

LED LINE SMD W2 COMFORT TUNEABLE WHITE



LED LINE SMD W2 COMFORT TUNEABLE WHITE

MLC SC W2 TW G1

Typical Applications

Built-in luminaires/general illumination

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



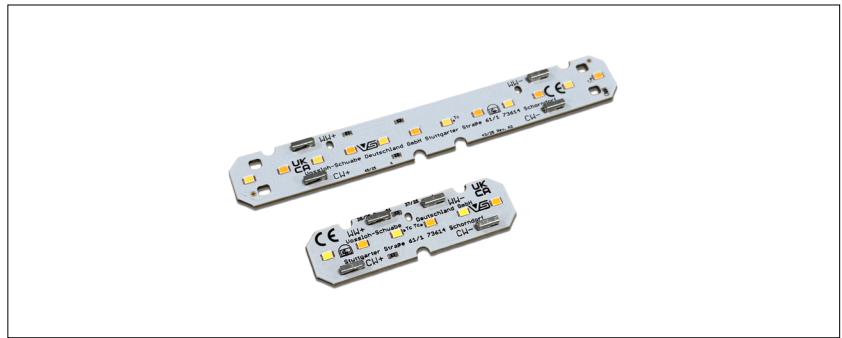
LED Line SMD W2 Comfort Tuneable White

- **LONG SERVICE LIFE TIME: 93.000 H (L80, B10)**
- **HIGHLY EFFICIENT: UP TO 209 LM/W
AT T_p = 50 °C**
- **2 LENGTHS AVAILABLE: 70 / 140 MM**
- **2 DIFFERENT LUMEN PACKAGES**

LED Line SMD W2 Comfort Tuneable White

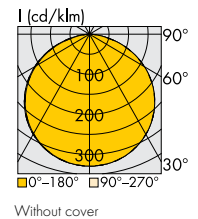
Technical Notes

- LED built-in module for integration into luminaires
- Dimensions (excl. optics) LxWxH
6 LEDs: 70x20x4.3 mm
12 LEDs: 140x20x4.3 mm
- Driving currents: 150mA / 250mA / 350mA / 500mA / 600mA / 700mA
- Push-in terminals for quick and simple wiring
- Beam angle: 120°



Typical Light Distribution Curve

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



Electrical Characteristics

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

Type	No. of LEDs per channel	Typ. voltage DC						Temperature coefficient [mV/K]	Typ. power consumption					
		150 mA	250 mA	350 mA	500 mA	600 mA	700 mA		150 mA	250 mA	350 mA	500 mA	600 mA	700 mA
		V	V	V	V	V	V		W	W	W	W	W	W

LED Line SMD W2 Comfort Tuneable White - L07

MLC SC W2/70 S/6/x27/x65 G1	3	2.6	2.7	2.7	2.8	2.8	2.8	-1.01	0.4	0.7	0.9	1.4	1.7	2.0
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LED Line SMD W2 Comfort Tuneable White - L14

MLC SC W2/140 S/12/x27/x65 G1	6	5.2	5.3	5.4	5.5	5.6	5.7	-2.02	0.8	1.3	1.9	2.8	3.4	4.0
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*Per channel. Voltage and power consumption tolerance: $\pm 10\%$. Use of external LED constant current driver required.

Maximum Ratings

Exceeding the maximum ratings can lead to destruction of the module.

