

LED LINE SMD KIT 3R CSP TUNEABLE

L28/56 W5.5



LED LINE SMD KIT 3R CSP TUNEABLE – L28/56 W5.5

WU-M-567 / -568

Typical Applications

Built-in luminaires/general illumination

- Office lighting
- Retail, corridor and shelf lighting
- T5/T8 replacement as built-in module
- Furniture lighting
- Backlighting for advertising

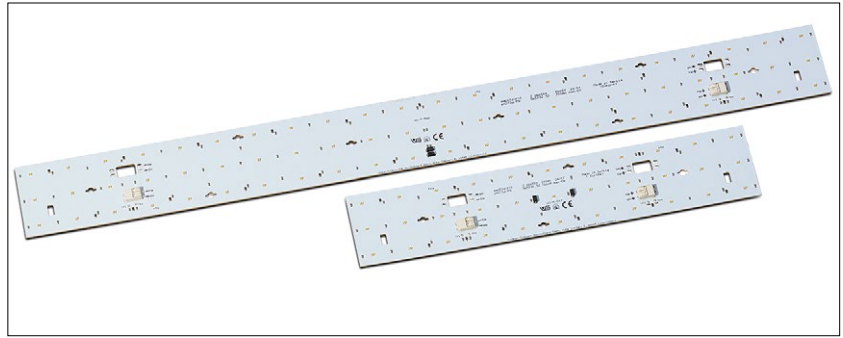
LED Line SMD Kit 3R CSP Tuneable W5,5

- **COLOUR DYNAMIC FROM 2700 TO 6000 K**
- **LONG SERVICE LIFE TIME: > 60,000 H (L90, B10)**
- **HIGHLY EFFICIENT: UP TO 147 LM/W
AT $T_p = 50\text{ }^\circ\text{C}$**
- **2 LENGTHS AVAILABLE: 280 / 560 MM**
- **FLEXIBLE LIGHT DISTRIBUTION
BY DIFFERENT OPTICS**
- **ZHAGA-COMPLIANT HOLE DISTANCE**

LED Line SMD Kit 3R CSP Tuneable – L28/56 W5.5

Technical Notes

- LED built-in module for integration into luminaires
- Dimensions
WU-M-567: 280x55 mm
WU-M-568: 560x55 mm
- Driving current: 350 mA / 500 mA / 700 mA
- On-board push-in connector
- Colour tolerance: 3-step MacAdam or 4-step MacAdam at colour mixing



Electrical Characteristics

bei t_{c1} / t_{c2} (t_p) = 50 °C

Type	Number of LEDs*	Typ. voltage DC**			Temperature coefficient mV/K	Typ. power consumption**		
		350 mA V	500 mA V	700 mA V		350 mA W	500 mA W	700 mA W
WU-M-567	33	8.2	8.5	8.7	-12.87	2.9	4.3	6.1
WU-M-568	66	16.5	16.9	17.5	-25.74	5.8	8.5	12.3

* per channel | ** Tolerance of voltage and power: ± 10 % / data per channel

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		Storage temperature range °C		Max. allowed repetitive peak current mA
		min.	max.	min.	max.	
All types	350	-20	+75	-20	+75	1260
	500	-20	+75	-20	+75	1240
	700	-20	+75	-20	+75	1210

Operating Life

L90/B10

in hours at measured temperature at t_p point

Type	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-567	> 60,000	> 60,000	> 60,000	> 60,000	> 60,000	> 60,000	> 60,000	> 60,000	> 60,000
WU-M-568	> 60,000	> 60,000	> 60,000	> 60,000	> 60,000	> 60,000	> 60,000	> 60,000	> 60,000

Optical Characteristics

at t_{c1} / t_{c2} (t_p) = 50 °C; without secondary optics

Type	Ref. No. Connection		Colour	Correlated colour temperature K	Luminous flux* (lm) and efficiency (lm/W) at									CRI		Beam angle* °
	top (TC)	bottom (BC)			350 mA			500 mA			700 mA			min.	typ.	
					min.	typ.	typ.	min.	typ.	typ.	min.	typ.	typ.	R _a	R _o	
LED Line CSP Tuneable – 280 mm – 33 LEDs per channel																
WU-M-567	565030	565031	Tuneable White	2700	356	372	129	501	524	124	689	720	118	80	85	120
				6000	406	425	147	572	598	141	786	822	134			
LED Line CSP Tuneable – 560 mm – 66 LEDs per channel																
WU-M-568	565032	565033	Tuneable White	2700	715	747	129	1007	1053	124	1384	1446	118	80	85	120
				6000	811	848	147	1143	1194	141	1570	1640	134			

* Measurement tolerance: ± 7 %

Minimum order quantity (packaging unit): 42 pcs.

