

LED LINE ALUFIX SMD

LED LIGHTING MODULES
ONTO ALUMINIUM PROFILE
WITH COVER



LED LINE ALUFIX SMD

Lighting modules with holder and cover

LED Line AluFix SMD consists of an energy-efficient linear SMD module, an aluminium holder and a clear cover or, alternatively, optics.

The module was designed for integration into indoor luminaires providing direct or indirect light.

Typical Applications

- Office and school lighting
- Retail lighting
- Industrial lighting
- For replacement of T5 and T8 lamps

LED Line AluFix SMD

- **SLIM AND ROBUST DESIGN**
- **LONG SERVICE LIFETIME: 60,000 H (L80/B10)**
- **HIGHLY EFFICIENT: UP TO 180 LM/W
AT $T_p = 50\text{ }^\circ\text{C}$**
- **COLOUR TOLERANCES: 3 STEP MACADAM**
- **5 LENGTHS AVAILABLE: 305 MM / 586 MM /
867 MM / 1148 MM / 1429 MM**

LED Line AluFix SMD – PCB

Technical Notes

- LED built-in module for integration into luminaires
- Dimensions
WU-M-499: 279.6x15 mm
WU-M-500: 560.6x15 mm
- Driving current: 350 mA / 500 mA / 700 mA
- On-board push-in connector



Electrical Characteristics

at $t_p = 50\text{ °C}$

Type	No. of SMDs	Voltage DC (V)									Temperature coefficient mV/K	Power consumption (W)								
		350 mA			500 mA			700 mA				350 mA			500 mA			700 mA		
		min.	typ.	max.	min.	typ.	max.	min.	typ.	max.		min.	typ.	max.	min.	typ.	max.	min.	typ.	max.
WU-M-499-G	30	13.0	13.9	15.5	13.5	14.4	16.0	14.2	15.1	16.7	-16.63	4.5	4.9	5.4	6.8	7.2	8.0	9.9	10.6	11.7
WU-M-500-G	60	26.0	27.8	31.0	27.1	28.9	32.1	28.3	30.1	33.3	-33.26	9.1	9.7	10.8	13.6	14.5	16.1	19.8	21.1	23.3

Use of external LED constant current driver with required.

Maximum Ratings

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

Type	Operating current mA	Operation temperature range at t_c point °C min. / °C max.		Storage temperature range °C min. / °C max.		Max. allowed repetitive peak current (mA)
All types	350	-20	+75	-20	+85	1270
	500					1200
	700					1110

Optical Characteristics

at $t_p = 50\text{ °C}$; without secondary optics

The specified values apply only to the version of the LED module without a cover.

The following efficiency levels can be achieved when using a cover: clear (97%), diffuse (90%)

Type	Ref. No.	Colour	Correlated colour temperature* K	Luminous flux (lm) and efficiency (lm/W) at									CRI R_a	Beam angle °	Photo-metric code	
				350 mA			500 mA			700 mA						
				min.	typ.	typ.	min.	typ.	typ.	min.	typ.	typ.	min.	typ.		
LED Line SMD Slim – PCB – 280 mm																
WU-M-499-G-830	560147	warm white	3000	755	835	171	1055	1170	162	1445	1600	152	80	85	120	830/349
WU-M-499-G-840	560148	neutral white	4000	785	875	180	1100	1230	170	1505	1680	159	80	85	120	840/349
LED Line SMD Slim – PCB – 560 mm																
WU-M-500-G-830	560152	warm white	3000	1505	1665	171	2115	2340	162	2890	3200	152	80	85	120	830/349
WU-M-500-G-840	560153	neutral white	4000	1570	1750	180	2200	2455	170	3010	3360	159	80	85	120	840/349

* Measurement tolerance: $\pm 7\%$ | 5000 K and 6500 K on request

Minimum order quantity (packing unit): 75 pcs.

Operating Life

L80/B10

in hours at measured temperature at t_p point

	350 mA			500 mA			700 mA		
	40 °C	50 °C	75 °C	40 °C	50 °C	75 °C	40 °C	50 °C	75 °C
WU-M-499/500	> 60,000	> 60,000	> 60,000	> 60,000	> 60,000	58,000	> 60,000	> 60,000	48,000

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LED Line AluFix SMD – Cover

Lighting modules with holder and cover

LED Line AluFix SMD consists of an energy-efficient linear SMD module, an aluminium holder and a clear or diffuse cover. The module was designed for integration into indoor luminaires providing direct or indirect light.



The light module is available with up to five pre-wired SMD modules in lengths of 305 to 1,429 mm and is thus an ideal component for LED lighting strips.

The robust aluminium holder serves to optimise thermal management and is easy to attach using M3 screws. The clear or diffuse cover protects LED modules from environmental factors.

The diffuse cover reduces glare and distributes light in a similar manner to a fluorescent lamp.