Type	Operation current mA	Operation temperature range at T_c point		Storage temperature range		Max. allowed repetitive peak current mA
		$^\circ\text{C min.}$	$^\circ\text{C max.}$	$^\circ\text{C min.}$	$^\circ\text{C max.}$	
All types	700	-20	+80	-20	+70	1440

Operating Life

L80/B10

in hours at measured temperature at T_c point

	150 mA			250 mA			350 mA			500 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 $^\circ\text{C}$
All types	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>93.000	>92.000

These values do not refer to the colour temperature. | Lxx/Byy (lumen maintenance at xx%, failure rate yy%)

	600 mA			700 mA		
	40 $^\circ\text{C}$	50 $^\circ\text{C}$	80 $^\circ\text{C}$	40 $^\circ\text{C}$	50 $^\circ\text{C}$	80 $^\circ\text{C}$
All types	>93.000	>93.000	>86.000	>93.000	>93.000	>86.000

These values do not refer to the colour temperature. | Lxx/Byy (lumen maintenance at xx%, failure rate yy%)

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LED Line SMD W2 Comfort Tuneable White

Optical Characteristics

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

CRI** ≥ 80

Type	Ref. No.	Colour	Correl. colour	Luminous flux* (lm) and typ. efficiency (lm/W)												Photometric code
				150 mA		250 mA		350 mA		500 mA		600 mA		700 mA		
				typ.	typ.	typ.	typ.	typ.	typ.	typ.	typ.	typ.	typ.	typ.	typ.	
				lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	

LED Line SMD W2 Comfort Tuneable White - 6 LEDs

MLC SC W2/70 S/6/827/865 G1	574369	WW	2700	75	196	125	188	170	181	240	172	280	167	325	162	359
		CW	6500	80	209	135	201	185	193	255	184	300	179	345	174	

LED Line SMD W2 Comfort Tuneable White - 12 LEDs

MLC SC W2/140 S/12/827/865 G1	574370	WW	2700	155	196	250	188	345	181	480	172	565	167	650	162	359
		CW	6500	165	209	265	201	365	193	510	184	605	179	695	174	

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

Optical Characteristics

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

CRI** ≥ 90

Type	Ref. No.	Colour	Correl. colour	Luminous flux* (lm) and typ. efficiency (lm/W)												Photometric code
				150 mA		250 mA		350 mA		500 mA		600 mA		700 mA		
				typ.	typ.	typ.	typ.	typ.	typ.	typ.	typ.	typ.	typ.	typ.	typ.	
				K	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	

LED Line SMD W2 Comfort Tuneable White - 6 LEDs

MLC SC W2/70 S/6/927/965 G1	on req.	WW	2700	60	155	100	149	135	143	190	137	225	133	255	129	359
		CW	6500	70	182	115	175	160	168	220	160	265	156	300	151	

LED Line SMD W2 Comfort Tuneable White - 12 LEDs

MLC SC W2/140 S/12/927/965 G1	on req.	WW	2700	120	155	200	149	270	143	380	137	450	133	515	129	359
		CW	6500	145	182	235	175	320	168	445	160	525	156	605	151	

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

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LED Line SMD W2 Comfort Tuneable White

Tuneable Characteristics – CRI 80 - at $t_{c1} / t_{c2} (t_p) = 50^\circ\text{C}$; without secondary optics

CCT (K) for type MLC SC W2/70 S/6/827/865 G1													
Channel 1 / 2700 K	700 mA	2760	3245	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed
	650 mA	2760	3245	3385	3625	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed
	600 mA	2755	3245	3385	3625	3730	3830	3925	4015	4095	not allowed	not allowed	not allowed
	550 mA	2755	3280	3425	3680	3790	3895	3995	4085	4165	4245	not allowed	not allowed
	500 mA	2755	3320	3475	3745	3860	3970	4070	4165	4250	4330	4405	not allowed
	450 mA	2755	3370	3535	3820	3940	4055	4160	4255	4345	4425	4505	not allowed
	400 mA	2750	3430	3610	3910	4040	4155	4265	4360	4455	4540	4615	4615
	350 mA	2750	3505	3695	4015	4150	4275	4385	4485	4580	4665	4745	4745
	300 mA	2750	3600	3810	4150	4290	4415	4530	4635	4730	4815	4895	4895
	200 mA	2745	3890	4140	4525	4675	4810	4925	5030	5120	5205	5280	5280
	150 mA	2720	4135	4410	4810	4960	5090	5205	5300	5390	5470	5540	5540
	0 mA	0	6725	6725	6745	6745	6760	6760	6780	6780	6815	6795	6815
Operating current		0 mA	150 mA	200 mA	300 mA	350 mA	400 mA	450 mA	500 mA	550 mA	600 mA	650 mA	700 mA
Channel 2 / 6500 K													

