

LED Line FLEX SMD ADVANCED

CONSTANT-VOLTAGE 24 V



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LED Line Flex SMD Advanced is a flexible LED stripe equipped with high-quality LEDs. Even the most complex structures can be illuminated thanks to the use of an extremely pliable foil.

The LED stripe can be separated into segments of 100 mm without loss of function. Installation is achieved via double-sided adhesive tape affixed to the rear of the PCB.

Typical Applications

- Illumination of complex structures
- Marking paths, stairs, etc.
- Furniture lighting
- Light advertising
- Entertainment, shop design
- Architectural illumination

LED Line Flex SMD Advanced

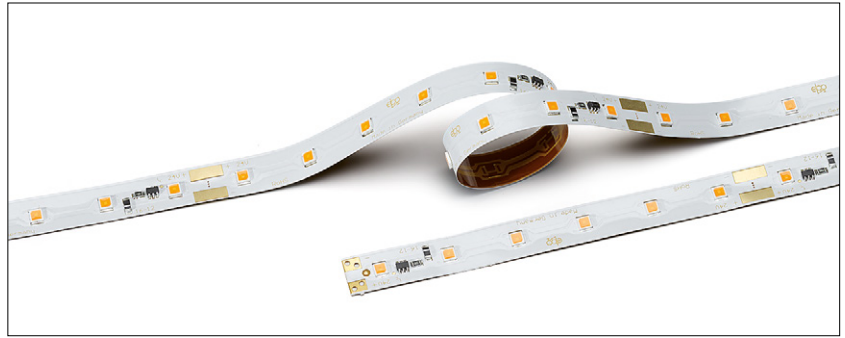
- **EXTREMELY FLEXIBLE SMD LINE MODULE WITH HIGH QUALITY LEDs**
- **AVAILABLE IN DIFFERENT WHITE TONES**
- **LOW HEAT DEVELOPMENT**
- **SELF-ADHESIVE REAR PANEL**
- **INTEGRATED ESD PROTECTION DIODE: UP TO 2000 V**
- **EXPECTED LIFETIME: 50,000 H (L90/B10)**
- **MADE IN GERMANY**



LED Line Flex SMD Advanced

Technical Notes

- Dimensions of the entire LED Line Flex SMD Advanced (LxW)
1200 lm/m: 4000 x 10 mm
900 lm/m and 450 lm/m: 5000 x 10 mm
- 1200 lm/m: with 240 LEDs divisible in 40 single-steps (100 mm à 6 LEDs)
- 900 lm/m and 450 lm/m: with 300 LEDs divisible in 50 single-steps (100 mm à 6 LEDs)
- Wide beam angle: 120°
- Voltage supply: 24 V DC ± 5 %
- Soldered wires, on one side, length: 250 mm
- ESD protection: up to 2000 V
- Degree of protection: IP00 (LED module must be protected against moisture)



Electrical Characteristics

Luminous flux per meter lm/m	Meter per roll m	Number of LEDs		Current per meter at $I_p = 25\text{ °C}$		Power per meter at $I_p = 25\text{ °C}$	
		total	per 0.1 m	mA/m	at $I_p = 50\text{ °C}$ mA/m	W/m	at $I_p = 50\text{ °C}$ W/m
450	5	300	6	183	172	4.4	4.1
900	5	300	6	336	315	8.0	7.6
1200	4	240	6	470	420	11.3	10.1

Nominal voltage: 24 V DC ± 5 % | Current and power tolerance: ±10 %

Maximum Ratings

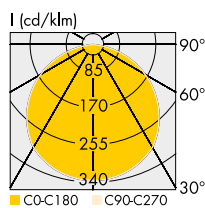
Exceeding the maximum ratings can lead to reduction of service life or destruction of the module.

