LINEARlight FLEX Tunable White

LED modules for professional and industrial applications

Areas of application

- Cove lighting
- Shop lighting
- Offices

Product family benefits

- Simple mounting and connection
- Toolless connection with the optional CONNECTsystem
- Easy mounting on many smooth surfaces thanks to self-adhesive tape at the back
- High luminous flux
- Extraordinary design and high quality materials
- Pre-soldered wires (LF1200TW both ends)

Product family features

- Flexible and cuttable LED strip
- Luminous flux: up to 3,800 lm/m
- Adjustable color temp. via Tunable White: 2200...3500K, 2500...3500K, 2700...6500K

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
LF4000TW -G3-827/865-02 [1)]	24.0 V	DC	36.8 W	77.30 W	23…25 V	25 V
LF3000TW -G3-827/865-03 [1)]	24.0 V	DC	30.0 W	89.90 W	23…25 V	25 V
LF2000TW -G3-827/865-04 [1)]	24.0 V	DC	18.5 W	83.20 W	23…25 V	25 V
LF1200TW -G1-827.865-09 L2	24.0 V	DC	10.3 W	92.70 W	23…25 V	25 V
LF3000TWW G1-822.835-02 L1 [1)]	24.0 V	DC	33.3 W	69.90 W	23…25 V	25 V
LF3000TWW -G1-825.835-02 L1 [1)]	24.0 V	DC	31.0 W	65.10 W	23…25 V	25 V

[1)] See product remark

Photometrical data

Product description	Light color LED	Color temperature	Color rendering index Ra	Luminous flux per meter	Total useful luminous flux	Luminous efficacy
LF4000TW -G3-827/865-02 [1)]	Tunable White	2700…6500 K	>80	3800 lm	7980 lm	103 lm/W [2)]
LF3000TW -G3-827/865-03 [1)]	Tunable White	2700…6500 K	>80	3000 lm	9000 lm	100 lm/W [2)]
LF2000TW -G3-827/865-04 [1)]	Tunable White	2700…6500 K	>80	2000 lm	9000 lm	108 lm/W [2)]
LF1200TW -G1-827.865-09 L2	White	2700…6500 K	>80	1200 lm	10800 lm	117 lm/W
LF3000TWW G1-822.835-02 L1 [1)]	Tunable White	2200…3500 K	>80	3000 lm	6300 lm	90 lm/W
LF3000TWW -G1-825.835-02 L1 [1)]	Tunable White	2500…3500 K	>80	3000 lm	6300 lm	97 lm/W

Product description	Standard deviation of color matching	Light color (designation)
LF4000TW -G3-827/865-02 [1)]	≤4 sdcm	Dynamic White
LF3000TW -G3-827/865-03 [1)]	≤4 sdcm	Dynamic White
LF2000TW -G3-827/865-04 [1)]	≤4 sdcm	Dynamic White
LF1200TW -G1-827.865-09 L2	≤4 sdcm	Dynamic White
LF3000TWW G1-822.835-02 L1 [1)]	≤4 sdcm	Dynamic White

Product description	Standard deviation of color matching	Light color (designation)
LF3000TWW -G1-825.835-02 L1 [1)]	≤4 sdcm	Dynamic White

[1)] See product remark

[2)] For white color

Light technical data

Product description	LED pitch	Beam angle	Rated beam angle (half peak value)	Starting time	Warm-up time (60 %)
LF4000TW -G3-827/865-02 [1)]	12.5 mm	120 °	120.00 °	< 0.5 s	0.00 s
LF3000TW -G3-827/865-03 [1)]	12.5 mm	120 °	120.00 °	< 0.5 s	0.00 s
LF2000TW -G3-827/865-04 [1)]	12.5 mm	120 °	120.00 °	< 0.5 s	0.00 s
LF1200TW -G1-827.865-09 L2	12.5 mm	120 °	120.00 °	< 0.5 s	< 0.50 s
LF3000TWW G1-822.835-02 L1 [1)]	12.5 mm	120 °	120.00 °	< 0.5 s	0.00 s
LF3000TWW -G1-825.835-02 L1 [1)]	12.5 mm	120 °	120.00 °	< 0.5 s	0.00 s

