

## LINEARlight FLEX Protect ECO

– LED modules for professional and industrial applications



### Product family features

- Flexible and cuttable LED strip
- Luminous flux: up to 200 lm/m
- Type of protection: IP67
- Dimmable with PWM technology
- Fine White (3.5 SDCM)
- Salt mist proof

### Product family benefits

- Large selection of light colors
- Great design freedom thanks to flexibility and cuttability of module
- High-performance silicone for extremely long life and flexibility
- Simple connection thanks to premounted connectors
- Extraordinary design and high quality materials
- Toolless connection with the optional CONNECTsystem
- Easy mounting on many smooth surfaces thanks to self-adhesive tape at the back



## Product family datasheet

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### Areas of application

- Decorative applications
- Wall integration
- Backlighting of complex structures
- Path lighting
- Signage
- Suitable for outdoor use

# Product family datasheet

## Technical data

### Electrical data

| Product description | Nominal voltage | Type of current | Nominal wattage per meter | Rated wattage | Input voltage range | Accidental reverse input voltage protection up to |
|---------------------|-----------------|-----------------|---------------------------|---------------|---------------------|---|
| LFP200M -G3-BL-06   | 24.0 V          | DC              | 4.1 W                     | 24.50 W       | 23...25 V           | 25 V  |
| LFP200M -G3-RE-06   | 24.0 V          | DC              | 6.0 W                     | 36.00 W       | 23...25 V           | 25 V  |
| LFP200M -G3-GR-06   | 24.0 V          | DC              | 4.1 W                     | 24.50 W       | 23...25 V           | 25 V  |
| LFP200M -G3-YE-06   | 24.0 V          | DC              | 6.0 W                     | 36.00 W       | 23...25 V           | 25 V  |

### Photometrical data

| Product description | Light color LED | Nominal dominant wavelength | Luminous flux per meter | Total useful luminous flux | Luminous efficacy     | Light color (designation) |
|---------------------|-----------------|-----------------------------|-------------------------|----------------------------|-----------------------|---------------------------|
| LFP200M -G3-BL-06   | Blue            | 467 nm                      | 48 lm                   | 290 lm                     | 12 lm/W <sup>1)</sup> | Blue                      |
| LFP200M -G3-RE-06   | Red             | 625 nm                      | 140 lm                  | 840 lm                     | 23 lm/W <sup>1)</sup> | Red                       |
| LFP200M -G3-GR-06   | Green           | 522 nm                      | 157 lm                  | 940 lm                     | 38 lm/W <sup>1)</sup> | Green                     |
| LFP200M -G3-YE-06   | Yellow          | 587 nm                      | 140 lm                  | 840 lm                     | 23 lm/W <sup>1)</sup> | Yellow                    |

<sup>1)</sup> For white color

### Light technical data

| Product description | LED pitch | Beam angle | Rated beam angle (half peak value) | Starting time | Warm-up time (60 %) |
|---------------------|-----------|------------|------------------------------------|---------------|---------------------|
| LFP200M -G3-BL-06   | 30.0 mm   | 120 °      | 120.00 °                           | < 0.5 s       | 0.00 s              |
| LFP200M -G3-RE-06   | 30.0 mm   | 120 °      | 120.00 °                           | < 0.5 s       | 0.00 s              |
| LFP200M -G3-GR-06   | 30.0 mm   | 120 °      | 120.00 °                           | < 0.5 s       | 0.00 s              |
| LFP200M -G3-YE-06   | 30.0 mm   | 120 °      | 120.00 °                           | < 0.5 s       | 0.00 s              |

### LED module information

| Product description | Number of LEDs per meter | Number of LEDs per smallest unit | Maximum operable length |
|---------------------|--------------------------|----------------------------------|-------------------------|
| LFP200M -G3-BL-06   | 33                       | 5                                | 6000 mm <sup>1)</sup>   |
| LFP200M -G3-RE-06   | 33                       | 5                                | 6000 mm <sup>1)</sup>   |
| LFP200M -G3-GR-06   | 33                       | 5                                | 6000 mm <sup>1)</sup>   |
| LFP200M -G3-YE-06   | 33                       | 5                                | 6000 mm <sup>1)</sup>   |

<sup>1)</sup> Max. cumulative product length powering it from a single end

## Product family datasheet

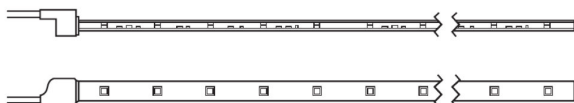
### Dimensions & weight

| Product description | Length                | Length – smallest unit | Width   | Height               | Cable length | Product weight |
|---------------------|-----------------------|------------------------|---------|----------------------|--------------|----------------|
| LFP200M -G3-BL-06   | 6000 mm <sup>1)</sup> | 150.0 mm               | 11.0 mm | 4.5 mm <sup>2)</sup> | 500.0        | 390.00 g       |
| LFP200M -G3-RE-06   | 6000 mm <sup>1)</sup> | 150.0 mm               | 11.0 mm | 4.5 mm <sup>2)</sup> | 500.0        | 390.00 g       |
| LFP200M -G3-GR-06   | 6000 mm <sup>1)</sup> | 150.0 mm               | 11.0 mm | 4.5 mm <sup>2)</sup> | 500.0        | 390.00 g       |
| LFP200M -G3-YE-06   | 6000 mm <sup>1)</sup> | 150.0 mm               | 11.0 mm | 4.5 mm <sup>2)</sup> | 500.0        | 390.00 g       |

