LED LINE SMD W2 COMFORT **SELV** GEN. 2 L14/28/56

LED LINE SMD W2 COMFORT **SELV** GEN. 2 L14/28/56

MLC SC W2 LV G2

Typical Applications

Built-in luminaires/general illumination

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

LED Line SMD W2 Comfort SELV Gen. 2 L14/28/56

- **LONG SERVICE LIFE TIME: 93.000 H (L80, B10)**
- **HIGHLY EFFICIENT: UP TO 209 LM/W AT T_P = 50 °C**
- **3 LENGTHS AVAILABLE: 140 / 280 / 560 MM**
- **2 DIFFERENT LUMEN PACKAGES**

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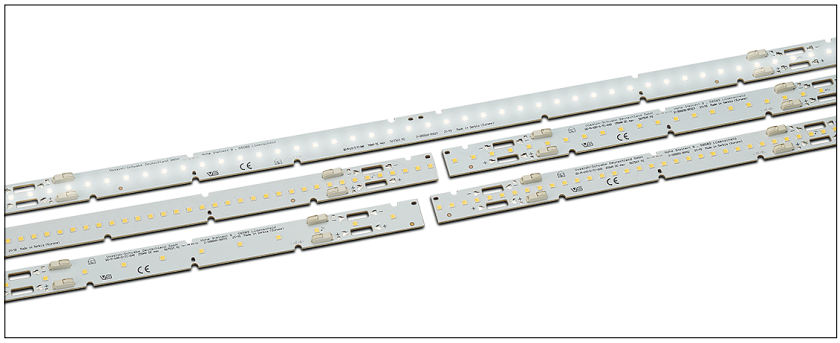
LED Line SMD W2 Comfort SELV Gen. 2 L14/28/56

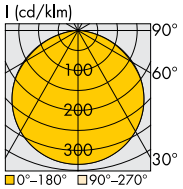


Technical Notes

- LED built-in module for integration into luminaires
- Dimensions:
  MLC SC W2/140: 140x20 mm
  MLC SC W2/280: 280x20 mm
  MLC SC W2/560: 560x20 mm
- Driving current: 50 mA / 75 mA / 100 mA / 150 mA / 175 mA / 200mA / 300 mA / 350 mA / 400 mA / 600 mA / 700 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 https://www.vossloh-schwabe.com/en



Covers and W2 optics

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

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

Electrical Characteristics (Lower Lumen packages/Lower density of LEDs)

at t_p = 50 °C

Type	No. of SMDs	Typ. voltage DC 50 mA V	75 mA V	100 mA V	150 mA V	175 mA V	Temperature coefficient mV/K	Typ. power consumption 50 mA W	75 mA W	100 mA W	150 mA W	175 mA W
LED Line SMD W2 Comfort SELV Gen. 2 – L28												
MLC SC W2/280 x/12/yzz LV G2	12	31.4	31.8	32.3	33.0	33.4	–12.10	1.6	2.4	3.2	5.0	5.8

Voltage and power consumption tolerance: ± 10% | **Use of external LED constant current driver required.**

Type	No. of SMDs	Typ. voltage DC 100 mA V	150 mA V	200 mA V	300 mA V	350 mA V	Temperature coefficient mV/K	Typ. power consumption 100 mA W	150 mA W	200 mA W	300 mA W	350 mA W
LED Line SMD W2 Comfort SELV Gen. 2 – L56												
MLC SC W2/560 x/24/yzz LV G2	24	31.4	31.8	32.3	33.0	33.4	–12.10	3.1	4.8	6.5	9.9	11.7

Voltage and power consumption tolerance: ± 10% | **Use of external LED constant current driver required.**

Electrical Characteristics (Higher Lumen packages/Higher density of LEDs)

at t_p = 50 °C

Type	No. of SMDs	Typ. voltage DC 50 mA V	75 mA V	100 mA V	150 mA V	175 mA V	Temperature coefficient mV/K	Typ. power consumption 50mA W	75 mA W	100 mA W	150 mA W	175 mA W
LED Line SMD W2 Comfort SELV Gen. 2 – L14												
MLC SC W2/140 x/12/yzz LV G2	12	31.4	31.8	32.3	33.0	33.4	–12.10	1.6	2.4	3.2	5.0	5.8

Voltage and power consumption tolerance: ± 10% | **Use of external LED constant current driver required.**

Type	No. of SMDs	Typ. voltage DC 100 mA V	150 mA V	200 mA V	300 mA V	350 mA V	Temperature coefficient mV/K	Typ. power consumption 100 mA W	150 mA W	200 mA W	300 mA W	350 mA W
LED Line SMD W2 Comfort SELV Gen. 2 – L28												
MLC SC W2/280 x/24/yzz LV G2	24	31.4	31.8	32.3	33.0	33.4	–12.10	3.1	4.8	6.5	9.9	11.7

Voltage and power consumption tolerance: ± 10% | **Use of external LED constant current driver required.**

Type	No. of SMDs	Typ. voltage DC 200 mA V	300 mA V	400 mA V	600 mA V	700 mA V	Temperature coefficient mV/K	Typ. power consumption 200 mA W	300 mA W	400 mA W	600 mA W	700 mA W
LED Line SMD W2 Comfort SELV Gen. 2 – L56												
MLC SC W2/560 x/48/yzz LV G2	48	31.4	31.8	32.3	33.0	33.4	–12.10	6.3	9.6	12.9	19.8	23.4

Voltage and power consumption tolerance: ± 10% | **Use of external LED constant current driver required.**