[1)] See product remark

LED module information

Product description	Number of LEDs per meter	Number of LEDs per smallest unit
LF4000TW -G3-827/865-02 [1)]	160	12
LF3000TW -G3-827/865-03 [1)]	160	12
LF2000TW -G3-827/865-04 [1)]	160	12
LF1200TW -G1-827.865-09 L2	160	12
LF3000TWW G1-822.835-02 L1 [1)]	160	12
LF3000TWW -G1-825.835-02 L1 [1)]	160	12

[1)] See product remark

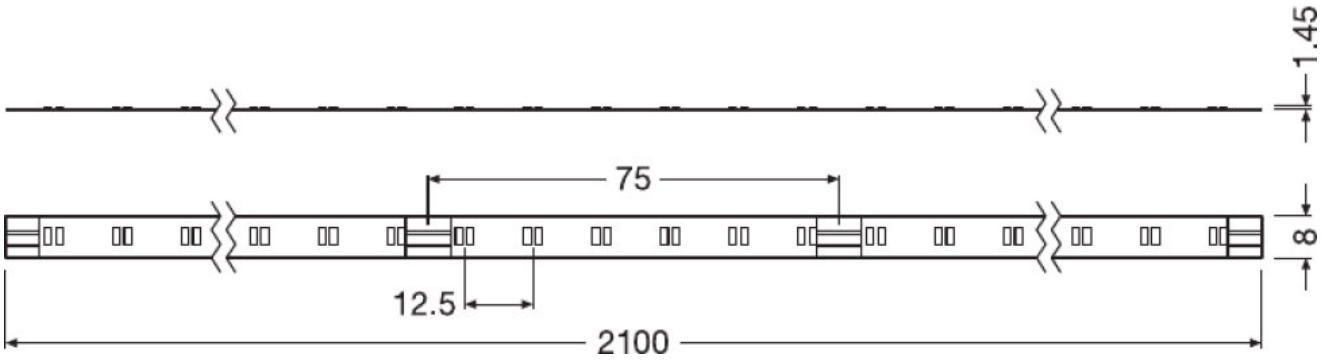
Dimensions & weight

Product description	Length	Length – smallest unit	Width	Height	Product weight
LF4000TW -G3-827/865-02 [1)]	2100 mm	75.0 mm	8.0 mm	1.45 mm	25.00 g
LF3000TW -G3-827/865-03 [1)]	3000 mm	75.0 mm	8.0 mm	1.45 mm	36.00 g
LF2000TW -G3-827/865-04 [1)]	4500 mm	75.0 mm	8.0 mm	1.45 mm	53.00 g
LF1200TW -G1-827.865-09 L2	9000 mm	75.0 mm	8.00 mm	1.45 mm	116.00 g
LF3000TWW G1-822.835-02 L1 [1)]	2100 mm	75.0 mm	8.0 mm	1.45 mm	58.00 g
LF3000TWW -G1-825.835-02 L1 [1)]	2100 mm	75.0 mm	8.0 mm	1.45 mm	58.00 g

