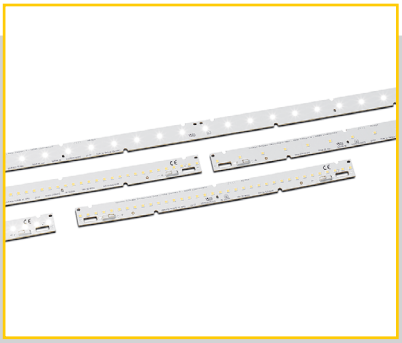
LED LINE SMD W2 EASY GEN. 2 L28/56



LED LINE SMD W2 EASY GEN. 2 L28/56

WU-M-700, WU-M-701

Typical Applications

Built-in luminaires/general illumination

- Office lighting
- Retail, corridor and shelf lighting
- T5/T8 replacement as built-in module
- Industry lighting

LED Line SMD W2 Easy Gen. 2 L28/56

- **LONG SERVICE LIFE TIME: 90,000 H (L80, B10)**
- **HIGHLY EFFICIENT: UP TO 187 LM/W AT T_P = 50 °C**
- **2 LENGTHS AVAILABLE: 280 / 560 MM**
- **ENEC APPROVED**

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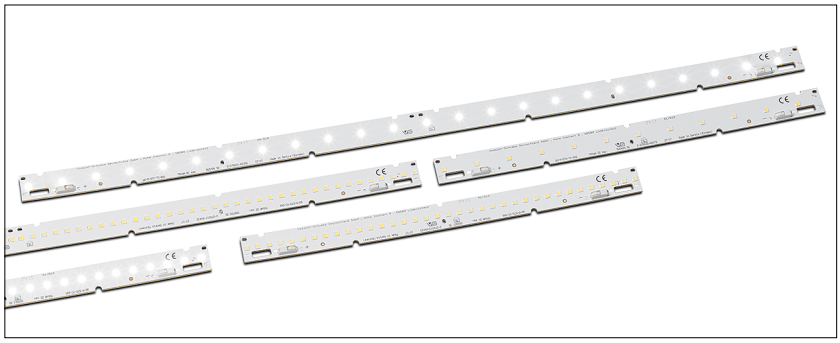
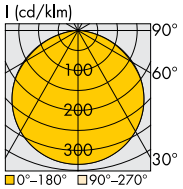


Technical Notes

- LED built-in module for integration into luminaires
- Dimensions
  WU-M-700: 280x20 mm
  WU-M-701: 560x20 mm
- Driving current: 150 / 250 mA / 300 mA / 350 mA / 500 mA
- On-board push-in terminals, optional on top or bottom
- Beam angle: 120°

Typical Light Distribution Curve

Data are available in .ldt format for download under www.vossloh-schwabe.com.



Covers and W2 optics

Please visit our homepage for details for suitable covers and W2 optics:

- www.vossloh-schwabe.com/en/products/optics-reflectors/linear-covers/linear-covers-1r-for-smd-w2
- www.vossloh-schwabe.com/en/products/optics-reflectors/linear-optics/linear-optics-1r-for-smd-w2

Electrical Characteristics

at t_p = 50 °C

Type	No. of SMDs	Typ. voltage DC 150 mA V	250 mA V	300 mA V	350 mA V	500 mA V	Temperature coefficient mV/K	Typ. power consumption 150 mA W	250 mA W	300 mA W	350 mA W	500 mA W
LED Line SMD W2 Easy Gen. 2 – L28												
WU-M-700	35	18.5	18.9	19.1	19.3	19.8	–7.21	2.8	4.7	5.7	6.8	9.9
LED Line SMD W2 Easy Gen. 2 – L56												
WU-M-701	70	37.0	37.9	38.3	38.6	39.5	–14.42	5.6	9.5	11.5	13.5	19.8

Voltage and power consumption tolerance: ± 10% | **Use of external LED constant current driver 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 for frequencies ≥ 100 Hz (mA)
WU-M-700, WU-M-701	500	–10	+80	–20	+70	900

Operating Life

L80/B10

in hours at measured temperature at t_p point

	150 mA 40 °C	50 °C	80 °C	250 mA 40 °C	50 °C	80 °C	300 mA 40 °C	50 °C	80 °C	350 mA 40 °C	50 °C	80 °C
WU-M-700, WU-M-701	>90,000	>90,000	>84,000	>72,000	>72,000	>54,000	>72,000	>72,000	>53,000	>72,000	>72,000	>52,000