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

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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.	
MLC SC W2/140 x/12/yzz LV G2	175	-20	+80	-20	+70	480
MLC SC W2/280 x/12/yzz LV G2	175					480
MLC SC W2/280 x/24/yzz LV G2	350					960
MLC SC W2/560 x/24/yzz LV G2	350					960
MLC SC W2/560 x/48/yzz LV G2	700					1920
System application of n-modules*	1600					/

***In addition to the system-level current limit of 1600 mA, the maximum current rating of each individual LED module must be observed, as the actual allowable current may be lower depending on the module configuration.**

Operating Life

L80/B10

in hours at measured temperature at t_p point

	All currents		
	40 °C	50 °C	80 °C
All types	> 93.000	> 93.000	> 93.000

Optical Characteristics – CRI > 80 (Lower Lumen packages/Lower density of LEDs)

at t_p = 50 °C

CRI: R_a > 80

Type	Ref. No. Connection "x"			Colour	Correlated colour temp.*	Typ. luminous flux** and typ. efficiency** at										Photometric Code
	top	bottom	small top			50 mA		75 mA		100 mA		150 mA		175 mA		
	(T)	(B)	(S)		K	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	
LED Line SMD W2 Comfort SELV Gen. 2 – L28																
MLC SC W2/280 x/12/827 LV G2	on request	on request	on request	WW	2700	305	196	455	190	595	184	865	175	1000	171	827/359
MLC SC W2/280 x/12/830 LV G2	**573934**	on request	on request	WW	3000	305	196	455	190	595	184	865	175	1000	171	830/359
MLC SC W2/280 x/12/835 LV G2	on request	on request	on request	NW	3500	330	209	485	203	635	197	925	187	1070	183	835/359
MLC SC W2/280 x/12/840 LV G2	**573935**	on request	on request	NW	4000	330	209	485	203	635	197	925	187	1070	183	840/359
MLC SC W2/280 x/12/850 LV G2	on request	on request	on request	CW	5000	330	209	485	203	635	197	925	187	1070	183	850/359
MLC SC W2/280 x/12/865 LV G2	on request	**574246**	on request	CW	6500	330	209	485	203	635	197	925	187	1070	183	865/359

Type	Ref. No. Connection "x"			Colour	Correlated colour temp.*	Typ. luminous flux** and typ. efficiency** at								Photometric Code
	top	bottom	small top			100 mA		150 mA		200 mA		300 mA		350 mA		
	(T)	(B)	(S)		K	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	
LED Line SMD W2 Comfort SELV Gen. 2 – L56																
MLC SC W2/560 x/24/827 LV G2	on request	on request	on request	WW	2700	615	196	905	190	1190	184	1735	175	2000	171	827/359
MLC SC W2/560 x/24/830 LV G2	**573940**	on request	on request	WW	3000	615	196	905	190	1190	184	1735	175	2000	171	830/359
MLC SC W2/560 x/24/835 LV G2	on request	on request	on request	NW	3500	655	209	970	203	1270	197	1855	187	2135	183	835/359
MLC SC W2/560 x/24/840 LV G2	**573941**	on request	on request	NW	4000	655	209	970	203	1270	197	1855	187	2135	183	840/359
MLC SC W2/560 x/24/850 LV G2	on request	on request	on request	CW	5000	655	209	970	203	1270	197	1855	187	2135	183	850/359
MLC SC W2/560 x/24/865 LV G2	**574248**	on request	on request	CW	6500	655	209	970	203	1270	197	1855	187	2135	183	865/359

2700 K and 3000 K = warm white (WW), 3500 K and 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 (T/S)	**L28 / L56 (B)**
48 pcs.	24 pcs.

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Optical Characteristics – CRI > 80 (Higher Lumen packages/Higher density of LEDs - higher efficacy at lower current)

at t_p = 50 °C

CRI: R_a > 80

Type	Ref. No. Connection "x" top (T)	bottom (B)	small top (S)	Colour	Correlated colour temp.* K	Typ. luminous flux** and typ. efficiency** at 50 mA lm	lm/W	75 mA lm	lm/W	100 mA lm	lm/W	150 mA lm	lm/W	175 mA lm	lm/W	Photometric Code
LED Line SMD W2 Comfort SELV Gen. 2 – L14																
MLC SC W2/140 x/12/827 LV G2	on request	—	on request	WW	2700	305	196	455	190	595	184	865	175	1000	171	827/359
MLC SC W2/140 x/12/830 LV G2	**573931**	—	on request	WW	3000	305	196	455	190	595	184	865	175	1000	171	830/359
MLC SC W2/140 x/12/835 LV G2	on request	—	on request	NW	3500	330	209	485	203	635	197	925	187	1070	183	835/359
MLC SC W2/140 x/12/840 LV G2	**573932**	—	**573933**	NW	4000	330	209	485	203	635	197	925	187	1070	183	840/359
MLC SC W2/140 x/12/850 LV G2	on request	—	on request	CW	5000	330	209	485	203	635	197	925	187	1070	183	850/359
MLC SC W2/140 x/12/865 LV G2	**574245**	—	on request	CW	6500	330	209	485	203	635	197	925	187	1070	183	865/359