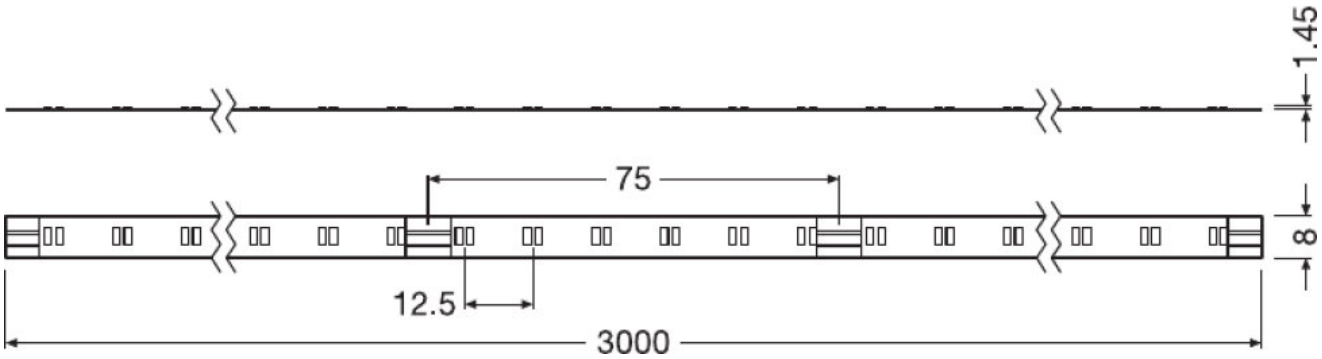
Product description	Cable length
LF4000TW -G3-827/865-02 [1)]	
LF3000TW -G3-827/865-03 [1)]	
LF2000TW -G3-827/865-04 [1)]	
LF1200TW -G1-827.865-09 L2	500.0 mm
LF3000TWW G1-822.835-02 L1 [1)]	500.0 mm
LF3000TWW -G1-825.835-02 L1 [1)]	500.0 mm

[1)] See product remark

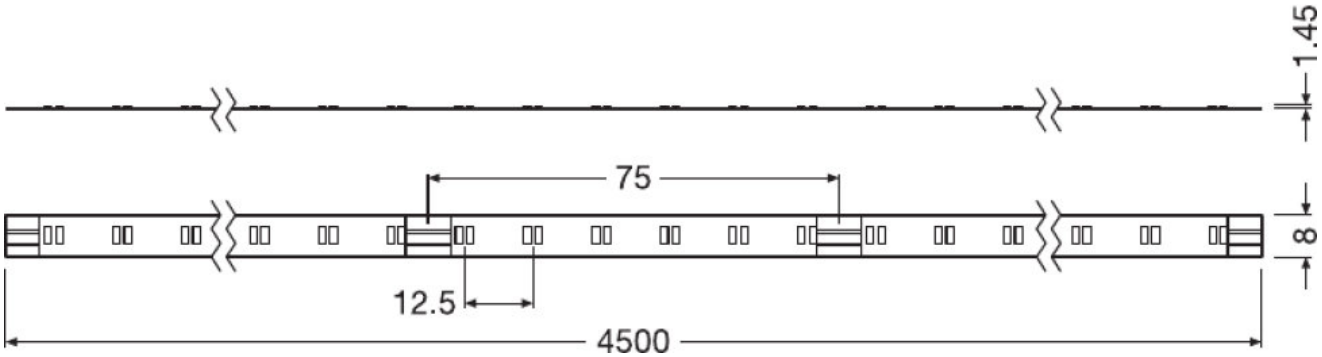
Product line drawing



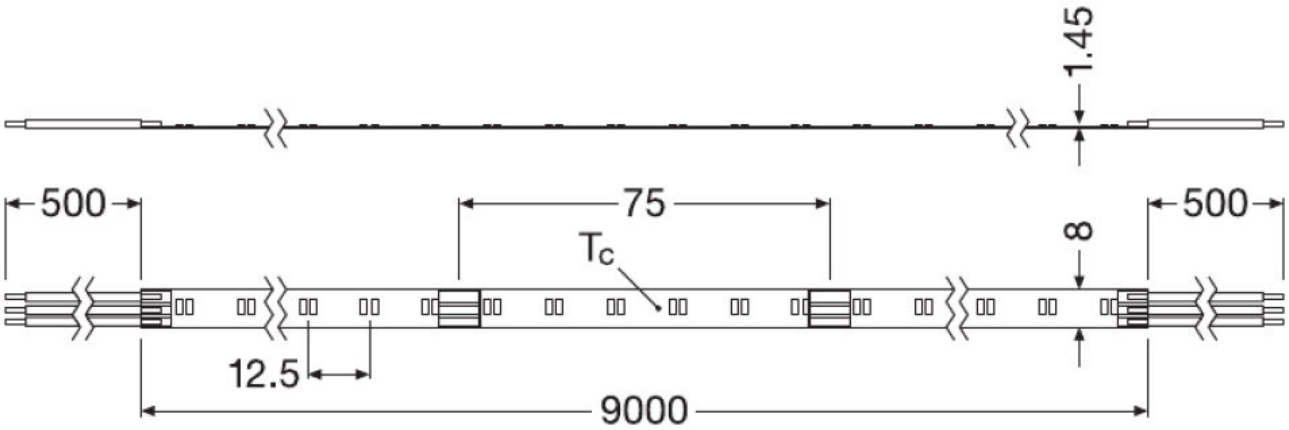
LF4000TW -G3-827/865-02, LF3000TWW G1-822.835-02 L1, LF3000TWW -G1-825.835-02 L1



