

LED LIGHT PANEL SMD

WU-M-542-G (270X540)



LED LIGHT PANEL SMD – LED MODULES FOR OFFICE LIGHTING

WU-M-542-G

Typical Applications

Built-in luminaires/general illumination


- Office lighting, especially grid luminaires 600x600 mm
- Retail lighting
- T5/T8 replacement as built-in module
- Furniture lighting
- Backlighting for advertising

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- **LONG SERVICE LIFE TIME: 60,000 H (L80, B10)**
- **HIGHLY EFFICIENT: UP TO 180 LM/W
AT T_p = 50 °C**
- **VERY NARROW COLOUR TOLERANCES:
3 STEP MACADAM**

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Technical Notes

- LED built-in module for integration into luminaires 
- Dimensions: 270x540 mm
- Driving current: 275 mA / 300 mA / 325 mA / 350 mA / 500 mA
- On-board push-in terminals
- Colour tolerance: 3-step MacAdam
- No. of LEDs: 64



Electrical Characteristics

at $t_p = 50\text{ °C}$

Temperature coefficient: -53.21 mV/K

	All types 275 mA			300 mA			325 mA			350 mA			500 mA		
	min.	typ.	max.	min.	typ.	max.	min.	typ.	max.	min.	typ.	max.	min.	typ.	max.
Voltage DC* [V]	42.3	45.2	50.3	42.7	45.6	50.7	43.2	46.0	51.2	43.6	46.4	51.6	45.8	48.7	53.8
Power consumption* [W]	11.6	12.4	13.8	12.8	13.7	15.2	14.0	14.9	16.6	15.3	16.2	18.1	22.9	24.4	26.9

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 mA
		°C min.	°C max.	°C min.	°C max.	
All types	275, 300, 325, 350	-20	+70	-20	+85	720
	500					670

Optical Characteristics

at $t_p = 50\text{ °C}$

Type	Ref. No.	Colour	Correlated colour temperature K	Beam angle °	CRI R_a		Photometric code
					min.	typ.	

Dimensions: 270x540 mm

WU-M-542-G-830	563041	WW	3000 $-80/+130$	120	80	85	830/349
WU-M-542-G-840	563044	NW	4000 $-160/+115$	120	80	85	840/349
WU-M-542-G-850	563047	NW	5000 $-125/+155$	120	80	85	850/349
WU-M-542-G-865	563050	CW	6500 $-165/+220$	120	80	85	865/349

WW = warm white, NW = neutral white, CW = cool white

Type	Ref. No.	Correlated colour temperature K	Luminous flux* (lm) and efficiency (lm/W) at														
			275 mA			300 mA			325 mA			350 mA			500 mA		
			min.	typ.	typ.	min.	typ.	typ.	min.	typ.	typ.	min.	typ.	typ.	min.	typ.	typ.

Dimensions: 270x540 mm

WU-M-542-G-830	563041	3000 $-80/+130$	1880	2080	167	2040	2260	165	2205	2435	163	2360	2615	161	3285	3635	149
WU-M-542-G-840	563044	4000 $-160/+115$	1955	2185	176	2125	2370	173	2295	2560	171	2460	2745	169	3420	3815	157
WU-M-542-G-850	563047	5000 $-125/+155$	2130	2240	180	2315	2435	178	2500	2625	176	2680	2815	173	3725	3920	161
WU-M-542-G-865	563050	6500 $-165/+220$	1955	2210	178	2125	2400	175	2295	2590	173	2460	2775	171	3420	3860	159

* Measurement tolerance: $\pm 7\%$

Minimum order quantity (packaging unit): **38 pcs.**

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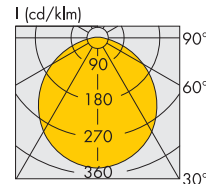
Operating Life

L80/B10

Temperature	If 275 mA	If 300 mA	If 325 mA	If 350 mA	If 500 mA
at $t_p = 50\text{ °C}$	> 60,000 hrs	> 60,000 hrs	> 60,000 hrs	> 60,000 hrs	> 60,000 hrs
at $t_p = 70\text{ °C}$	> 60,000 hrs	> 60,000 hrs	> 60,000 hrs	> 60,000 hrs	> 60,000 hrs