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LED Line SMD Kit 3R CSP Tuneable – L28/56 W5.5

Tuneable Characteristics

at t_{c1} / t_{c2} (t_p) = 50 °C; without secondary optics

CCT (K) for type WU-M-567 / WU-M-568									
Channel 1 / 2700 K	700 mA	2762 K	3033 K	3251 K	3437 K	3599 K	3742 K	3868 K	3980 K
	600 mA	2762 K	3072 K	3316 K	3521 K	3696 K	3848 K	3980 K	4096 K
	500 mA	2762 K	3125 K	3402 K	3629 K	3819 K	3980 K	4117 K	4236 K
	400 mA	2762 K	3200 K	3521 K	3775 K	3980 K	4148 K	4289 K	4408 K
	300 mA	2762 K	3316 K	3696 K	3980 K	4198 K	4371 K	4510 K	4627 K
	200 mA	2762 K	3521 K	3980 K	4289 K	4510 K	4678 K	4809 K	4916 K
	100 mA	2762 K	3980 K	4510 K	4809 K	5004 K	5143 K	5248 K	5330 K
	0 mA		6023 K	6023 K	6023 K	6023 K	6023 K	6023 K	6023 K
Operating current	0 mA	100 mA	200 mA	300 mA	400 mA	500 mA	600 mA	700 mA	
Channel 2 / 6000 K									

Typ. luminous flux (lm) for type WU-M-567									
Channel 1 / 2700 K	700 mA	722 lm	846 lm	969 lm	1089 lm	1206 lm	1322 lm	1435 lm	1546 lm
	600 mA	625 lm	749 lm	871 lm	992 lm	1109 lm	1225 lm	1338 lm	1449 lm
	500 mA	525 lm	650 lm	772 lm	892 lm	1010 lm	1126 lm	1239 lm	1350 lm
	400 mA	424 lm	549 lm	671 lm	791 lm	909 lm	1025 lm	1138 lm	1249 lm
	300 mA	321 lm	446 lm	568 lm	688 lm	805 lm	922 lm	1035 lm	1146 lm
	200 mA	215 lm	340 lm	462 lm	582 lm	701 lm	816 lm	930 lm	1041 lm
	100 mA	109 lm	233 lm	355 lm	475 lm	592 lm	707 lm	819 lm	929 lm
	0 mA	0 lm	125 lm	247 lm	366 lm	483 lm	598 lm	710 lm	823 lm
Operating current	0 mA	100 mA	200 mA	300 mA	400 mA	500 mA	600 mA	700 mA	
Channel 2 / 6000 K									

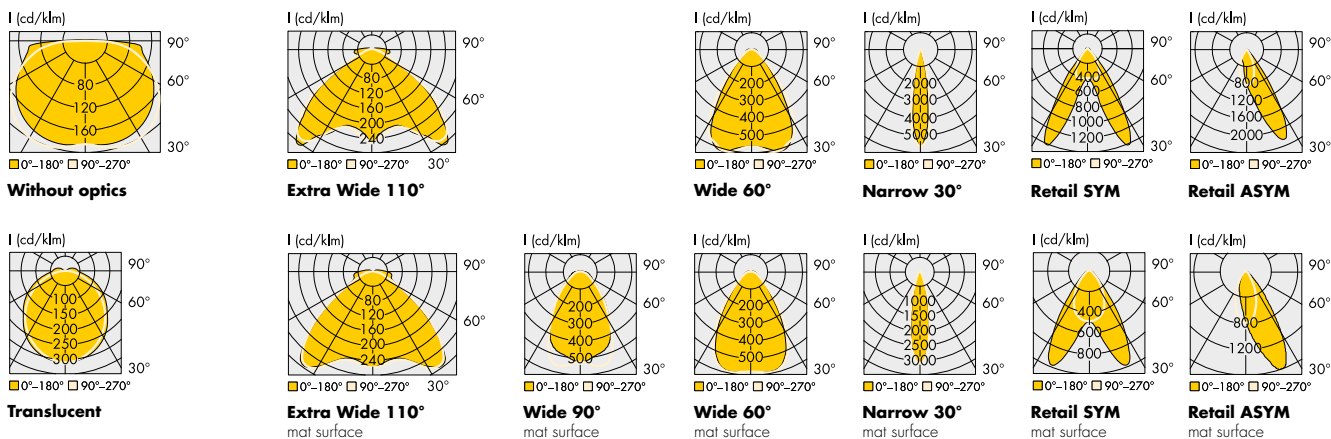
Typ. luminous flux (lm) for type WU-M-568									
Channel 1 / 2700 K	700 mA	1441 lm	1690 lm	1934 lm	2173 lm	2408 lm	2639 lm	2865 lm	3086 lm
	600 mA	1247 lm	1496 lm	1740 lm	1979 lm	2214 lm	2445 lm	2671 lm	2892 lm
	500 mA	1048 lm	1298 lm	1542 lm	1781 lm	2016 lm	2247 lm	2473 lm	2694 lm
	400 mA	847 lm	1096 lm	1340 lm	1579 lm	1814 lm	2045 lm	2271 lm	2492 lm
	300 mA	642 lm	890 lm	1134 lm	1374 lm	1609 lm	1839 lm	2065 lm	2286 lm
	200 mA	432 lm	680 lm	924 lm	1164 lm	1399 lm	1629 lm	1855 lm	2077 lm
	100 mA	218 lm	466 lm	710 lm	950 lm	1185 lm	1415 lm	1641 lm	1863 lm
	0 mA	0 lm	249 lm	493 lm	732 lm	967 lm	1198 lm	1424 lm	1645 lm
Operating current	0 mA	100 mA	200 mA	300 mA	400 mA	500 mA	600 mA	700 mA	
Channel 2 / 6000 K									