Type	Ref. No. Connection "x" top (T)	bottom (B)	small top (S)	Colour	Correlated colour temp.* K	Typ. luminous flux** and typ. efficiency** at 100 mA lm	lm/W	150 mA lm	lm/W	200 mA lm	lm/W	300 mA lm	lm/W	350 mA lm	lm/W	Photometric Code
LED Line SMD W2 Comfort SELV Gen. 2 – L28																
MLC SC W2/280 x/24/827 LV G2	on request	on request	on request	WW	2700	615	196	905	190	1190	184	1735	175	2000	171	827/359
MLC SC W2/280 x/24/830 LV G2	**573936**	on request	on request	WW	3000	615	196	905	190	1190	184	1735	175	2000	171	830/359
MLC SC W2/280 x/24/835 LV G2	on request	on request	on request	NW	3500	655	209	970	203	1270	197	1855	187	2135	183	835/359
MLC SC W2/280 x/24/840 LV G2	**573937**	**573938**	**573939**	NW	4000	655	209	970	203	1270	197	1855	187	2135	183	840/359
MLC SC W2/280 x/24/850 LV G2	on request	on request	on request	CW	5000	655	209	970	203	1270	197	1855	187	2135	183	850/359
MLC SC W2/280 x/24/865 LV G2	**574247**	on request	on request	CW	6500	655	209	970	203	1270	197	1855	187	2135	183	865/359

Type	Ref. No. Connection "x" top (T)	bottom (B)	small top (S)	Colour	Correlated colour temp.* K	Typ. luminous flux** and typ. efficiency** at 200 mA lm	lm/W	300 mA lm	lm/W	400 mA lm	lm/W	600 mA lm	lm/W	700 mA lm	lm/W	Photometric Code
LED Line SMD W2 Comfort SELV Gen. 2 – L56																
MLC SC W2/560 x/48/827 LV G2	on request	on request	on request	WW	2700	1230	196	1810	190	2375	184	3470	175	4000	171	827/359
MLC SC W2/560 x/48/830 LV G2	**573942**	on request	on request	WW	3000	1230	196	1810	190	2375	184	3470	175	4000	171	830/359
MLC SC W2/560 x/48/835 LV G2	on request	on request	on request	NW	3500	1315	209	1935	203	2540	197	3705	187	4275	183	835/359
MLC SC W2/560 x/48/840 LV G2	**573660**	**573943**	**573944**	NW	4000	1315	209	1935	203	2540	197	3705	187	4275	183	840/359
MLC SC W2/560 x/48/850 LV G2	on request	on request	on request	CW	5000	1315	209	1935	203	2540	197	3705	187	4275	183	850/359
MLC SC W2/560 x/48/865 LV G2	**573945**	on request	on request	CW	6500	1315	209	1935	203	2540	197	3705	187	4275	183	865/359

2700 K and 3000 K = warm white (WW), 3500 K and 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)

L14 (T/S)	L28 / L56 (T/S)	L28 / L56 (B)
96 pcs.	48 pcs.	24 pcs.

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Optical Characteristics – CRI > 90 (Lower Lumen packages/Lower density of LEDs)

at t_p = 50 °C

CRI: R_a > 90

Type	Ref. No. Connection "x" top (T)	bottom (B)	small top (S)	Colour	Correlated colour temp.* K	Typ. luminous flux** and typ. efficiency** at 50 mA lm	lm/W	75 mA lm	lm/W	100 mA lm	lm/W	150 mA lm	lm/W	175 mA lm	lm/W	Photometric Code
LED Line SMD W2 Comfort SELV Gen. 2 – L28																
MLC SC W2/280 x/12/927 LV G2	on request	on request	on request	WW	2700	245	155	360	150	470	146	690	139	795	136	927/359
MLC SC W2/280 x/12/930 LV G2	on request	on request	on request	WW	3000	265	169	390	164	510	159	745	151	860	147	930/359
MLC SC W2/280 x/12/935 LV G2	on request	on request	on request	NW	3500	265	169	390	164	510	159	745	151	860	147	935/359
MLC SC W2/280 x/12/940 LV G2	on request	on request	on request	NW	4000	285	182	420	177	555	171	805	163	930	159	940/359
MLC SC W2/280 x/12/950 LV G2	on request	on request	on request	CW	5000	285	182	420	177	555	171	805	163	930	159	950/359
MLC SC W2/280 x/12/965 LV G2	on request	on request	on request	CW	6500	285	182	420	177	555	171	805	163	930	159	965/359

Type	Ref. No. Connection "x" top (T)	bottom (B)	small top (S)	Colour	Correlated colour temp.* K	Typ. luminous flux** and typ. efficiency** at 100 mA lm	lm/W	150 mA lm	lm/W	200 mA lm	lm/W	300 mA lm	lm/W	350 mA lm	lm/W	Photometric Code
LED Line SMD W2 Comfort SELV Gen. 2 – L56																
MLC SC W2/560 x/24/927 LV G2	on request	on request	on request	WW	2700	485	155	720	150	940	146	1375	139	1585	136	927/359
MLC SC W2/560 x/24/930 LV G2	on request	on request	on request	WW	3000	530	169	780	164	1025	159	1495	151	1725	147	930/359
MLC SC W2/560 x/24/935 LV G2	on request	on request	on request	NW	3500	530	169	780	164	1025	159	1495	151	1725	147	935/359
MLC SC W2/560 x/24/940 LV G2	on request	on request	on request	NW	4000	570	182	845	177	1105	171	1615	163	1860	159	940/359
MLC SC W2/560 x/24/950 LV G2	on request	on request	on request	CW	5000	570	182	845	177	1105	171	1615	163	1860	159	950/359
MLC SC W2/560 x/24/965 LV G2	on request	on request	on request	CW	6500	570	182	845	177	1105	171	1615	163	1860	159	965/359

2700 K and 3000 K = warm white (WW), 3500 K and 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 (T/S)	**L28 / L56 (B)**
48 pcs.	24 pcs.