Technical notes

Allowed operating temperature at t_c point:
-20 to 75 °C

Use of external LED constant-current drivers required: for driver with $U_{OUT} < 150$ V DC

Efficiency up to 180 lm/W

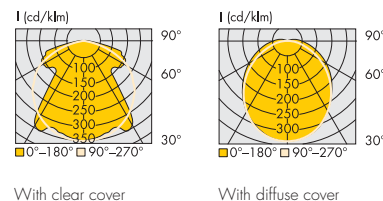
Colour rendering index Ra: min. 80

Colour accuracy: 3 SDCM;

Lumen maintenance L80/B10

> 60,000 hrs. (I_f 700 mA, $t_p = 50$ °C)

Further shapes and optics on request.



Typical applications

- Office and school lighting
- Retail lighting
- Industrial lighting
- For replacement of T5 and T8 lamps

Optical characteristics

at $t_p = 50$ °C | The following efficiency levels can be achieved when using a cover: clear (97%), diffuse (90%)

Type	Number of LEDs pcs.	Colour	Correlated colour temperature K	Typ. luminous flux* and efficiency, typ. voltage ($U_{yp.}$) and power consumption (P_{el})					
				350 mA		500 mA		700 mA	
				lm	lm/W	lm	lm/W	lm	lm/W
305 mm (1 SMD module 280 mm)				$P_{el} = 4.9$ W $U_{yp.} = 13.9$ V		$P_{el} = 7.2$ W $U_{yp.} = 14.4$ V		$P_{el} = 10.6$ W $U_{yp.} = 15.1$ V	
AluFixSMD/305/30	1x30	warm white	3000	835	171	1170	162	1600	152
AluFixSMD/305/40	1x30	neutral white	4000	875	180	1230	170	1680	159
586 mm (1 SMD module 560 mm)				$P_{el} = 9.7$ W $U_{yp.} = 27.8$ V		$P_{el} = 14.5$ W $U_{yp.} = 28.9$ V		$P_{el} = 21.1$ W $U_{yp.} = 30.1$ V	
AluFixSMD/586/30	1x60	warm white	3000	1665	171	2340	162	3200	152
AluFixSMD/586/40	1x60	neutral white	4000	1750	180	2455	170	3360	159
867 mm (2 wired SMD modules: 1x560 mm + 1x280 mm per aluminium profile)				$P_{el} = 14.6$ W $U_{yp.} = 41.7$ V		$P_{el} = 21.7$ W $U_{yp.} = 43.3$ V		$P_{el} = 31.7$ W $U_{yp.} = 45.2$ V	
AluFixSMD/867/30	1x30+1x60	warm white	3000	2500	171	3510	162	4120	152
AluFixSMD/867/40	1x30+1x60	neutral white	4000	2626	180	3685	170	4485	159
1148 mm (2 wired SMD modules: 2x560 mm per aluminium profile)				$P_{el} = 19.4$ W $U_{yp.} = 55.6$ V		$P_{el} = 29$ W $U_{yp.} = 57.8$ V		$P_{el} = 42.2$ W $U_{yp.} = 60.2$ V	
AluFixSMD/1148/30	2x60	warm white	3000	3300	171	4680	162	6400	152
AluFixSMD/1148/40	2x60	neutral white	4000	3500	180	4910	170	6720	159
1429 mm (3 wired SMD modules: 2x560 mm + 1x280 mm per aluminium profile)				$P_{el} = 24.3$ W $U_{yp.} = 69.5$ V		$P_{el} = 36.2$ W $U_{yp.} = 72.2$ V		$P_{el} = 52.8$ W $U_{yp.} = 75.3$ V	
AluFixSMD/1429/30	1x30+2x60	warm white	3000	4135	171	5850	162	8000	152
AluFixSMD/1429/40	1x30+2x60	neutral white	4000	4375	180	6140	170	8400	159

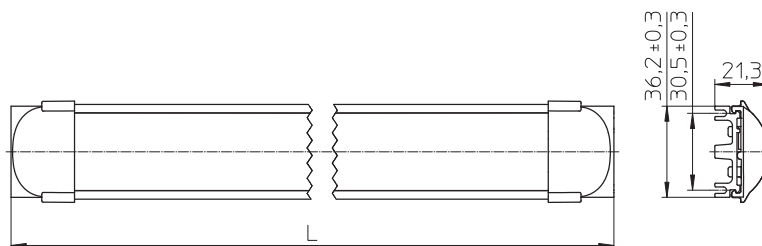
* Measurement tolerance of luminous flux: $\pm 7\%$

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LED Line AluFix SMD – Cover

Technical notes LED Line AluFix cover

Material: Aluminium profile and PMMA cover
 Rear connection leads: Cu tinned, single-core
 0.32 mm² (AWG22), PVC-insulation, red and black,
 notched lead ends, lead length: L + 80 mm
 Degree of protection: IP40
 Rear slots for screws M3
 Tightening torque: 0.5 Nm