Type	Voltage DC		Max. continuous length in operation m	Max. operation temperature range at t_c point °C	Ambient temperature range for operation		Storage temperature range	
	V min.	V max.			°C min.	°C max.	°C min.	°C max.
450 lm/m	22.8	25.2	10	+75	-20	+50	-20	+85
900 lm/m			6					
1200 lm/m			4					

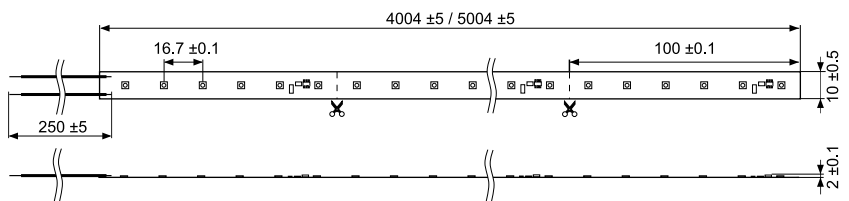
Operating Life

50,000 hrs. (Lumen maintenance: L90/B10 at $t_p/t_c = 50\text{ °C}$)

Light Distribution Curves



Mechanical Dimensions



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LED Line Flex SMD Advanced

Optical Characteristics

Type	Ref. No.	Colour	Correlated colour temperature* K	Typ. luminous flux (lm/m) and efficiency (lm/W)**				Beam angle °	Typ. CRI R _a
				at t _p = 25 °C		at t _p = 50 °C			
				lm/m	lm/W	lm/m	lm/W		
1200 lm/m									
FlexLED-4m-22K-4000lm	571184	warm white	2200	1060	94	915	91	120	> 80
FlexLED-4m-25K-4000lm	571189	warm white	2500	1100	98	958	94	120	> 80
FlexLED-4m-27K-4800lm	571185	warm white	2700	1320	117	1140	113	120	> 80
FlexLED-4m-30K-4800lm	571186	neutral white	3000	1340	120	1160	115	120	> 80
FlexLED-4m-35K-4800lm	571190	neutral white	3500	1350	119	1174	115	120	> 80
FlexLED-4m-40K-4800lm	571183	neutral white	4000	1400	125	1200	120	120	> 80
FlexLED-4m-50K-4800lm	571187	cool white	5000	1400	124	1180	118	120	> 80
FlexLED-4m-65K-4800lm	571188	cool white	6500	1430	127	1230	123	120	> 80
900 lm/m									
FlexLED-5m-30K-900lm/m	571223	neutral white	3000	906	114	824	109	120	> 80
FlexLED-5m-40K-900lm/m	571225	neutral white	4000	1025	129	954	126	120	> 80
450 lm/m									
FlexLED-5m-30K-450lm/m	571203	neutral white	3000	464	106	420	102	120	> 80
FlexLED-5m-40K-450lm/m	571205	neutral white	4000	544	124	496	120	120	> 80

* Colour tolerance: 3 MacAdam (CRI > 80) | ** Production tolerance of luminous flux and efficiency: ± 10 % | Min. CRI R_a: > 80
Further CCTs and CRI > 90 on request

Minimum order quantity: 15 pcs.

Feed-in connector

Feed in connector for power supply

Max. permissible current: 3 A

Number of strands: 2

(strand diameter: 0.34 mm²/AWG22)

Length: 250 mm

Rear adhesive tape

Ref. No.: 141578

PCB-PCB connector Flex to Flex

Material : PBT

Dimensions (LxWxH): 8x11.2x5 mm

Max. permissible current: 3 A

Ref. No.: 141579

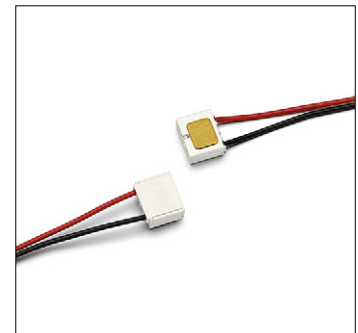
Attaching Connectors

Connectors can be used only once.

- Remove the protective foil from the underside of the LED Line Flex module.
- Taking care to ensure the connector contacts properly align with the contact surfaces of the LED Line Flex module.
- Then insert the LED Line Flex module in the connector until it will go no further.
- Press down the cap of the connector, which pierces the PCB and thus keeps the connector in place.

Releasing Connectors

To release the connector, use a screwdriver to lever up the sides of the cap. The connector will then be destroyed and cannot be used again.