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Optical Characteristics – CRI > 90 (Higher Lumen packages/Higher density of LEDs - higher efficacy at lower current)

at t_p = 50 °C

CRI: R_a > 90

Type	Ref. No. Connection "x" top (T)	bottom (B)	small top (S)	Colour	Correlated colour temp.* K	Typ. luminous flux** and typ. efficiency** at 50 mA lm	lm/W	75 mA lm	lm/W	100 mA lm	lm/W	150 mA lm	lm/W	175 mA lm	lm/W	Photometric Code
LED Line SMD W2 Comfort SELV Gen. 2 – L14																
MLC SC W2/140 x/12/927 LV G2	on request	–	on request	WW	2700	245	155	360	150	470	146	690	139	795	136	927/359
MLC SC W2/140 x/12/930 LV G2	on request	–	on request	WW	3000	265	169	390	164	510	159	745	151	860	147	930/359
MLC SC W2/140 x/12/935 LV G2	on request	–	on request	NW	3500	265	169	390	164	510	159	745	151	860	147	935/359
MLC SC W2/140 x/12/940 LV G2	on request	–	on request	NW	4000	285	182	420	177	555	171	805	163	930	159	940/359
MLC SC W2/140 x/12/950 LV G2	on request	–	on request	CW	5000	285	182	420	177	555	171	805	163	930	159	950/359
MLC SC W2/140 x/12/965 LV G2	on request	–	on request	CW	6500	285	182	420	177	555	171	805	163	930	159	965/359

Type	Ref. No. Connection "x" top (T)	bottom (B)	small top (S)	Colour	Correlated colour temp.* K	Typ. luminous flux** and typ. efficiency** at 100 mA lm	lm/W	150 mA lm	lm/W	200 mA lm	lm/W	300 mA lm	lm/W	350 mA lm	lm/W	Photometric Code
LED Line SMD W2 Comfort SELV Gen. 2 – L28																
MLC SC W2/280 x/24/927 LV G2	on request	on request	on request	WW	2700	485	155	720	150	940	146	1375	139	1585	136	927/359
MLC SC W2/280 x/24/930 LV G2	on request	on request	on request	WW	3000	530	169	780	164	1025	159	1495	151	1725	147	930/359
MLC SC W2/280 x/24/935 LV G2	on request	on request	on request	NW	3500	530	169	780	164	1025	159	1495	151	1725	147	935/359
MLC SC W2/280 x/24/940 LV G2	on request	on request	on request	NW	4000	570	182	845	177	1105	171	1615	163	1860	159	940/359
MLC SC W2/280 x/24/950 LV G2	on request	on request	on request	CW	5000	570	182	845	177	1105	171	1615	163	1860	159	950/359
MLC SC W2/280 x/24/965 LV G2	on request	on request	on request	CW	6500	570	182	845	177	1105	171	1615	163	1860	159	965/359

Type	Ref. No. Connection "x" top (T)	bottom (B)	small top (S)	Colour	Correlated colour temp.* K	Typ. luminous flux** and typ. efficiency** at 200 mA lm	lm/W	300 mA lm	lm/W	400 mA lm	lm/W	600 mA lm	lm/W	700 mA lm	lm/W	Photometric Code
LED Line SMD W2 Comfort SELV Gen. 2 – L56																
MLC SC W2/560 x/48/927 LV G2	**573661**	on request	on request	WW	2700	975	155	1435	150	1885	146	2750	139	3170	136	927/359
MLC SC W2/560 x/48/930 LV G2	on request	on request	on request	WW	3000	1060	169	1560	164	2050	159	2990	151	3445	147	930/359
MLC SC W2/560 x/48/935 LV G2	on request	on request	on request	NW	3500	1060	169	1560	164	2050	159	2990	151	3445	147	935/359
MLC SC W2/560 x/48/940 LV G2	on request	on request	on request	NW	4000	1145	182	1685	177	2210	171	3230	163	3725	159	940/359
MLC SC W2/560 x/48/950 LV G2	on request	on request	on request	CW	5000	1145	182	1685	177	2210	171	3230	163	3725	159	950/359
MLC SC W2/560 x/48/965 LV G2	on request	on request	on request	CW	6500	1145	182	1685	177	2210	171	3230	163	3725	159	965/359

2700 K and 3000 K = warm white (WW), 3500 K and 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)		
L14 (T/S)	**L28 / L56 (T/S)**	**L28 / L56 (B)**
96 pcs.	48 pcs.	24 pcs.

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Logistics Data

Product Dimension mm	Product description	Packaging unit	Dimension of box mm	Pieces per box	Gross weight of box g	Weight per piece g	Box pieces per pallet	Pieces per pallet	Gross weight of pallet kg	Dimension of pallet mm
LED Line SMD W2 Comfort SELV Gen. 2 – L14										
140x20	MLC SC W2/140 x/A/yzz LV G2	Carton box	290x190x57	96	813	7	56	5376	69.6	1200x800x375
LED Line SMD W2 Comfort SELV Gen. 2 – L28										
280x20	MLC SC W2/280 x/A/yzz LV G2	Carton box	290x190x57	48	832.8	15	112	5376	117.3	1200x800x605
280x20	MLC SC W2/280 B/A/yzz LV G2	Carton box	290x190x57	24	472.8	15	182	4368	110	1200x800x890
LED Line SMD W2 Comfort SELV Gen. 2 – L56										
560x20	MLC SC W2/560 x/A/yzz LV G2	Carton box	570x190x57	48	1619.2	30	104	4992	192.4	1200x800x890
560x20	MLC SC W2/560 B/A/yzz LV G2	Carton box	570x190x57	24	899.2	30	104	2496	117.5	1200x800x890

X - Connection option (Top connector or Small top connector)
B - Bottom connector
A - Number of components (12, 24, 48)
yzz - CCT&CRI combination (830, 840...)