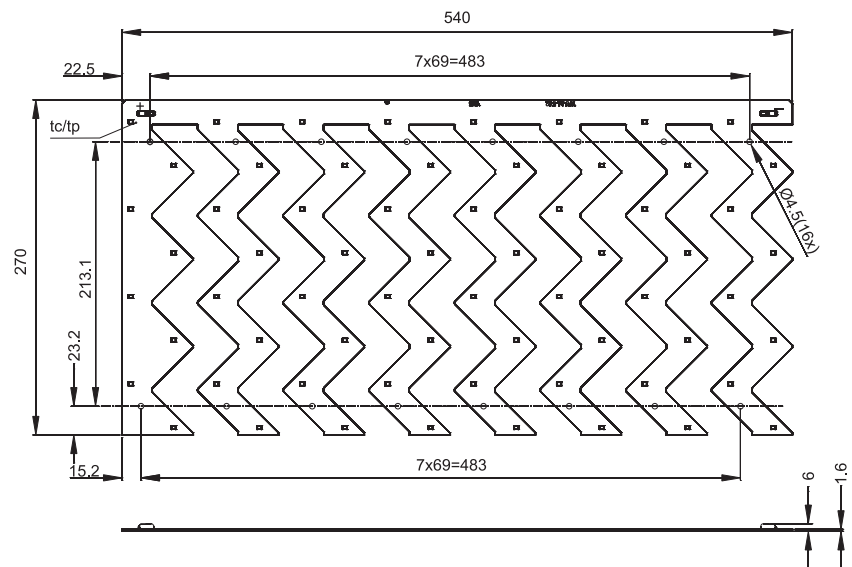
Typical Light Distribution Curve

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

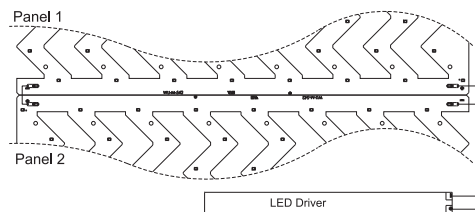


Mechanical Dimensions

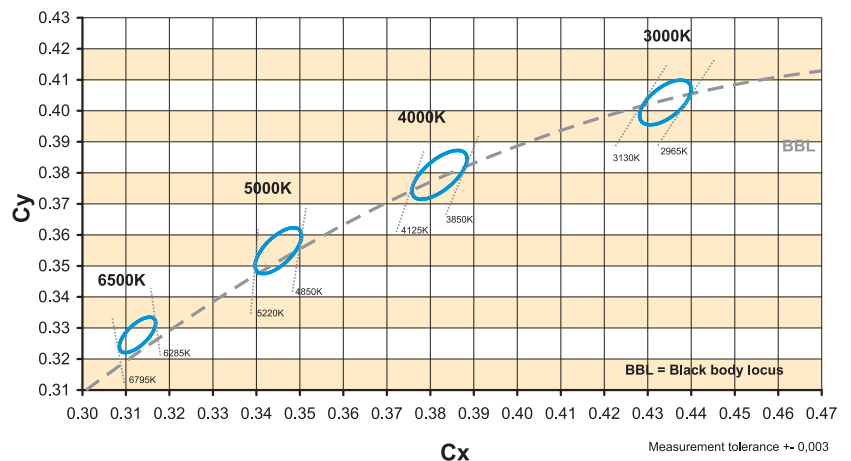
- The number of modules that can be connected in series depends on the available output voltage of the LED driver.
- The clearance and creepage distances are designed for working voltages up to 500 V DC (basic insulation) and 250 V DC (reinforced insulation).
- Max. diameter of screw head (M4): $\varnothing 8\text{ mm}$



Connection Example



Bins



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Fixing Clip

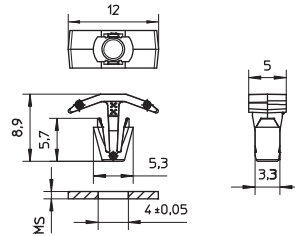
For fastening LED PCBs to luminaire sheets without needing screws

PCB hole dia.: 4.3–4.7 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

LED Constant Current Drivers

Please visit our homepage for details for suitable

LED constant current drivers: www.vossloh-schwabe.com

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 luminaire design, especially when the operating LED driver is not galvanic isolated (not SELV).
 - In mode of operation regard to sufficient isolation.
 - Live parts must not be touched in operation mode.
Danger in life!!!
- 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 could 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
- 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).
- Safety regulations acc. to EN 60598 (or further standards) has to be observed if the maximum output voltage exceed the permitted touchable value.
- 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.

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Assembly and Safety Information

- 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 full-surface 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
- Powdercoated materials
- Silicone rubber
- Teflon

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.

- 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
Assessment of risk groups in acc. with IEC/TR 62778: risk group 1

Applied Standards

EN 62031
LED modules for general lighting – Safety specifications

EN 62471
Photobiological safety of lamps and lamp system

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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