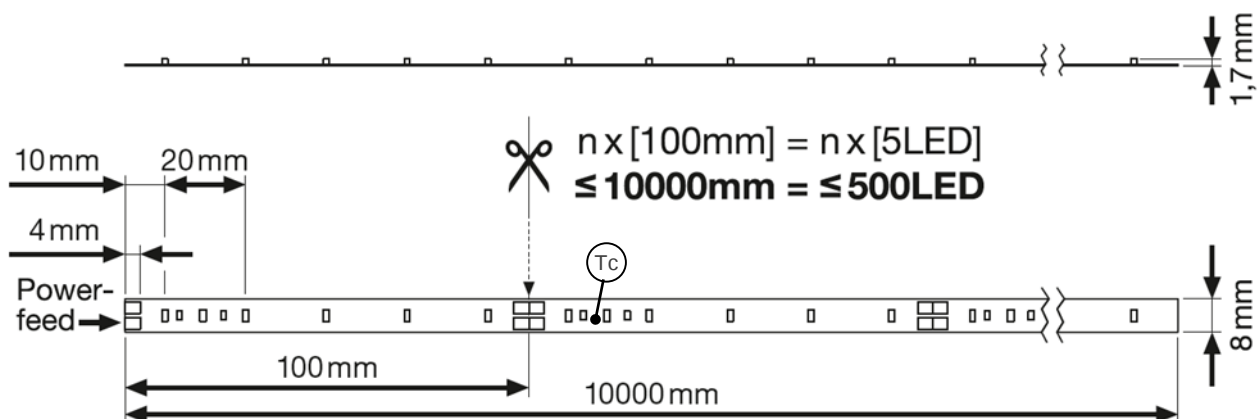
|                           |                                                           |
|---------------------------|-----------------------------------------------------------|
| Dimmable                  | Pulse width modulation (PWM)                              |
| Binning                   | Fine white (3 step MacAdam ellipse)                       |
| Lifetime                  | 50,000 h (L70B50, Tc max)                                 |
| Adhesive tape on backside | 3M F 9460                                                 |
| Complementary systems     | CONNECTsystem, SLIMCONNECTsystem, SLIM TRACK, OPTOTRONIC  |
| Certifications            | CE, UL8750 recognized, UL2108 listed, EAC, RoHS compliant |

### OPERATING CONDITIONS

|                                        |          |
|----------------------------------------|----------|
| Operating temperature at Tc-Point [°C] | -20 – 75 |
| Storage temperature [°C]               | -20 – 75 |
| Voltage range [V dc]                   | 23 – 25  |
| Reverse Voltage [V dc]                 | 25       |

- Exceeding maximum ratings for operating and storage temperature will reduce expected life time or destroy the LED Module.
- Exceeding maximum ratings for operating voltage will cause hazardous overload and will likely destroy the LED Module.
- The temperature of the LED module must be measured at the Tc-point according to EN60598-1 in a thermally constant status with a temperature sensor or a temperature sensitive label. For exact location of the Tc-point see drawing below.

## Technical Drawings



Due to the special conditions of manufacturing processes of LED, the typical data of technical parameters can only reflect statistical figures and do not necessarily correspond to the actual parameters of each single product which could differ from the typical data.

Subject to change without notice. Errors and omissions excepted.

Version: 2016-04-07

## Safety information

- The LED module itself and all its components must not be mechanically stressed.
- Assembly must not damage or destroy conducting paths on the circuit board.
- Installation of LED modules (with power supplies) needs to be made with regard to all applicable electrical and safety standards. Only qualified personnel should be allowed to perform installations.
- Observe correct polarity!  
Depending on the product incorrect polarity will lead to emission of red or no light. The module can be destroyed! Correct polarity immediately!
- Parallel connection is highly recommended as safe electrical operation mode. Serial connection is not recommended. Unbalanced voltage drop can cause hazardous overload and damage the LED module.
- Please ensure that the power supply is of adequate power to operate the total load.
- When mounting on metallic or otherwise conductive surfaces, there needs to be an electrical isolation at soldering points between module and the mounting surface.
- The maximum length of LF05E2 is 10m with power feed at one end.
- Pay attention to standard ESD precautions when installing the module.
- The module, as manufactured, has no conformal coating and therefore offers no inherent protection against corrosion. The ability to customize the length of the module by cutting at specifically marked points is a key feature of the product and hence the reason for no factory installed conformal coating. For these reasons, it is recommended that the user complete all module modifications first (cutting wiring) and then apply a conformal coating in the final stages of installation.
- Damage by corrosion will not be honored as a materials defect claim. It is the user's responsibility to provide suitable protection against corrosive agents such as moisture and condensation and other harmful elements.
- For applications involving exposure to humidity and dust the module must be protected by a fixture or housing with a suitable protection class. The module can be protected against condensation water by treatment with an appropriate circuit board grade conformal coating. The conformal coating should have the following features:
  - Optical transparency
  - UV-resistance
  - Thermal expansion matching the thermal expansion of the module
  - Low permeability of steam for all climatic conditions
  - Resistance against corrosive environment.