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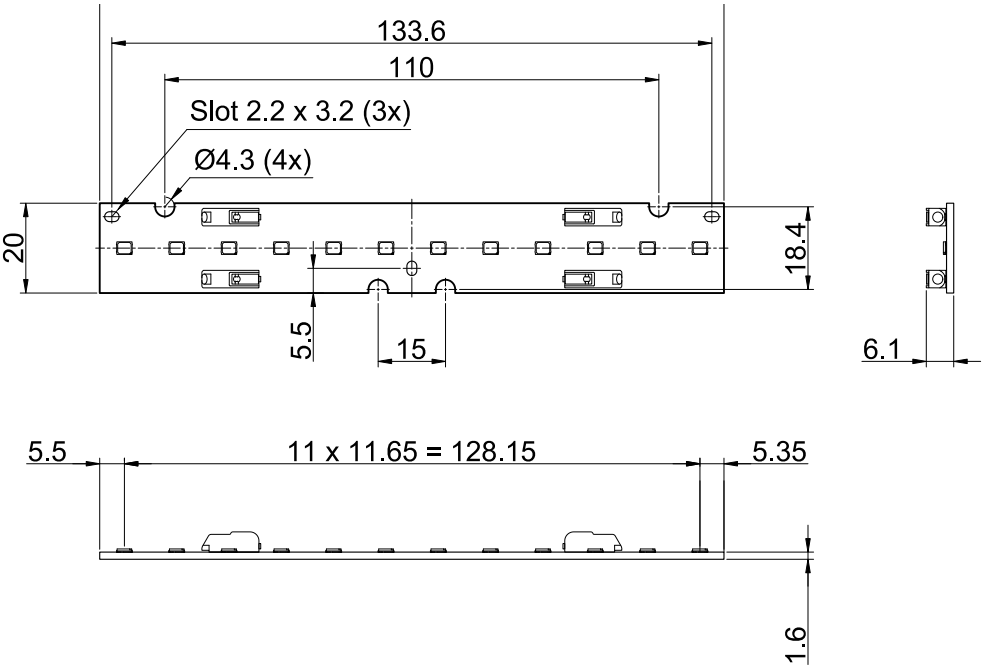
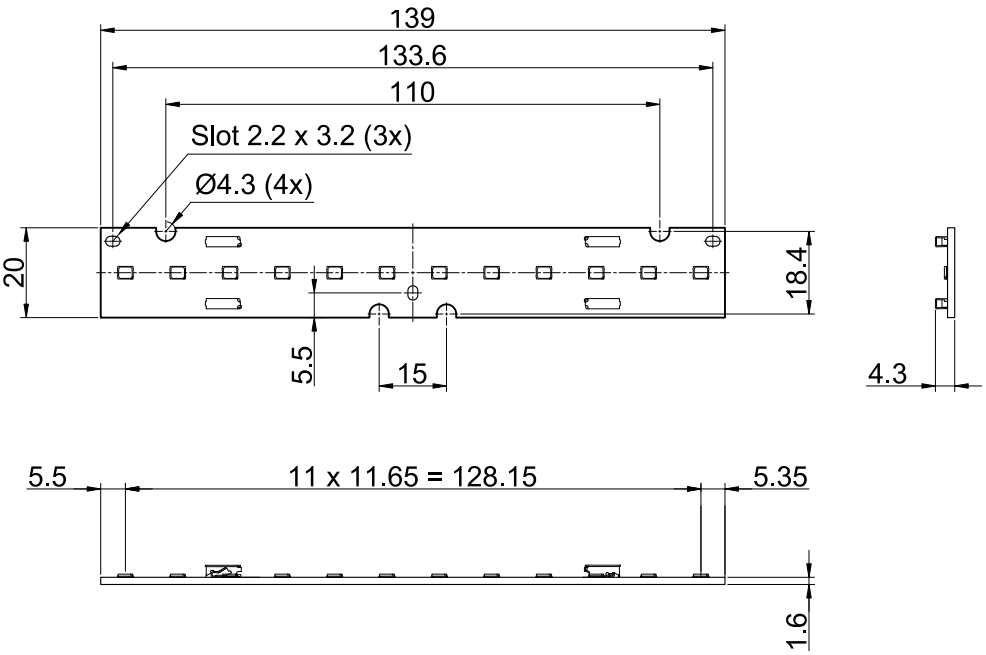
Mechanical Dimensions