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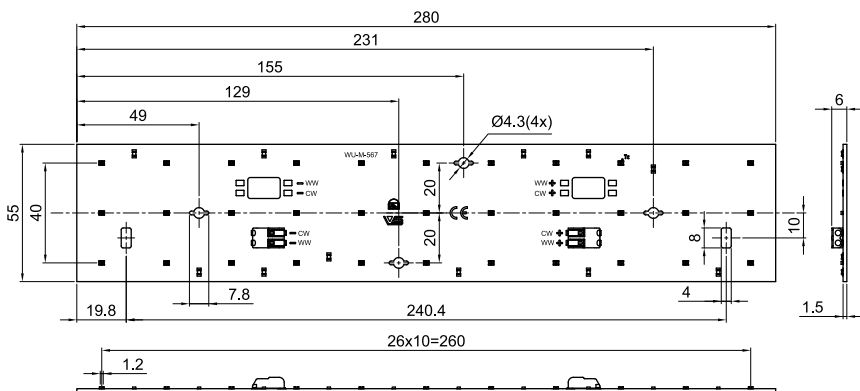
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Typical Light Distribution Curves

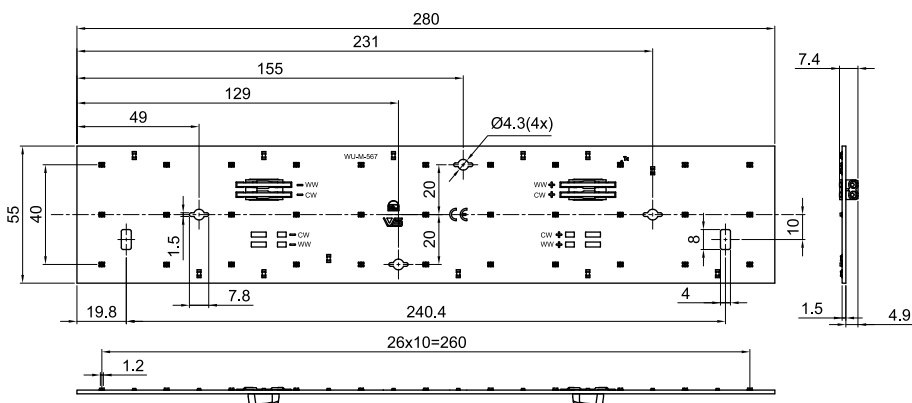
Data are available in .ldt format for download under www.vossloh-schwabe.com.