	500 mA 40 °C	50 °C	80 °C
WU-M-700, WU-M-701	>72,000	>72,000	>50,000

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Optical Characteristics – CRI > 80

at t_p = 50 °C
CRI: R_a > 80

Type	Ref. No. Connection top (TC)	bottom (BC)	small top (STC)	Colour	Correlated colour temp.* K	Typ. luminous flux** and typ. efficiency** at 150 mA lm	lm/W	250 mA lm	lm/W	300 mA lm	lm/W	350 mA lm	lm/W	500 mA lm	lm/W	Photometric code
LED Line SMD W2 Easy Gen. 2 – L28																
WU-M-700-TC/BC/STC-830	**572672**	**572778**	**572779**	WW	3000	500	180	830	175	995	173	1155	171	1645	166	830/349
WU-M-700-TC/BC/STC-840	**572639**	**572637**	**572638**	NW	4000	520	187	865	182	1035	180	1205	178	1710	173	840/349
WU-M-700-TC/BC/STC-850	**572673**	on request	**572780**	CW	5000	520	187	865	182	1035	180	1205	178	1710	173	850/349
WU-M-700-TC/BC/STC-865	**572674**	on request	**572781**	CW	6500	510	183	845	178	1010	176	1175	174	1675	169	865/349
LED Line SMD W2 Easy Gen. 2 – L56																
WU-M-701-TC/BC/STC-830	**572675**	**572786**	**572787**	WW	3000	1000	180	1660	175	1985	173	2310	171	3285	166	830/349
WU-M-701-TC/BC/STC-840	**572644**	**572642**	**572643**	NW	4000	1040	187	1725	182	2065	180	2405	178	3420	173	840/349
WU-M-701-TC/BC/STC-850	**572676**	on request	**572813**	CW	5000	1040	187	1725	182	2065	180	2405	178	3420	173	850/349
WU-M-701-TC/BC/STC-865	**572677**	**572765**	**572789**	CW	6500	1015	183	1690	178	2020	176	2355	174	3345	169	865/349

3000 K = warm white (WW), 4000 K = neutral white (NW), 5000 K and 6500 K = cool white (CW)
* Colour tolerance: 3 MacAdam | ** Production tolerance of luminous flux and efficiency: ±10%

Minimum order quantity (packaging unit)
L28 / L56 (TC / STC / BC)
24 pcs.

Optical Characteristics – CRI > 90

at t_p = 50 °C
CRI: R_a > 90

Type	Ref. No. Connection top (TC)	bottom (BC)	small top (STC)	Colour	Correlated colour temp.* K	Typ. luminous flux** and typ. efficiency** at 150 mA lm	lm/W	250 mA lm	lm/W	300 mA lm	lm/W	350 mA lm	lm/W	500 mA lm	lm/W	Photometric code
LED Line SMD W2 Easy Gen. 2 – L28																
WU-M-700-TC/BC/STC-927	**572950**	on request	on request	WW	2700	405	146	670	141	795	139	920	136	1280	129	927/349
WU-M-700-TC/BC/STC-930	**572766**	**572782**	**572783**	WW	3000	405	146	670	141	795	139	920	136	1280	129	930/349
WU-M-700-TC/BC/STC-940	**572767**	**572784**	**572785**	NW	4000	455	163	745	158	890	155	1025	152	1425	144	940/349
WU-M-700-TC/BC/STC-950	**572768**	on request	on request	CW	5000	455	163	745	158	890	155	1025	152	1425	144	950/349
WU-M-700-TC/BC/STC-965	**572769**	on request	on request	CW	6500	455	163	745	158	890	155	1025	152	1425	144	965/349
LED Line SMD W2 Easy Gen. 2 – L56																
WU-M-701-TC/BC/STC-927	**572951**	on request	on request	WW	2700	815	146	1340	141	1595	139	1845	136	2560	129	927/349
WU-M-701-TC/BC/STC-930	**572790**	**572791**	**572792**	WW	3000	815	146	1340	141	1595	139	1845	136	2560	129	930/349
WU-M-701-TC/BC/STC-940	**572793**	**572794**	**572795**	NW	4000	905	163	1490	158	1775	155	2055	152	2850	144	940/349
WU-M-701-TC/BC/STC-950	**572796**	on request	on request	CW	5000	905	163	1490	158	1775	155	2055	152	2850	144	950/349
WU-M-701-TC/BC/STC-965	**572797**	on request	on request	CW	6500	905	163	1490	158	1775	155	2055	152	2850	144	965/349

3000 K = warm white (WW), 4000 K = neutral white (NW), 5000 K and 6500 K = cool white (CW)
* Colour tolerance: 3 MacAdam | ** Production tolerance of luminous flux and efficiency: ±10%

Minimum order quantity (packaging unit)
L28 / L56 (TC / STC / BC)
24 pcs.