<sup>1)</sup> LED pitch 30 mm

<sup>2)</sup> without tape

### Product line drawing



LFP200M -G3-BL-06, LFP200M -G3-RE-06, LFP200M -G3-GR-06, LFP200M -G3-YE-06

### Colors & materials

| Product description | Cover material | Body material |
|---------------------|----------------|---------------|
| LFP200M -G3-BL-06   | Silicone       | Silicone      |
| LFP200M -G3-RE-06   | Silicone       | Silicone      |
| LFP200M -G3-GR-06   | Silicone       | Silicone      |
| LFP200M -G3-YE-06   | Silicone       | Silicone      |

## Product family datasheet

### Temperatures & operating conditions

| Product description | Performance temp. acc. to IEC 62717 | Temperature range in operation at T <sub>c</sub> point | Ambient temperature range  | Temperature range at storage |
|---------------------|-------------------------------------|--|----------------------------|------------------------------|
| LFP200M -G3-BL-06   | 35 °C                               | -20...70 °C <sup>1)</sup>                              | -20...+50 °C <sup>2)</sup> | -40...+85 °C                 |
| LFP200M -G3-RE-06   | 35 °C                               | -20...70 °C <sup>1)</sup>                              | -20...+50 °C <sup>2)</sup> | -40...+85 °C                 |
| LFP200M -G3-GR-06   | 35 °C                               | -20...70 °C <sup>1)</sup>                              | -20...+50 °C <sup>2)</sup> | -40...+85 °C                 |
| LFP200M -G3-YE-06   | 35 °C                               | -20...70 °C <sup>1)</sup>                              | -20...+50 °C <sup>2)</sup> | -40...+85 °C                 |

<sup>1)</sup> At the T<sub>c</sub> point

<sup>2)</sup> Rated ambient temp. 25°C/Providing that temperature at T<sub>c</sub> point is below max value during operation/Temperature ramping for environmental testing acc. to IEC 62717, 1K/min

### Lifespan

| Product description | Rated lamp life time  | Nominal lamp life time |
|---------------------|-----------------------|------------------------|
| LFP200M -G3-BL-06   | 50000 h <sup>1)</sup> | 50000 h                |
| LFP200M -G3-RE-06   | 50000 h <sup>1)</sup> | 50000 h                |
| LFP200M -G3-GR-06   | 50000 h <sup>1)</sup> | 50000 h                |
| LFP200M -G3-YE-06   | 50000 h <sup>1)</sup> | 50000 h                |

<sup>1)</sup> L70/B50 at T<sub>c</sub> 40 °C

### Additional product data

| Product description | Predecessor EAN |
|---------------------|-----------------|
| LFP200M -G3-BL-06   | 4008321616913   |
| LFP200M -G3-RE-06   | 4008321616937   |
| LFP200M -G3-GR-06   | 4008321616951   |
| LFP200M -G3-YE-06   | 4008321616975   |

### Capabilities

| Product description | Lowest bending radius |
|---------------------|-----------------------|
| LFP200M -G3-BL-06   | 50 mm                 |
| LFP200M -G3-RE-06   | 50 mm                 |
| LFP200M -G3-GR-06   | 50 mm                 |
| LFP200M -G3-YE-06   | 50 mm                 |

## Product family datasheet

### Certificates & standards

| Product description | Energy consumption | Standards  | Type of protection |
|---------------------|--------------------|--|--------------------|
| LFP200M -G3-BL-06   | 27 kWh/1000h       | CE/EAC/UL Recognized component according UL 8750 | IP67               |
| LFP200M -G3-RE-06   | 40 kWh/1000h       | CE/EAC/UL Recognized component according UL 8750 | IP67               |
| LFP200M -G3-GR-06   | 27 kWh/1000h       | CE/EAC/UL Recognized component according UL 8750 | IP67               |
| LFP200M -G3-YE-06   | 40 kWh/1000h       | CE/EAC/UL Recognized component according UL 8750 | IP67               |

### Logistical data

| Product description | Commodity code |
|---------------------|----------------|
| LFP200M -G3-BL-06   | 940542319000   |
| LFP200M -G3-RE-06   | 940542319000   |
| LFP200M -G3-GR-06   | 940542319000   |
| LFP200M -G3-YE-06   | 940542319000   |

