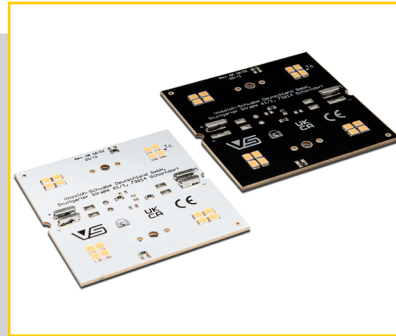


LED SMD LIGHT&DARK SQUARE GEN. 2



LED SMD LIGHT&DARK SQUARE GEN. 2

MCC SC 62x62 G2
MCC SC 62x62 LV G2

Typical Applications

Built-in luminaires/general illumination

- Office lighting
- Retail, corridor and shelf lighting
- Residential lighting

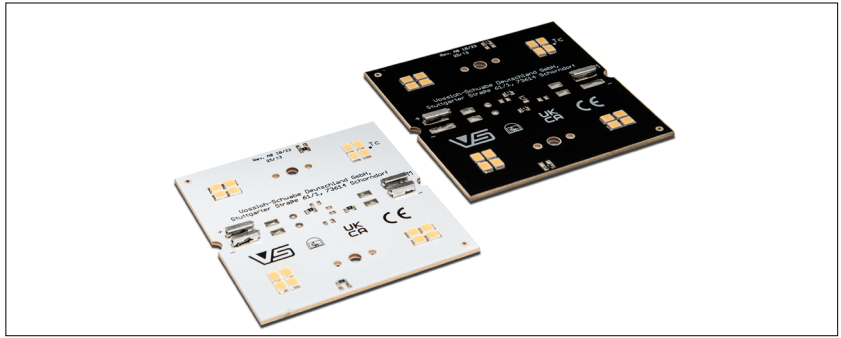
LED SMD Light&Dark Square Gen. 2

- **LONG SERVICE LIFE TIME: 93.000 H (L80, B10)**
- **HIGHLY EFFICIENT: UP TO 212 LM/W
AT T_p = 50 °C**
- **SQUARE SHAPE**
- **SELV AND NON-SELV VARIANTS AVAILABLE**
- **2 PCBS COLOR AVAILABLE: WHITE AND BLACK**

LED SMD Light&Dark Square Gen. 2

Technical Notes

- LED built-in module for integration into luminaires
- Dimensions
MCC SC 62x62: 62x62 mm
Driving current:
Non-SELV:
MCC SC 62x62:
150 mA, 200 mA, 350 mA, 500 mA, 700 mA
SELV:
MCC SC 62x62 LV:
100 mA, 150 mA, 200 mA, 250 mA, 350 mA
- On-board push-in terminals
- Beam angle: 120°
- SELV and Non-SELV application
- Colour rendering index (CRI): Ra80 and Ra90



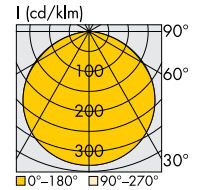
Typical Light Distribution Curve

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

Covers and optics

Please visit our homepage for details for suitable optics:

- www.vossloh-schwabe.com/en/products/optics-reflectors/linear-optics



Non-SELV variants

Electrical Characteristics

at $t_p = 50^\circ\text{C}$

Type	No. of SMDs	Typ. voltage DC					Temperature coefficient mV/K	Typ. power consumption				
		150 mA V	200 mA V	350 mA V	500 mA V	700 mA V		150 mA W	200 mA W	350 mA W	500 mA W	700 mA W
MCC SC 62x62/x S/16/yz G2	16	10.4	10.5	10.7	10.9	11.1	-4.03	1.6	2.1	3.7	5.4	7.8

Voltage and power consumption tolerance: $\pm 10\%$ | **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		Storage temperature range		Max. allowed repetitive peak current for frequencies ≥ 100 Hz (mA)
		$^\circ\text{C min.}$	$^\circ\text{C max.}$	$^\circ\text{C min.}$	$^\circ\text{C max.}$	
MCC SC 62x62/x S/16/yz G2	700	-20	+80	-20	+70	1920