T = Top Connection
B = Bottom Connection
S = Small Top Connection

MLC SC W2/140 T/12/yzz LV G2



MLC SC W2/140 S/12/yzz LV G2



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Mechanical Dimensions

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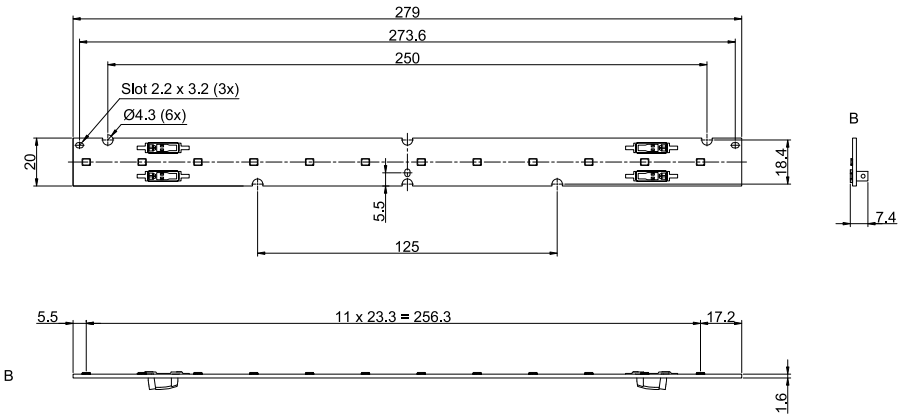
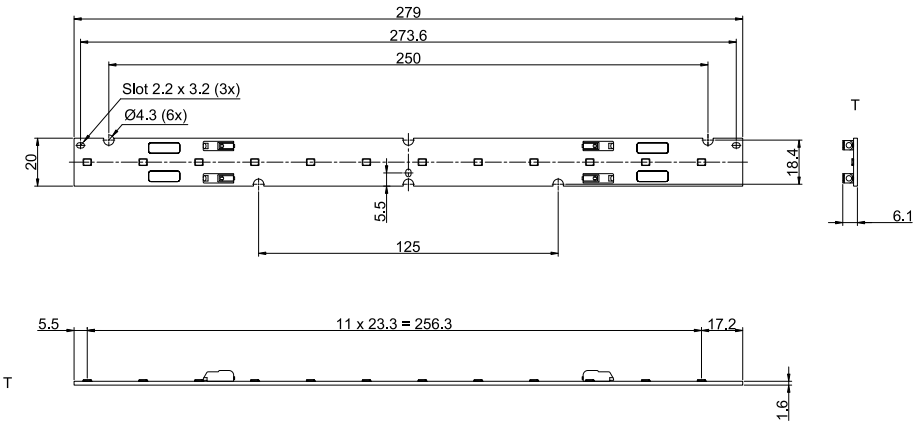
B = Bottom Connection
S = Small Top Connection

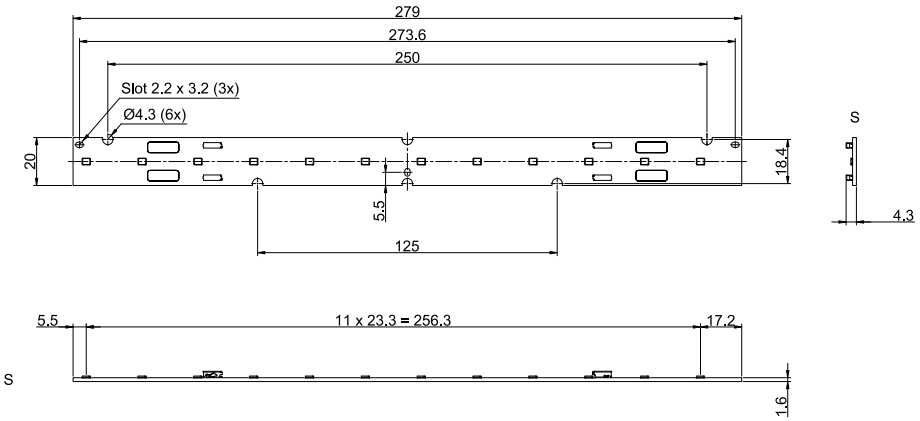
MLC SC W2/280 B/12/yzz LV G2



MLC SC W2/280 T/12/yzz LV G2



MLC SC W2/280 S/12/yzz LV G2



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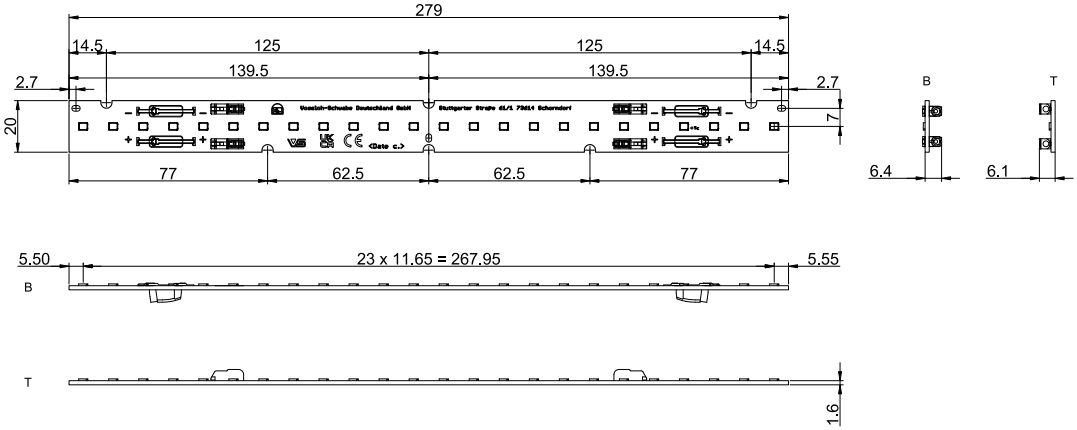
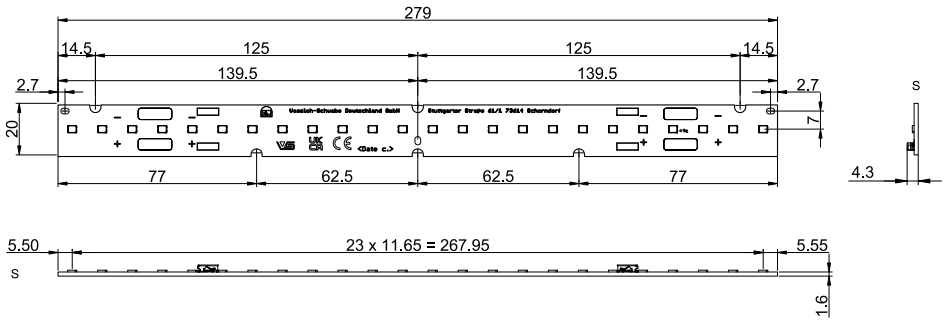
MLC SC W2/280 x/24/yzz LV G2