LF3000TW -G3-827/865-03



LF2000TW -G3-827/865-04



LF1200TW -G1-827.865-09 L2

Temperatures & operating conditions

Product description	Performance temp. acc. to IEC 62717	Temperature range in operation at Tc point	Ambient temperature range	Temperature range at storage
LF4000TW -G3-827/865-02 [1]	75 °C	-20...85 °C [2]	-20...+50 °C [3]	-40...85 °C
LF3000TW -G3-827/865-03 [1]	60 °C	-20...85 °C [2]	-20...+50 °C [3]	-40...85 °C
LF2000TW -G3-827/865-04 [1]	50 °C	-20...85 °C [2]	-20...+50 °C [3]	-40...85 °C
LF1200TW -G1-827.865-09 L2	40 °C	-20...85 °C [2]	-20...+50 °C [3]	-40...85 °C
LF3000TWW G1-822.835-02 L1 [1]	65 °C	-20...85 °C [2]	-20...+50 °C [3]	-40...85 °C
LF3000TWW -G1-825.835-02 L1 [1]	65 °C	-20...85 °C [2]	-20...+50 °C [3]	-40...85 °C

[1] See product remark

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

[3] 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

Lifespan

Product description	Rated lamp life time	Nominal lamp life time	Lumen main. fact. at end of nom. life time	Number of switching cycles
LF4000TW -G3-827/865-02 [1]	60000 h	60000 h	0.70	≥ 15000
LF3000TW -G3-827/865-03 [1]	60000 h	60000 h	0.70	≥ 15000
LF2000TW -G3-827/865-04 [1]	60000 h	60000 h	0.70	≥ 15000
LF1200TW -G1-827.865-09 L2	60000 h	60000 h	0.70	30000
LF3000TWW G1-822.835-02 L1 [1]	60000 h	60000 h	0.70	≥ 15000
LF3000TWW -G1-825.835-02 L1 [1]	60000 h	60000 h	0.70	≥ 15000

[1] See product remark

Capabilities

Product description	Dimmable	Lowest bending radius	Self-adhesive
LF4000TW -G3-827/865-02 [1]	Yes	20 mm	Yes
LF3000TW -G3-827/865-03 [1]	Yes	20 mm	Yes
LF2000TW -G3-827/865-04 [1]	Yes	20 mm	Yes
LF1200TW -G1-827.865-09 L2	Yes	20 mm	Yes
LF3000TWW G1-822.835-02 L1 [1]	Yes	20 mm	Yes
LF3000TWW -G1-825.835-02 L1 [1]	Yes	20 mm	Yes

Product description	With connection set	With end piece
LF4000TW -G3-827/865-02 [1]	Yes	No
LF3000TW -G3-827/865-03 [1]	Yes	No
LF2000TW -G3-827/865-04 [1]	Yes	No
LF1200TW -G1-827.865-09 L2	No	No
LF3000TWW G1-822.835-02 L1 [1]	No	No
LF3000TWW -G1-825.835-02 L1 [1]	No	No