### Environmental information Information according Art. 33 of EU Regulation (EC) 1907/2006 (REACH)

| Product description | Date of Declaration | Primary Article Identifier | Declaration No. in SCIP database |
|---------------------|---------------------|----------------------------|----------------------------------|
| LFP200M -G3-BL-06   | 18-04-2022          | 4052899500525              | In work                          |
| LFP200M -G3-RE-06   | 18-04-2022          | 4052899500549              | In work                          |
| LFP200M -G3-GR-06   | 18-04-2022          | 4052899500563              | In work                          |
| LFP200M -G3-YE-06   | 18-04-2022          | 4052899500587              | In work                          |

### Equipment / Accessories

- Simplified connection with optional matching CONNECTsystem
- Quick installation with optional SLIM TRACK System
- Perfectly matched to OPTOTRONIC 24 V electronic control gears

### Application advice

For more detailed application information and graphics please see product datasheet.

## Product family datasheet

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### 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.

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### Sales and Technical Support

## Product family datasheet

Sales and Technical Support [www.osram.com](http://www.osram.com)

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### Download Data

| File  |  |
|---|--|
|    | Brochures<br>Light is freedom of design (EN)                       |
|    | Certificates<br>UL Certificate                                     |
|    | Declarations of conformity<br>Manufacturers Decalration LFP200M G3 |
|    | Declarations of conformity<br>Declaration of Conformity LFP200M G3 |
|    | Eulumdat<br>Eulumdat LFP200M-G3-BL-06                              |
|    | IES data<br>IES LFP200M-G3-BL-06                                   |
|   | Eulumdat<br>Eulumdat LFP200M-G3-RE-06                              |
|  | IES data<br>IES LFP200M-G3-RE-06                                   |
|  | Eulumdat<br>Eulumdat LFP200M-G3-GR-06                              |
|  | IES data<br>IES LFP200M-G3-GR-06                                   |
|  | Eulumdat<br>Eulumdat LFP200M-G3-YE-06                              |
|  | IES data<br>IES LFP200M-G3-YE-06                                   |



## Product family datasheet

### Ecodesign regulation information:

- This product is considered to be a "containing product" in the sense of Regulations (EU) 2019/2020 and (EU) 2019/2015. The contained light source is intended for use in applications requiring high-quality coloured light.
- Tolerances of the reported values, are according to LED Modules Performance standard IEC/EN 62717.
- In general, the replacement of the contained light sources without permanent damage to the product with the use of common available tools is possible in the final application when they can be dismantled from the installation environment and substituted for the necessary number of light sources restoring its full electrical/mechanical/thermal/optical functionality by means of a professional installer. In the contrary, and limited to the LINEARlight Flex Diffuse, LINEARlight Rigid Finesse, GINO LED Flex Diffuse and LUMINENT Milky product families, the contained light source is an integrated part of the containing product and its removal can only be done by causing a permanent damage to the containing product due to its tight mechanical, electrical, optical, thermal interaction and/or environmental protection with or from the containing product. Therefore, a replacement of the light source with the use of common available tools is not justified.
- Dismantling of light sources from containing products at end of life: Containing products with light sources which are scalable in length can be cut to the length of the contained light source and if applicable mechanically detached from protective and/or optical covers. Containing products shall be separated from building material and/or from other additional mounting accessories by means of a professional installer. Separate control gear and light sources must be disposed of at certified disposal companies in accordance with Directive 2012/19/EU (WEEE) in the EU and with Waste Electrical and Electronic Equipment (WEEE) Regulations 2013 in the UK. For this purpose, collection points for recycling centres and take-back systems (CRSO) are available from retailers or private disposal companies, which accept separate control gear and light sources free of charge. In this way, raw materials are conserved and materials are recycled.

### Logistical Data

| Product code  | Product description | Packaging unit (Pieces/Unit) | Dimensions (length x width x height) | Volume                | Gross weight |
|---------------|---------------------|------------------------------|--------------------------------------|-----------------------|--------------|
| 4052899500525 | LFP200M -G3-BL-06   | Shipping carton box<br>8     | 365 mm x 286 mm x 366 mm             | 38.21 dm <sup>3</sup> | 7338.00 g    |
| 4052899500549 | LFP200M -G3-RE-06   | Shipping carton box<br>8     | 365 mm x 286 mm x 366 mm             | 38.21 dm <sup>3</sup> | 7338.00 g    |
| 4052899500563 | LFP200M -G3-GR-06   | Shipping carton box<br>8     | 365 mm x 286 mm x 366 mm             | 38.21 dm <sup>3</sup> | 7338.00 g    |
| 4052899500587 | LFP200M -G3-YE-06   | Shipping carton box<br>8     | 365 mm x 286 mm x 366 mm             | 38.21 dm <sup>3</sup> | 7338.00 g    |

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.