In order to drive OSRAM LED-Modules safely, it is absolutely necessary to operate them with an electronically stabilized power supply protecting against short circuits, overload and overheating. To also ease the luminaire/installation approval, electronic control gear for LED or LED modules should carry the CE mark and be ENEC certified. In Europe the declarations of conformity must include the following standards: CE: EC 61347-2-13, EN 55015, IEC 61547 and IEC 61000-3-2 - ENEC: 61347-2-13 and IEC/EN 62384. Also check for the mark of an independent authorized certification institute. Please see the relevant brochure for more detailed information (see "Related and Further Information") OSRAM OPTOTRONIC® control gear complies with all relevant standards and guarantees safe operation.

## Assembly Information

- Connection with soldering wires on unmounted module:  
Do not pre-tin the solder-pads but pre-tin the wires and solder for max 4s at 300°C.  
Allow solder-points to completely cool down before the next soldering.  
Prevent shear- or peel forces.
- Soldering of wires with the module mounted on a heatsink:  
Pre-tin solder-pads and wires and solder for max 3 s at 350 °C.  
Allow solder-points to completely cool down before the next soldering.  
Prevent shear- or peel forces.
- The smallest unit (100 mm – 5 LEDs) can be removed by cutting with scissors between the designated solder pads.
- Mounting of the module is facilitated by the double-sided adhesive tape on the back-surface of the module.
- Mounting surface must be clean and dry, free of oils or silicone coatings as well as dirt particle.

Due to the special conditions of manufacturing processes of LED, the typical data of technical parameters can only reflect statistical figures and do not necessarily correspond to the actual parameters of each single product which could differ from the typical data.

Subject to change without notice. Errors and omissions excepted.

Version: 2016-04-07

- The mounting substrate must have sufficient structural integrity. Take care to completely remove the protective backing. Once the module is appropriately positioned, pre on the module with about 20N/cm<sup>2</sup> (refer to application techniques of 3M adhesive transfer tapes). In difficult cases the use of a prime may help.
- Maximum temperature ratings must be kept. Therefore the module may have to be mounted on a metal heat sink, depending on the individual installation.
- The minimum bending radius is 2 cm. The module may be bent over a smaller radius but only in regions of the circuit board containing electronic components and such bends should be made once and fixed in position to avoid cyclic fatigue.
- Bending is only allowed within the bending axis of the PCB. Bending outside of that leads to torsion which may cause damage to the module and will lead to failure.
- When installing in environments with large variations in temperature (e.g. outdoor applications) and operating length of more than 2 m, the use of adequate mounting surfaces is necessary. Otherwise it is advisable to use an additional thicker adhesive tape to absorb the stress of any mismatch in expansion.

## Complementary Systems & Accessories

### SLIMCONNECT SYSTEM

| Description             | Product name        | Order Code    | Shipping details |
|-------------------------|---------------------|---------------|------------------|
| 2pin Feeder             | LF-2PIN Flex SC     | 4008321832436 | 10 / 250         |
| Jumper (board-to-board) | LF-CONN Flex SC     | 4008321832467 | 25 / 250         |
| Extension wire 30mm     | LF-WIRE-30 FLEX SC  | 4008321875587 | 100 / 10,000     |
| Extension wire 150mm    | LF-WIRE-150 FLEX SC | 4008321875563 | 50 / 5,000       |

### CONNECT SYSTEM

| Description              | Product name     | Order Code    | Shipping details |
|--------------------------|------------------|---------------|------------------|
| 2pin Feeder              | LF-2PIN FLEX     | 4008321955326 | 10 / 100         |
| Jumper (10mm extension)  | LF-CONN-10 FLEX  | 4008321955333 | 10 / 200         |
| Jumper (150mm extension) | LF-CONN-150 FLEX | 4008321955340 | 10 / 100         |

### SLIMTRACK SYSTEM

| Description                     | Product name           | Order Code    | Shipping details |
|---------------------------------|------------------------|---------------|------------------|
| SLIM TRACK                      | LF-LTS-2100 SLIM TRACK | 4008321978981 | 40               |
| Mounting Bracket for SLIM TRACK | LF-LTS-MB              | 4008321979025 | 35 / 280         |
| Clear SLIM TRACK Cover          | LF-LTS COVER C         | 4008321790187 | 40               |
| Diffuse SLIM TRACK Cover        | LF-LTS-COVER-DIFFUSE   | 4008321979001 | 40               |
| Endcap for Diffuse Cover        | LF-LTS-ENDCAP          | 4008321979049 | 20 / 160         |
| Semi-Diffuse SLIM TRACK Cover   | LF-LTS COVER S         | 4008321790200 | 40               |

Due to the special conditions of manufacturing processes of LED, the typical data of technical parameters can only reflect statistical figures and do not necessarily correspond to the actual parameters of each single product which could differ from the typical data.