Operating Life

L80/B10 in hours at measured temperature at t_p point

	150 mA			200 mA			350 mA			500 mA			700 mA		
	40 $^\circ\text{C}$	50 $^\circ\text{C}$	80 $^\circ\text{C}$	40 $^\circ\text{C}$	50 $^\circ\text{C}$	80 $^\circ\text{C}$	40 $^\circ\text{C}$	50 $^\circ\text{C}$	80 $^\circ\text{C}$	40 $^\circ\text{C}$	50 $^\circ\text{C}$	80 $^\circ\text{C}$	40 $^\circ\text{C}$	50 $^\circ\text{C}$	80 $^\circ\text{C}$
All types	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000

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LED SMD Light&Dark Square Gen. 2

Optical Characteristics – CRI > 80

at $t_p = 50^\circ\text{C}$, without secondary optics

Type	Ref. No.		Colour	Correlated colour temp. *	Typ. luminous flux** and typ. efficiency**										Photometric code
	PCB colour				at										
	White	Black			150 mA		200 mA		350 mA		500 mA		700 mA		
	(W)	(B)			lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	

LED SMD Light&Dark Square Gen. 2

MCC SC 62x62/x S/16/830 G2	574978	574998	WW	3000	310	199	410	196	700	187	975	179	1335	171	830/359
MCC SC 62x62/x S/16/840 G2	574979	574999	NW	4000	330	212	440	209	745	200	1045	192	1425	183	840/359
MCC SC 62x62/x S/16/850 G2	574980	575000	CW	5000	330	212	440	209	745	200	1045	192	1425	183	850/359
MCC SC 62x62/x S/16/865 G2	574981	575001	CW	6500	330	212	440	209	745	200	1045	192	1425	183	865/359

3000 K = warm white (WW), 4000 K = neutral white (NW), 5000 K = cool white (CW), 6500 K = cool white (CW)

* Colour tolerance: 3 MacAdam | ** Production tolerance of luminous flux and efficiency: $\pm 10\%$

Optical Characteristics – CRI > 90

at $t_p = 50^\circ\text{C}$, without secondary optics

Type	Ref. No.		Colour	Correlated colour temp.*	Typ. luminous flux** and typ. efficiency**										Photometric code
	PCB colour				at										
	White	Black			150 mA		200 mA		350 mA		500 mA		700 mA		
	(W)	(B)			lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	

LED SMD Light&Dark Square Gen. 2

MCC SC 62x62/x S/16/930 G2	574982	575002	WW	3000	265	171	355	169	600	161	840	155	1150	147	930/359
MCC SC 62x62/x S/16/940 G2	574983	575003	NW	4000	285	185	380	182	650	174	910	167	1240	159	940/359
MCC SC 62x62/x S/16/950 G2	574984	575004	CW	5000	285	185	380	182	650	174	910	167	1240	159	950/359
MCC SC 62x62/x S/16/965 G2	574985	575005	CW	6500	285	185	380	182	650	174	910	167	1240	159	965/359

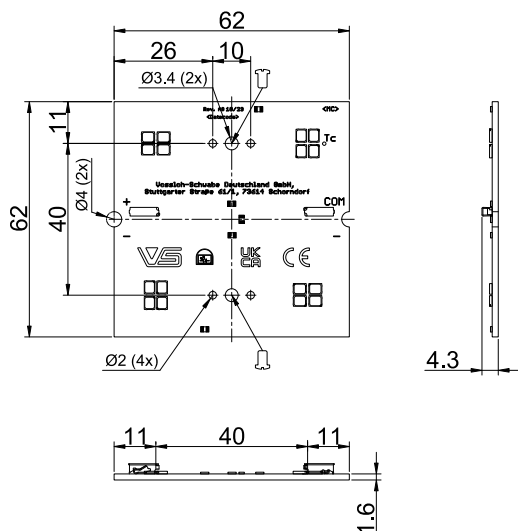
3000 K = warm white (WW), 4000 K = neutral white (NW), 5000 K = cool white (CW), 6500 K = cool white (CW)

* Colour tolerance: 3 MacAdam | ** Production tolerance of luminous flux and efficiency: $\pm 10\%$