[1] See product remark

Certificates & standards

Product description	Energy efficiency class	Energy consumption	Standards
LF4000TW -G3-827/865-02 [1]	A+ [2]	85 kWh/1000h	CE; ENEC 10 VDE/EAC/UL Recognized component according UL 8750
LF3000TW -G3-827/865-03 [1]	A+ [2]	99 kWh/1000h	CE; ENEC 10 VDE/EAC/UL Recognized component according UL 8750
LF2000TW -G3-827/865-04 [1]	A+ [2]	92 kWh/1000h	CE; ENEC 10 VDE/EAC/UL Recognized component according UL 8750
LF1200TW -G1-827.865-09 L2	A+	102 kWh/1000h	CE; ENEC 10 VDE/EAC/UL/CSA Recognized
LF3000TWW G1-822.835-02 L1 [1]	A+ [2]	77 kWh/1000h	CE; ENEC 10 VDE/EAC/UL Recognized component according UL 8750
LF3000TWW -G1-825.835-02 L1 [1]	A+ [2]	72 kWh/1000h	CE/EAC

Product description	Type of protection
LF4000TW -G3-827/865-02 [1]	IP00
LF3000TW -G3-827/865-03 [1]	IP00
LF2000TW -G3-827/865-04 [1]	IP00
LF1200TW -G1-827.865-09 L2	IP00
LF3000TWW G1-822.835-02 L1 [1]	IP00
LF3000TWW -G1-825.835-02 L1 [1]	IP00

[1] See product remark

[2] Applicable to nearest length value to 50 cm (EN 62717 cl. 6.1)

Logistical data

Product description	Commodity code
LF4000TW -G3-827/865-02 [1]	940540399000
LF3000TW -G3-827/865-03 [1]	940540399000
LF2000TW -G3-827/865-04 [1]	940540399000
LF1200TW -G1-827.865-09 L2	940540399000
LF3000TWW G1-822.835-02 L1 [1]	940540399000
LF3000TWW -G1-825.835-02 L1 [1]	940540399000

[1] See product remark

Product remark

Modules perfectly matched to OSRAM OPTOTRONIC LED drivers (see relevant table)/For current photometric data and important safety, installation and application information (see www.osram.com/led-systems)./All the technical parameters apply to the entire module. In view of the complex manufacturing process for light emitting diodes, the typical values given above for the technical LED parameters are merely statistical values that do not necessarily correspond to the actual technical parameters of an individual product; individual products may vary from the typical values/Pre-soldered wires 500 mm long on one end/In development, data preliminary

Equipment / Accessories

- Simplified connection with optional matching CONNECTsystem
- Quick installation with optional SLIM TRACK System
- Perfectly matched with OPTOTRONIC OTi DALI 50/220...240/24 TW
- Perfectly matched with OPTOTRONIC OTi DALI 80/220...240/24 TW

Application advice

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

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 (H2S) causes accelerated corrosion which leads to shortened lifetime or premature failure. Sources of H2S may be rubber, foam rubber, soft-foam tapes, rubber-based sealing, natural sources (e.g. sulfur springs), etc. To avoid H2S 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 reduces the expected lifetime or even destroy the LED module. The temperature of the LED module must be measured at the Tc-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 Tc-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.

Sales and Technical Support

Sales and Technical Support www.osram.com

Download Data

	File
	User instruction LINEARlight FLEX POWER TW
	Product Datasheet 727335_LINEARLIGHT FLEX POWER TUNABLE WHITE TECHNICAL DATASHEET
	Product Datasheet LINEARlight FLEX TW & TWW Specification Sheet (EN)
	Brochures Light is freedom of design (EN)
	Certificates EAC Certificate
	Certificates UL Certificate
	Certificates ENEC10_VDE Certificate
	Certificates ENEC+_VDE Certificate
	Certificates CB TEST CERTIFICATE DE1-57844
	Declarations of conformity Declaration of conformity
	Declarations of conformity Manufacturer declaration
	Eulumdat 727228_LF4000TW-G3-827-865-02_LDT
	Eulumdat Eulumdat LF4000TW-G3-827-865-02
	IES data 727227_LF4000TW-G3-827-865-02_IES
	IES data 727226_LF4000TW-G3-827-865-02_IES
	IES data IES data LF4000TW-G3-827-865
	Eulumdat 727215_LF3000TW-G3-827-865-03_LDT
	Eulumdat Eulumdat LF3000TW-G3-827-865-03
	IES data 727214_LF3000TW-G3-827-865-03_IES
	IES data IES data LF3000TW-G3-827-865