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Assembly and Safety Information

- LED modules and all PCB components must not be subjected to undue mechanical stress.
- The LED Line Flex SMD Advanced must not be operated in rolled-up condition.
- The circuit path must not be damaged or interrupted.
- Operation only with power supply units that feature the following protection:
 - Short-circuit protection
 - Overload protection
 - Overheating protection
 - SELV (Safety Extra Low Voltage)
- The maximum output of the power supply must be observed.
- Please ensure standard ESD (electrostatic discharge) protection measures are employed when handling and installing LED modules. Electrostatic discharge can damage LEDs.
- The modules are not protected against dust or moisture. When LED modules are operated in unduly moist or dusty environments, care must be taken to ensure each module is built into a protective casing in compliance with the correct IP classification or provided with corrosion protection. Damage caused by moisture and/or corrosion will not be recognised as a material or manufacturing defect.
- LED Line Flex SMD Advanced is always modules can be carefully separated at 100 mm intervals using a pair of scissors (in the middle of the connection pads for wires, see drawing).
- Expected lifetime: 50,000 h (L90/B10) at $t_p = 50\text{ °C}$
- Each LED Line Flex SMD Advanced is backed by adhesive transfer tape (Tesafix 4965) for easy assembly. Please observe the manufacturer's technical data provided at www.tesa.com. Products equipped with adhesive transfer tape must only be applied to dry and clean surfaces that are free from grease, oil, silicone or other soiling. It is therefore recommended to clean the substrate with isopropyl alcohol (IPA). Please ensure a fullsurface bond over the entire contact area when sticking the module to the substrate.
- The following substances are regarded as critical for creating an adhesive bond:
 - Polyefins (polyethylene, polypropylene)
 - Rubber
 - Powder-coated materials
 - Silicone rubber
 - Teflon

In the interest of achieving an optimal adhesive bond, a temperature of approx. 20–30 °C should be ensured in dry rooms and on no account less than 10 °C during installation. In addition, a high degree of pressure should be exerted on the PCB (not on the SMD components). As a rule, the higher final bonding strength will be attained after approx. 48 hours.

- Owing to the varying application options and different types of surface as well as ambient conditions, VS accepts no liability for the quality of the adhesive bond achieved when mounting these products. Prior to sticking a VS product care must be taken to check whether the material in question is actually suitable for the intended purpose under consideration of all possible application-relevant influences. Supplementary holders must be used if necessary. The LED Line Flex SMD Advanced module may be mounted only on normal or non-flammable surfaces.
- The product must be stored no longer than 12 months (in packed condition) at approx. 20 °C and up to 50 % relative humidity in order to ensure optimal bonding.
- The pre-attached supply cable strands can be desoldered at your own risk and other supply cables can be soldered onto the respective spots. These supply cables must display a maximum current-carrying capacity of 3 A within the permissible operating temperature range during rated operation. The soldering temperature must not exceed 260 °C, nor the soldering time exceed a maximum of 10 seconds. The length of the supply cables must be dimensioned to ensure that at least 22.8 V constant voltage is applied at the module despite the drop in voltage caused by the electrical resistance of the cable.
- LED Line Flex modules are suitable only for mounting on rigid and solid surfaces. The module must not be mounted on flexible substrates as the LED module would be damaged when the substrate bends.
- During installation the bending radius must not fall below 25 mm. On sharp edges the LED Line Flex SMD Advanced may only be bent at a position where no electronic components are mounted. The module can be damaged if it is bent in a crosswise direction.
- Operating LED modules in the presence of certain chemical substances or in chemically enriched (aggressive) environments can impair module functionality or even cause total module failure. Detailed information can be found in our "Chemical Incompatibility" PDF on our website www.vossloh-schwabe.com
- In accordance with the IEC 62471:2006 standard (Photobiological safety of lamps and lamp systems), the LED Line Flex SMD Advanced IPO0 modules belong to risk group 1.

Product Guarantee

- 5 years
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage (www.vossloh-schwabe.com). We will be happy to send you these conditions upon request.

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