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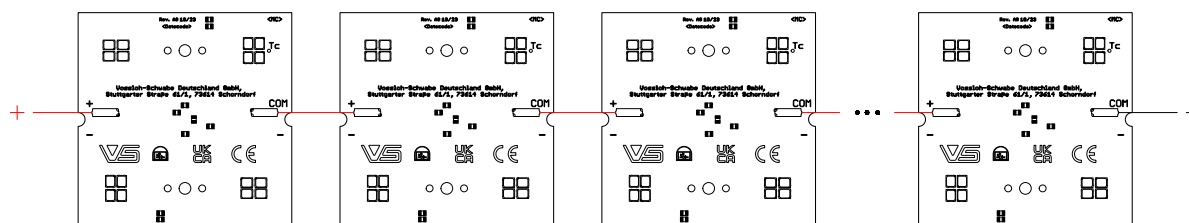
Mechanical Dimensions

MCC SC 62x62/x S/16/yz G2



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 250 V DC (basic insulation) and 150 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 150 V DC (basic insulation).
- Only the marked holes  are fixing holes for screws M3. Please do not use other holes for fixation!



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SELV variants

Electrical Characteristics

at t_p = 50 °C

Type	No. of SMDs	Typ. voltage DC					Temperature coefficient mV/K	Typ. power consumption				
		100 mA V	150 mA V	200 mA V	250 mA V	350 mA V		100 mA W	150 mA W	200 mA W	250 mA W	350 mA W
MCC SC 62x62/x S/16/yz LV G2	16	20.9	21.2	21.5	21.8	22.3	-8.07	2.1	3.2	4.3	5.4	7.8

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		Storage temperature range		Max. allowed repetitive peak current for frequencies ≥ 100 Hz (mA)
		°C min.	°C max.	°C min.	°C max.	
MCC SC 62x62/x S/16/yz LV G2	350	-20	+80	-20	+70	960

Operating Life

L80/B10 in hours at measured temperature at t_p point

	100 mA			150 mA			200 mA			250 mA			350 mA		
	40 °C	50 °C	80 °C	40 °C	50 °C	80 °C	40 °C	50 °C	80 °C	40 °C	50 °C	80 °C	40 °C	50 °C	80 °C
All types	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000

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LED SMD Light&Dark Square Gen. 2

Optical Characteristics – CRI > 80

at $t_p = 50^\circ\text{C}$, without secondary optics

Type	Ref. No. PCB colour		Colour	Correlated colour temp.* K	Typ. luminous flux** and typ. efficiency** at										Photometric code	
	White (W)	Black (B)			100 mA		150 mA		200 mA		250 mA		350 mA			
					lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W		
LED SMD Light&Dark Square Gen. 2																
MCC SC 62x62/x S/16/830 LV G2	574986	575006	WW	3000	410	196	605	190	790	184	975	179	1335	171	830/359	
MCC SC 62x62/x S/16/840 LV G2	574987	575007	NW	4000	440	209	645	203	845	197	1045	192	1425	183	840/359	
MCC SC 62x62/x S/16/850 LV G2	574988	575008	CW	5000	440	209	645	203	845	197	1045	192	1425	183	850/359	
MCC SC 62x62/x S/16/865 LV G2	574989	575009	CW	6500	440	209	645	203	845	197	1045	192	1425	183	865/359	

3000 K = warm white (WW), 4000 K = neutral white (NW), 5000 K = cool white (CW), 6500 K = cool white (CW)

* Colour tolerance: 3 MacAdam | ** Production tolerance of luminous flux and efficiency: $\pm 10\%$