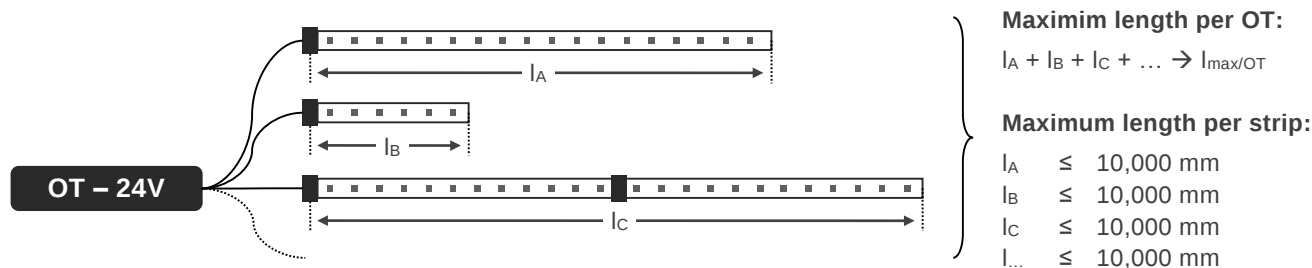
Subject to change without notice. Errors and omissions excepted.

Version: 2016-04-07

## OPTOTRONIC

| Recommended OPTOTRONIC® drivers          | EAN           |
|------------------------------------------|---------------|
| <b>Non-dimmable</b>                      |               |
| OPTOTRONIC OT 6/200-240/24 CE            | 4008321113269 |
| OPTOTRONIC OT 8/200-240/24               | 4008321040169 |
| OPTOTRONIC OT 20/220-240/24              | 4050300618111 |
| OPTOTRONIC OT 20/120-240/24 S            | 4050300662626 |
| OPTOTRONIC OT 75/220-240/24              | 4050300817477 |
| OPTOTRONIC OT 75/220-240/24 E            | 4008321362476 |
| OPTOTRONIC OT 80/220-240/24 P            | 4008321981684 |
| OPTOTRONIC OT 120/220-240/24 P           | 4008321981707 |
| OPTOTRONIC OT 240/220-240/24 P           | 4008321981721 |
| <b>Dimmable</b>                          |               |
| OPTOTRONIC OT EASY 60 II                 | 4008321187796 |
| OPTOTRONIC OT EASY 80                    | 4008321808363 |
| OPTOTRONIC OT 65/220-240/24 3DIM E       | 4008321964403 |
| OPTOTRONIC OTi DALI 75/220-240/24 1-4 CH | 4008321371560 |
| OPTOTRONIC OT 80/220-240/24 DIM P        | 4008321981677 |
| OPTOTRONIC OT 120/220-240/24 DIM P       | 4008321981691 |
| OPTOTRONIC OT 240/220-240/24 DIM P       | 4008321981714 |

Please consider that lengths may differ if further controls are installed.



## Global order information

|                   |               |
|-------------------|---------------|
| <b>EUROPE/MEA</b> |               |
| LF05E2-W2F-824    | 4052899942790 |
| LF05E2-W2F-827    | 4008321971357 |
| LF05E2-W2F-830    | 4052899928435 |
| LF05E2-W2F-840    | 4052899928442 |
| LF05E2-W2F-865    | 4008321971418 |
| LF05E2-W2F-824    | 4052899942790 |

Due to the special conditions of manufacturing processes of LED, the typical data of technical parameters can only reflect statistical figures and do not necessarily correspond to the actual parameters of each single product which could differ from the typical data.

Subject to change without notice. Errors and omissions excepted.

Version: 2016-04-07

## Light is OSRAM

# OSRAM

LINEARLIGHT FLEX ECO  
LF05E2  
TECHNICAL DATASHEET  
2016-04-07

## Related and further information

- OSRAM LED Systems [www.osram.com/led-systems](http://www.osram.com/led-systems)
- OSRAM: FLEXIBLE LED MODULES [www.osram.com/flex](http://www.osram.com/flex)
- OSRAM catalogue <http://catalog.osram.com>
- General information [www.osram.com](http://www.osram.com)



### OSRAM GmbH

Head Office:

Marcel-Breuer-Strasse 6  
80807 Munich, Germany

+49 89 6213-0  
[www.osram.com](http://www.osram.com)

Sales and technical support is given by the local OSRAM subsidiaries.

On the OSRAM website all subsidiaries are listed with complete address and phone numbers.

# OSRAM