Type	Dimensions (LxWxH) in mm			Packaging unit pcs.	Weight g
	L	W	H		
89001	305	40.2	21.3	15	171
89002	586	40.2	21.3	15	330
89003	867	40.2	21.3	15	495
89004	1148	40.2	21.3	15	650
89005	1429	40.2	21.3	15	815



Reference numbers – LED Line AluFix SMD – Cover – with linear SMD module 280

Type / Total length Cover	89001 / 305 mm		89002 / 586 mm		89003 / 867 mm		89004 / 1148 mm		89005 / 1429 mm	
	Clear	Diffuse	Clear	Diffuse	Clear	Diffuse	Clear	Diffuse	Clear	Diffuse
SMD56/30/280	561307	561311	561315	561319	561323	561327	561331	561335	561339	561343
SMD56/40/280	561308	561312	561316	561320	561324	561328	561332	561336	561340	561344

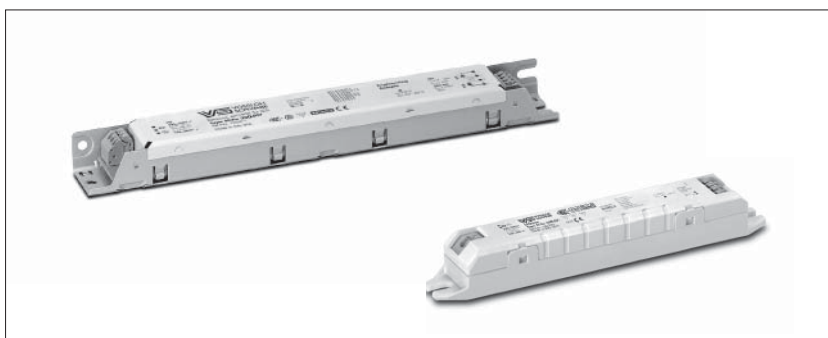
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LED Drivers

Linear LED constant current drivers

350 mA/40 W (2x20 W) and
500/700 mA /80 W (2x40 W)

Details under www.vossloh-schwabe.com



Assembly and Safety Information

Installation must be carried out under observation of the relevant regulations and standards. The LED Line AluFix are designed for operation within a casing or luminaire. Installation must be carried out in a voltage-free state (i.e. disconnection from the mains). The following advice must be observed; non-observance can result in the destruction of the LED fixing units, fire and/or other hazards.

- ESD (electrostatic discharge) protection measures must be observed when handling and installing the LED Line AluFix. See VS's application notes on ESD protection.
- Adequate anti-static electricity measures, including the use of conductive shoes, ionizers, work bench grounding, wrist straps, flooring and stools should be used.
- LED fixing units must not be subjected to any undue mechanical stress, e. g.:
 - do not treat as bulk cargo
- Safe operation only possible by the use of external constant current sources (I_{max} . see table "Electrical Characteristics").
- Safety regulations acc. to EN 60598 (or further standards) has to be observed if the maximum output voltage exceed the permitted touchable value.
Max. output voltage mustn't exceed 150 V DC.
- Power supply units must be used for operation, in which the following protective measures are ensured:
 - Short-circuit protection
 - Overload protection
 - Overheating protection
- Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- Max. number of SMD Line modules connected in series: 5
- The following points must be observed when connecting LED fixing units in parallel:
 - All LED strings that are wired in parallel must contain the same number of LED Line AluFix (symmetrical loading).
 - Owing to differing forward biases, there can be a difference of up to 10% in brightness between modules connected in parallel.
 - All modules that are wired in parallel must be thermally connected (same temperatures at all LED Line AluFix).

- To ensure problem-free operation, the specified maximum temperature at the t_c point (see "Operating Life") must be observed (and measured in accordance with EN 60598-1). To satisfy this point, it may be necessary to put measures in place to ensure any heat is dissipated from the PCB to the environment.
- M3 screws are required to fix the aluminium profile for the screw fitting. A torque of 0.5 Nm is recommended.
- In the event of outdoor applications or applications in damp locations, care must be taken to protect LED Line AluFix against humidity, splashes and jets of water. Any corrosion damage resulting from humidity or contact with condensation will not be recognised as a defect or manufacturing fault. Linear LED Line AluFix with a cover feature an IP40 degree of protection. Depending on the type of application, further protection must be ensured to prevent dust and foreign bodies from entering.
- For optimal load of used constant current driver the modules can be connected in series. The quantity of LED modules is limited by the sum of forward voltage and the capacity of used constant current driver. Safety regulations acc. to EN 60598 has to be observed if the sum of forward voltage exceed the permitted touchable value.
- The photobiological safety of the LED Line AluFix must be classified into risk groups in accordance with EN 62471: 2008.
 - general lighting: exempt group
 - other applications: risk group 1

Further detailed safety and installation instructions on VS LED modules and LED drivers can be found in the product data sheets at www.vossloh-schwabe.com.

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