Optical Characteristics – CRI > 90

at $t_p = 50^\circ\text{C}$, without secondary optics

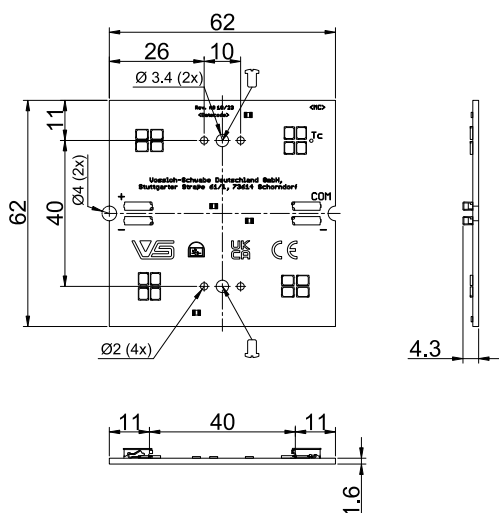
Type	Ref. No. PCB colour		Colour	Correlated colour temp.* K	Typ. luminous flux** and typ. efficiency** at										Photometric code
	White (W)	Black (B)			100 mA		150 mA		200 mA		250 mA		350 mA		
					lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	
LED SMD Light&Dark Square Gen. 2															
MCC SC 62x62/x S/16/930 LV G2	574990	575010	WW	3000	355	169	520	164	685	159	840	155	1150	147	930/359
MCC SC 62x62/x S/16/940 LV G2	574991	575011	NW	4000	380	182	560	177	735	171	910	167	1240	159	940/359
MCC SC 62x62/x S/16/950 LV G2	574992	575012	CW	5000	380	182	560	177	735	171	910	167	1240	159	950/359
MCC SC 62x62/x S/16/965 LV G2	574993	575013	CW	6500	380	182	560	177	735	171	910	167	1240	159	965/359

3000 K = warm white (WW), 4000 K = neutral white (NW), 5000 K = cool white (CW), 6500 K = cool white (CW)

* Colour tolerance: 3 MacAdam | ** Production tolerance of luminous flux and efficiency: $\pm 10\%$

Mechanical Dimensions

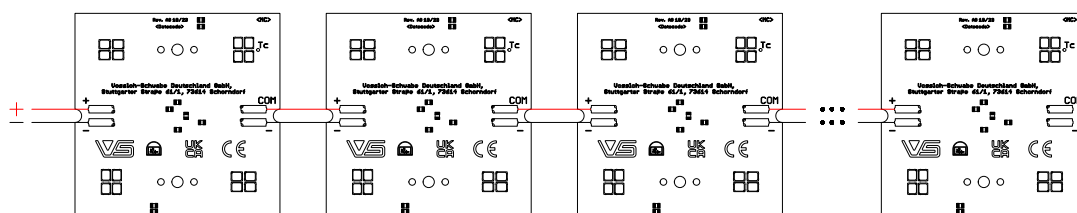
MCC SC 62x62/x S/16/yz LV G2



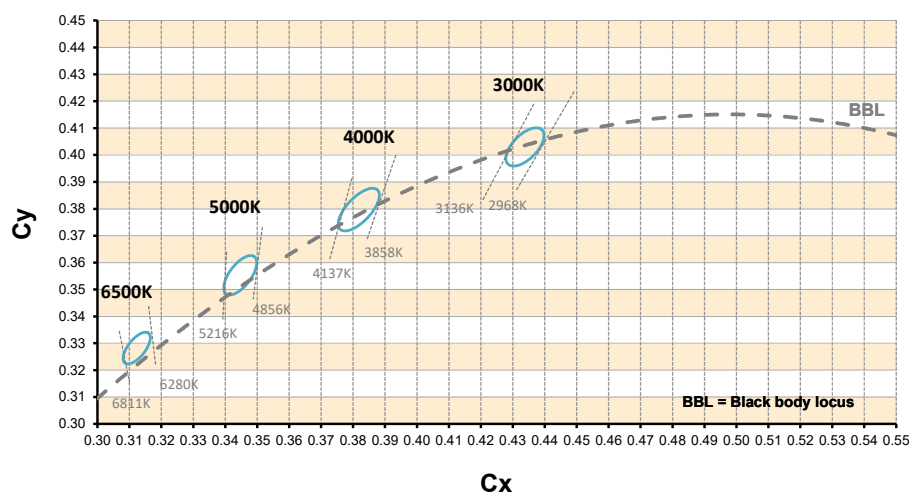
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Connection Example

- The maximum number of modules that can be connected in one line (parallel connection of all boards) depends on the chosen operating current. The max. allowed current load on tracks and connectors is 1.8 A.
 $I_{\text{Driver}} = I_{\text{Module}} \times n$ (the number of modules)
- The clearance and creepage distances are designed for working voltages up to 250 V DC (basic insulation) and 150 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 150 V DC (basic insulation).
- Only the marked holes  are fixing holes for screws M3. Please do not use other holes for fixation!