MLC SC W2/280 S/24/yzz LV G2



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Mechanical Dimensions

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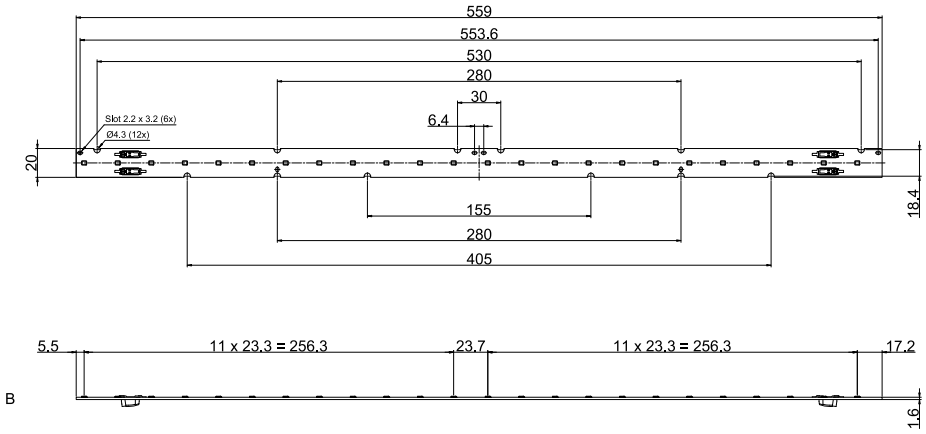
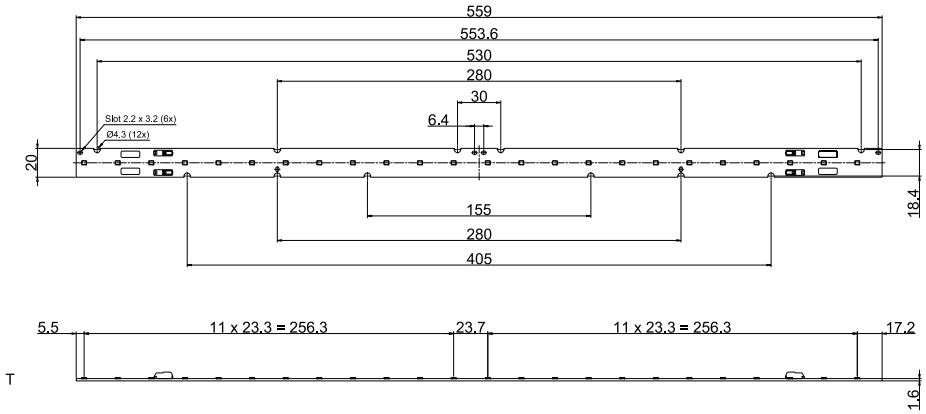
B = Bottom Connection
S = Small Top Connection