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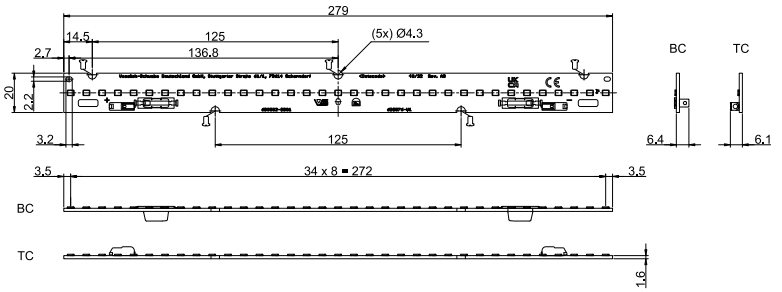
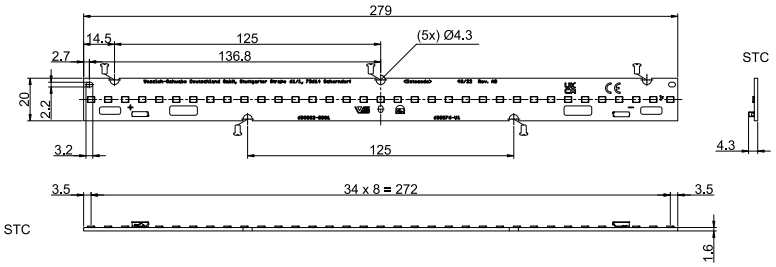
Mechanical Dimensions

TC = Top Connection
BC = Bottom Connection
STC = Small Top Connection

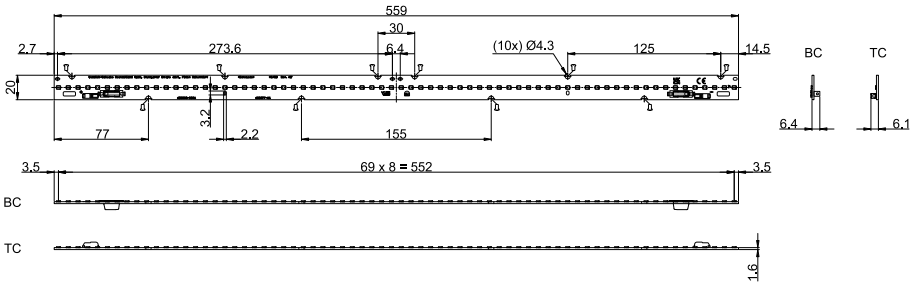
WU-M-700-BC/TC



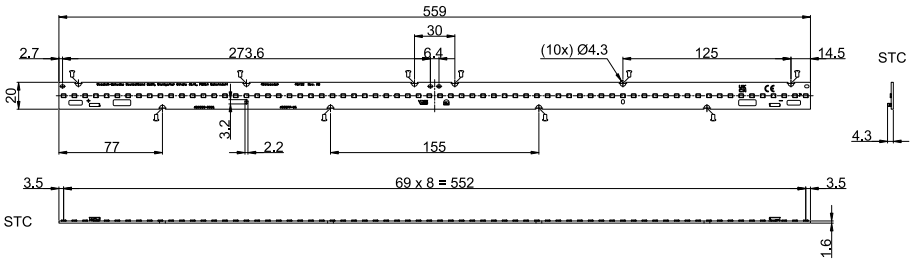
WU-M-700-STC



WU-M-701-BC/TC



WU-M-701-STC



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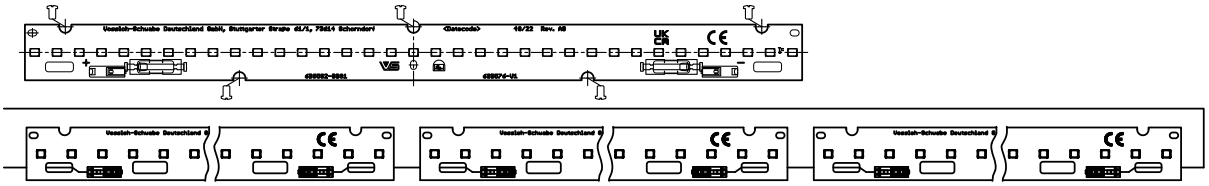
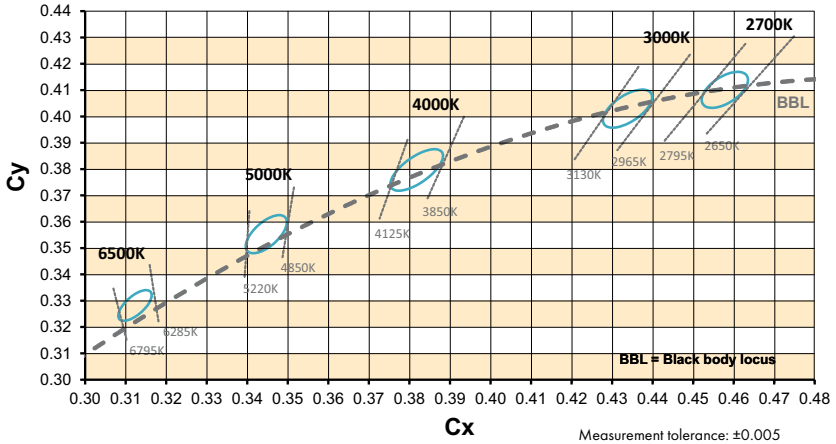
Connection Example