Mechanical Dimensions SMD Board



WU-M-567 - TC = Top Connected

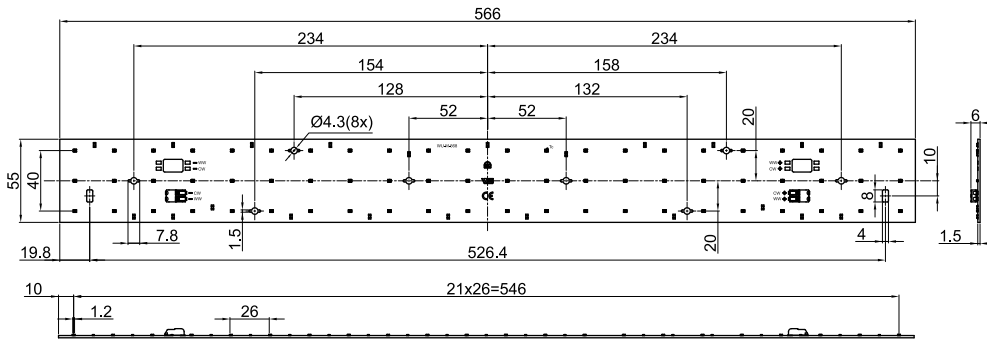


WU-M-567 - BC = Bottom Connected

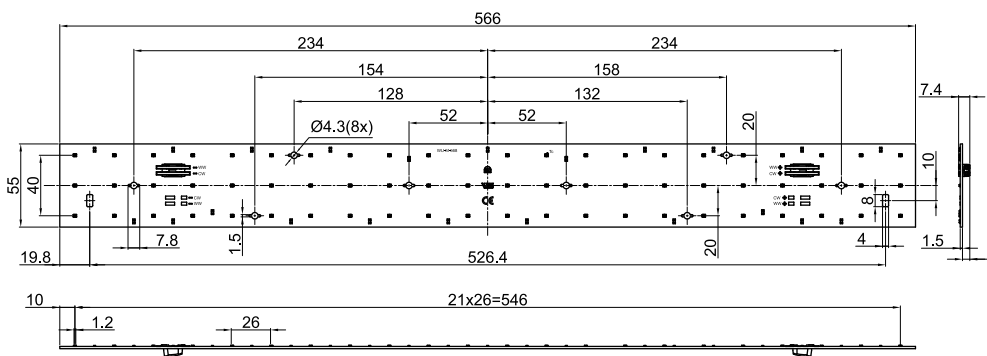
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Mechanical Dimensions SMD Board



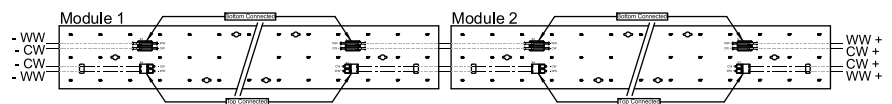
WU-M-568 – TC = Top Connected



WU-M-568 – BC = Bottom Connected

Connection Examples

- 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) with plastic screws or fixing clips. In case of assembly of the LED modules with metal screws the clearance and creepage distances are reduced to 360 V DC (basic insulation) and 190 V DC (reinforced insulation).
- Max. diameter of screw head (M4): Ø 8 mm



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LED Line SMD Kit 3R CSP Tuneable – L28/56 W5.5

Fixing Clip

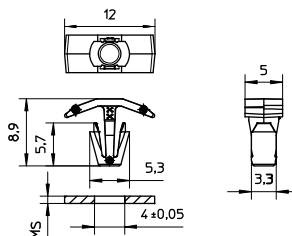
For fastening LED PCBs to luminaire sheets without needing screws

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

Technical Notes for Optics

Brilliant light distribution and surfaces

Highly efficient up to 95%

Material: PMMA, transparent or translucent

Dimensions (LxWxH): 285.4x62x11.25 mm

SMD Kits can be stringed together, for modules 280 mm, 566 mm and module chains

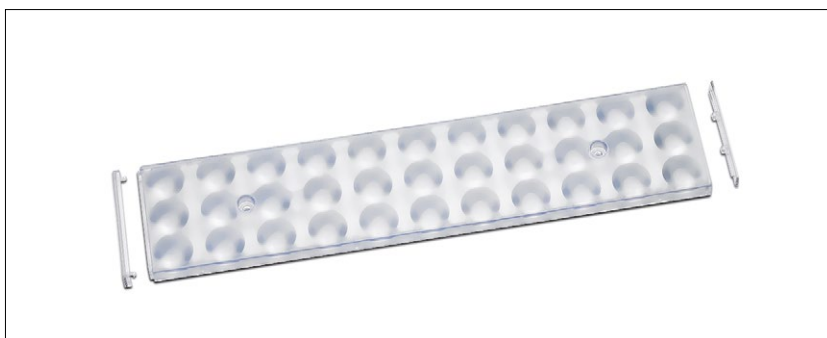
Max. allowed temperature: 80 °C

Fixation with flat or cylinder head screws (M4)

or with fixing clip (see page 7)

Max. torque: 1.2 Nm (M4)

Packaging unit: 120 pcs.