Bins



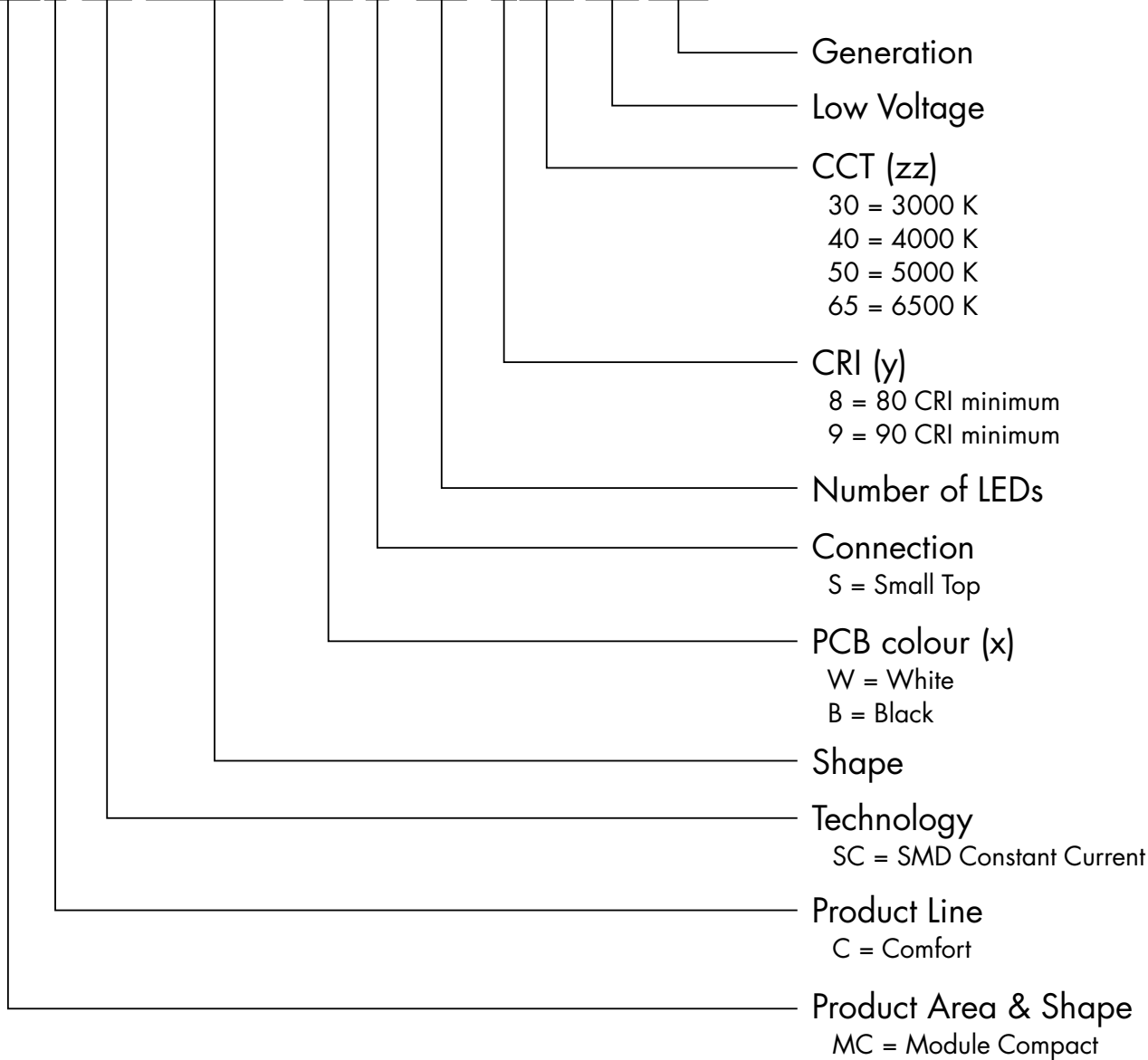
Linear LED Constant Current Drivers

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

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Nomenclature example

MCC SC 62x62/W S/16/830 LV G2



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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. 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 M3 screws. Fixation only with flat or cylinder head screws (M3) (no countersunk screws)
Max. torque: 1.2 Nm (M3)
- 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 2065).
- 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: $\pm 7\%$
 - voltage: $\pm 3\%$
 - 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

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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