- The number of modules that can be connected in series depends on the available output voltage of the LED driver.
- The clearance and creepage distances are designed for working voltages up to 350 V DC (basic insulation) and 185 V DC (reinforced insulation).
- In case of assembly of the LED modules in profiles (e.g. aluminium) where the profile touches the top edge of the PCB the clearance and creepage distances are reduced to 175 V DC (basic insulation) and 50 V DC (reinforced insulation).
- Max. diameter of screw head (M4): Ø 8 mm
- Only the marked holes are fixing holes for screws M4. Please do not use other holes for fixation!



Bins



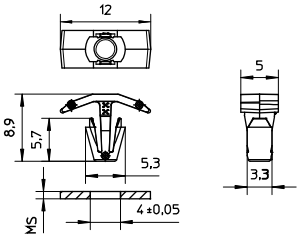
Measurement tolerance: ±0.005
Integral measurement over entire module

Fixing Clip

For fastening LED PCBs to luminaire sheets without needing screws
PCB hole dia.: 4.3–4.5 mm
Vibration resistant version
Material: PC, white (UL-94 V2)
Weight: 0.2 g, Packaging unit: 1000 pcs. (.11 = 10,000 pcs.)

Type	**Ref. No.**	For luminaire sheet thickness (MS) mm
98050	**562870**	0.5–1.0*

* PCB thickness: 1.6 mm



Linear LED Constant Current Drivers

Please visit our homepage for details for suitable LED constant current drivers: www.vossloh-schwabe.com

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Assembly and Safety Information

Installation must be carried out under observation of the relevant regulations and standards. The LED modules 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 assembly modules, fire and/or other hazards.

- Consider safety regulations acc. EN 60598 in the luminair design, especially when the operating LED driver is not galvanic isolated.
  - In mode of operation regard to sufficient isolation.
  - Live parts must not be touched in operation mode. Danger of death!!!

- ESD (electrostatic discharge) protection measures must be observed when handling and installing the LED modules. 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 assembly modules must not be subjected to any undue mechanical stress, e. g.:
  - do not treat as bulk cargo
  - avoid shear and compressive forces during handling and installation
  - do not damage circuit paths
  - avoid any pressure on the light emitting surface
- Safe operation only possible by the use of external constant current sources ($I_{max.}$ see table "Electrical Characteristics").
- Operation only with power supply units that feature the following protection:
  - Short-circuit protection
  - Overload protection
  - Overheating protection
- The module can be fixed with M4 screws. Fixation only with flat or cylinder head screws (M4) (no countersank screws)
  Max. torque: 1.2 Nm (M4)
- Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- For interconnection the LED modules is equipped with push-in terminals. WAGO 2060 for TC variant; WAGO 2065 for STC variant; WAGO 2070 for BC variant
- Safety regulations acc. to EN 60598 (or further standards) has to be observed if the maximum output voltage exceed the permitted touchable value.
- Measurement tolerances:
  - luminous flux: ± 7%
  - voltage: ± 3%
  - CRI: ± 1
- The following points must be observed when connecting LED modules in parallel:
  - All LED strings that are wired in parallel must contain the same number of LEDs (symmetrical loading).
  - Owing to differing forward biases, there can be a difference of up to 10% in brightness between modules connected in parallel.
- To ensure problem-free operation, the specified maximum temperature at the t_p 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.
- In the event of outdoor applications or applications in damp locations, care must be taken to protect LED assembly modules 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. LED assembly modules are not specially protected against foreign bodies or dust. Depending on the type of application, further protection must be ensured to prevent dust and foreign bodies from entering.
- Due to the manufacturing process, the PCBs of the LED assembly modules can have sharp edges and corners. Care must therefore be taken during handling and installation to avoid injury.
- For optimal load of used constant current driver the modules can only 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.
- 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
- The photobiological safety of the LED modules must be classified into risk groups in accordance with EN 62471: 2008.
  Rating in accordance with IEC / TR 62778: risk group 1 within the complete range of allowed operating current per LED module (up to 500 mA)

Applied Standards

EN 62031
LED modules for general lighting – Safety specifications

pending
EN 62471
Photobiological safety of lamps and lamp systems

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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