Light distribution	Optics type	Ref. No.	Efficiency %	Weight g
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Material: transparent, high-glossy

Extra Wide 110°	99400	560371	95	105
Wide 60°	99401	560372	95	88
Narrow 30°	99404	560375	95	94
Retail SYM	99402	560373	95	93
Retail ASYM	99403	560374	95	99

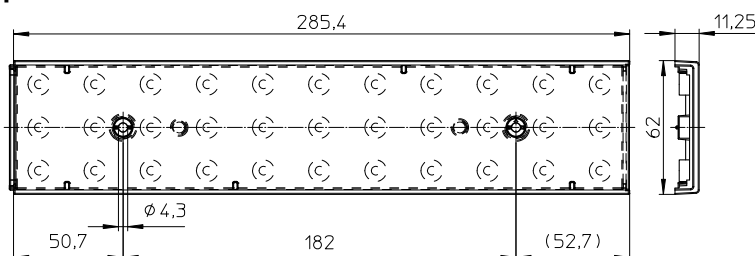
Material: transparent, mat

Extra Wide 110°	99410	564557	95	105
Wide 90°	99415	564559	95	80
Wide 60°	99411	563660	95	88
Narrow 30°	99414	564558	95	94
Retail SYM	99412	563337	95	93
Retail ASYM	99413	563338	95	99

Material: translucent, high-glossy

Diffuse	99400	562543	85	105
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Optics



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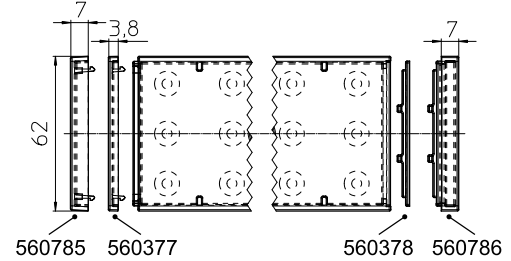
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End Caps

Lateral attachment on the optics
(on the side of the groove or tongue)
Material: PC, transparent, mat

End cap type	For optics type	Ref. No.	Length L mm	Weight g	Packaging unit (pcs.)
Tongue side	994	560377	3.8	1.6	250
Tongue side	994	560785	7	2.3	250
Groove side	994	560378	–	1	500
Groove side	994	560786	7	3.3	500

End Caps



Spacer

For creating different lengths of lighting strips
Insert in optics to connect (groove or tongue side)
Material: PMMA, transparent or translucent, high-glossy

Spacer type	For optics type	Ref. No.	Length L mm	Weight g	Packaging unit (pcs.)
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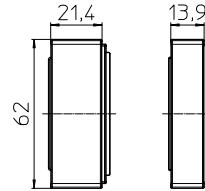
Material: transparent, high-glossy

Short	994	564458	13.9	4.5	350
Long	994	563187	21.4	6.1	350
Short, VS brand	994	560793	13.9	4.5	350
Long, VS brand	994	560789	21.4	6.1	350

Material: translucent, high-glossy

Short	994	564459	13.9	4.5	350
Long	994	564457	21.4	6.1	350
Short, VS brand	994	564678	13.9	4.5	350
Long, VS brand	994	564677	21.4	6.1	350

Spacer



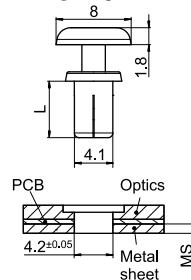
Fixing Clip

For fastening LED optics of type 994 and LED PCBs
to luminaire sheets without needing screws
Vibration resistant version
Material: PA, natural (UL-94 V-2)
Weight: 0.2 g, Packaging unit: 1000 pcs.

Type	Ref. No.	For luminaire sheet thickness* (MS) mm	Length L mm
98001	562557	0.5–1.3	8
98002	562558	1.4–2.2	9
98003	562559	2.3–3.1	10

* For PCB thickness: 1.5 mm

Fixing Clip



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 luminaire 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 in life!!!
- ESD (electrostatic discharge) protection measures must be observed when handling and installing the LED modules. LED modules correspond to ESD level 1. 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 must 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) /countersunk 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.
- 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.
- 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
Rating in accordance 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 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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