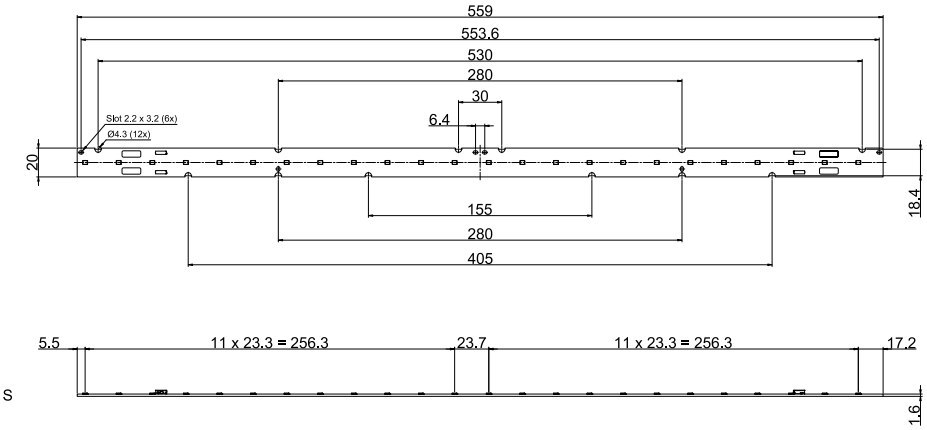
MLC SC W2/560 B/12/yzz LV G2



MLC SC W2/560 T/12/yzz LV G2



MLC SC W2/560 S/12/yzz LV G2



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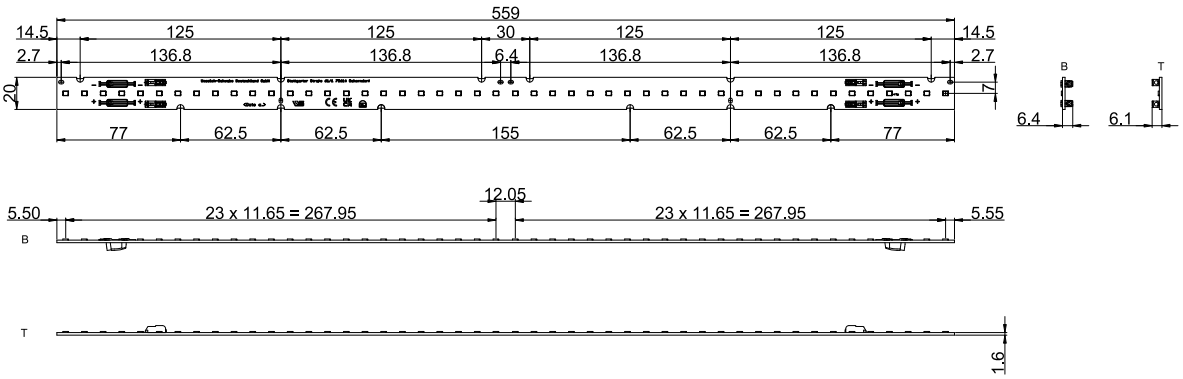
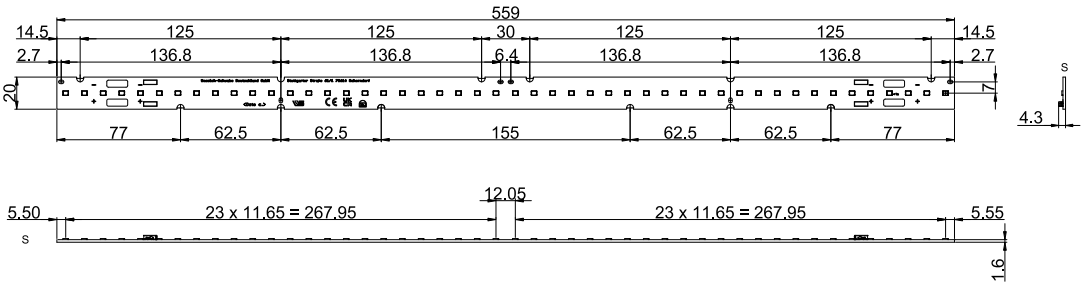
Mechanical Dimensions

T = Top Connection
B = Bottom Connection
S = Small Top Connection

MLC SC W2/560 x/24/yzz LV G2



MLC SC W2/560 S/24/yzz LV G2



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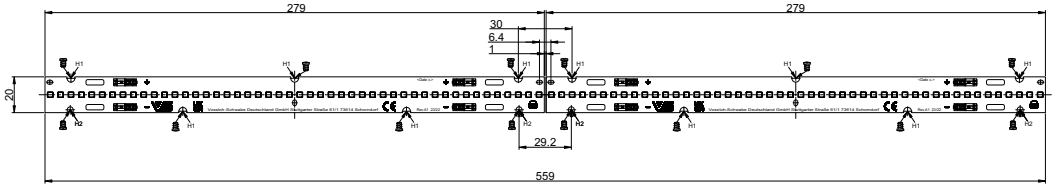
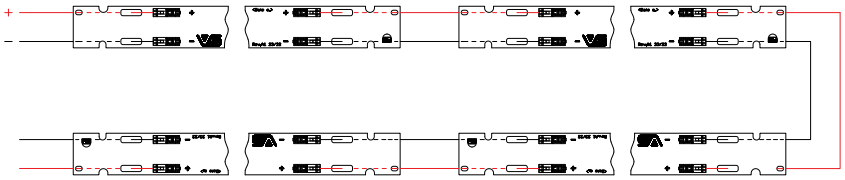
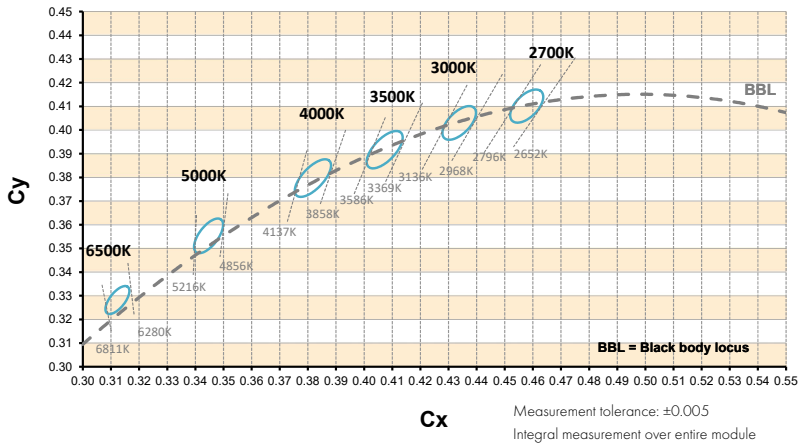
Connection Example

- 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 1.6 A.
  I Driver = I Module x n (the number of modules)
- The clearance and creepage distances are designed for working voltages up to 300 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) and 50 V DC (reinforced insulation).
- Max. diameter of screw head (M4): Ø 8 mm for H1 holes
- Max. diameter of screw head (M3): Ø 5.5 mm for H2 holes
- Only the marked holes are fixing holes for screws M4. Please do not use other holes for fixation!





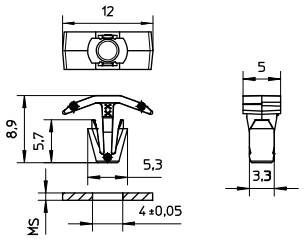
Bins



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 Driver

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

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Nomenclature example

MLC SC W2/280 T/24/840 LV G2

- **Generation**
- **SELV**
- **CCT**
  - 27 = 2700 K
  - 30 = 3000 K
  - 40 = 4000 K
  - 50 = 5000 K
  - 65 = 6500 K
- **CRI**
  - 8 = 80 CRI minimum
- **Number of LEDs**
- **Connection**
  - T = Top
  - B = Bottom
  - S = Small Top
- **Length**
  - 140 = 140 mm
  - 280 = 280 mm
  - 560 = 560 mm
- **Width**
  - W2 = 20 mm
- **Technology**
  - SC = SMD Constant Current
- **Product Line**
  - C = Comfort
- **Product Area & Shape**
  - ML = Module Linear

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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 T variant; BJB 46.111.1001.50 for B variant; WAGO 2065 for S 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

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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