	Eulumdat 727189_LF2000TW-G3-827-865-04_LDT
	Eulumdat Eulumdat LF2000TW-G3-827-865-04
	IES data 727188_LF2000TW-G3-827-865-04_IES
	IES data IES data LF2000TW-G3-827-865
	User instruction LINEARlight FLEX Tunable White
	User instruction LINEARlight FLEX POWER
	Certificates CB TEST CERTIFICATE DE- 60834
	Declarations of conformity EU declaration of conformity
	Declarations of conformity Manufacturers declaration of conformity - 3632536
	Eulumdat Eulumdat LF3000TWW-G1-822.835-02
	IES data IES data LF3000TWW-G1-822-835
	Eulumdat Eulumdat LF3000TWW-G1-825.835-02
	IES data IES data LF3000TWW-G1-825-835

Logistical Data

Product code	Product description	Packaging unit (Pieces/Unit)	Dimensions (length x width x height)	Volume	Gross weight
4052899953260	LF4000TW -G3-827/865-02	Shipping carton box 8	241 mm x 195 mm x 205 mm	9.63 dm^3	1133.00 g
4052899953277	LF3000TW -G3-827/865-03	Shipping carton box 8	241 mm x 195 mm x 205 mm	9.63 dm^3	1221.00 g
4052899953284	LF2000TW -G3-827/865-04	Shipping carton box 8	241 mm x 195 mm x 205 mm	9.63 dm^3	1357.00 g
4062172032667	LF1200TW -G1-827.865-09 L2	Shipping carton box 8	241 mm x 195 mm x 205 mm	9.63 dm^3	1861.00 g
4052899563339	LF3000TWW G1-822.835-02 L1	Shipping carton box 8	241 mm x 195 mm x 205 mm	9.63 dm^3	1397.00 g
4052899563353	LF3000TWW -G1-825.835-02 L1	Shipping carton box 8	241 mm x 195 mm x 205 mm	9.63 dm^3	1397.00 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.

Accessories Optional

Product description	Accessory name	Accessory code
LF4000TW -G3-827/865-02	LF -WIRE-30 FLEX SC	4008321875587
LF4000TW -G3-827/865-02	LF -WIRE-150 FLEX SC	4008321875563
LF4000TW -G3-827/865-02	FX -SC08-G2-CT4PJ	4052899464858
LF4000TW -G3-827/865-02	FX -SC08-G1-FW4P-LIN-0300	4052899469259
LF4000TW -G3-827/865-02	FX -SC08-G2-CT3PFE-0500HF	4052899483026
LF4000TW -G3-827/865-02	FX -SC08-G2-CT3PF-0500HF	4052899482999
LF3000TW -G3-827/865-03	LF -WIRE-30 FLEX SC	4008321875587
LF3000TW -G3-827/865-03	LF -WIRE-150 FLEX SC	4008321875563
LF3000TW -G3-827/865-03	FX -SC08-G2-CT4PJ	4052899464858
LF3000TW -G3-827/865-03	FX -SC08-G1-FW4P-LIN-0300	4052899469259
LF3000TW -G3-827/865-03	FX -SC08-G2-CT3PFE-0500HF	4052899483026
LF3000TW -G3-827/865-03	FX -SC08-G2-CT3PF-0500HF	4052899482999
LF2000TW -G3-827/865-04	LF -WIRE-30 FLEX SC	4008321875587
LF2000TW -G3-827/865-04	LF -WIRE-150 FLEX SC	4008321875563
LF2000TW -G3-827/865-04	FX -SC08-G2-CT4PJ	4052899464858
LF2000TW -G3-827/865-04	FX -SC08-G1-FW4P-LIN-0300	4052899469259
LF2000TW -G3-827/865-04	FX -SC08-G2-CT3PFE-0500HF	4052899483026
LF2000TW -G3-827/865-04	FX -SC08-G2-CT3PF-0500HF	4052899482999

Disclaimer

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