Typ. luminous flux (lm) for type MLC SC W2/70 S/6/827/865 G1													
Channel 1 / 2700 K	700 mA	325	405	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed
	650 mA	305	385	410	460	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed
	600 mA	280	365	390	440	465	490	515	540	560	not allowed	not allowed	not allowed
	550 mA	260	345	370	420	445	470	495	515	540	565	not allowed	not allowed
	500 mA	240	320	345	400	420	445	470	495	520	540	565	not allowed
	450 mA	215	300	325	375	400	425	450	470	495	520	540	not allowed
	400 mA	195	275	305	355	380	400	425	450	475	495	520	540
	350 mA	170	255	280	330	355	380	405	425	450	475	495	520
	300 mA	150	230	255	305	330	355	380	405	425	450	475	495
	200 mA	100	185	210	260	285	310	335	355	380	405	425	450
	150 mA	75	160	185	235	260	285	310	330	355	380	400	425
	0 mA	0	80	110	160	185	210	230	255	280	300	325	345
Operating current		0 mA	150 mA	200 mA	300 mA	350 mA	400 mA	450 mA	500 mA	550 mA	600 mA	650 mA	700 mA
Channel 2 / 6500 K													

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LED Line SMD W2 Comfort Tuneable White

Tuneable Characteristics – CRI 80 - at $t_c1 / t_c2 (t_p) = 50\text{ °C}$; without secondary optics

CCT (K) for type MLC SC W2/140 S/12/827/865 G1													
Channel 1 / 2700 K	700 mA	2760	3245	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed
	650 mA	2760	3245	3385	3625	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed
	600 mA	2755	3245	3385	3625	3730	3830	3925	4015	4095	not allowed	not allowed	not allowed
	550 mA	2755	3280	3425	3680	3790	3895	3995	4085	4165	4245	not allowed	not allowed
	500 mA	2755	3320	3475	3745	3860	3970	4070	4165	4250	4330	4405	not allowed
	450 mA	2755	3370	3535	3820	3940	4055	4160	4255	4345	4425	4505	not allowed
	400 mA	2750	3430	3610	3910	4040	4155	4265	4360	4455	4540	4615	4615
	350 mA	2750	3505	3695	4015	4150	4275	4385	4485	4580	4665	4745	4745
	300 mA	2750	3600	3810	4150	4290	4415	4530	4635	4730	4815	4895	4895
	200 mA	2745	3890	4140	4525	4675	4810	4925	5030	5120	5205	5280	5280
	150 mA	2720	4135	4410	4810	4960	5090	5205	5300	5390	5470	5540	5540
	0 mA	0	6725	6725	6745	6745	6760	6760	6780	6780	6815	6795	6815
Operating current		0 mA	150 mA	200 mA	300 mA	350 mA	400 mA	450 mA	500 mA	550 mA	600 mA	650 mA	700 mA
Channel 2 / 6500 K													

Typ. luminous flux (lm) for type MLC SC W2/140 S/12/827/865 G1													
Channel 1 / 2700 K	700 mA	650	810	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed
	650 mA	605	770	820	920	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed
	600 mA	565	730	780	880	930	980	1030	1080	1120	not allowed	not allowed	not allowed
	550 mA	520	690	740	840	890	940	985	1030	1080	1130	not allowed	not allowed
	500 mA	480	640	690	800	840	890	945	990	1040	1080	1130	not allowed
	450 mA	435	600	650	750	800	850	900	945	990	1035	1080	not allowed
	400 mA	390	550	605	710	755	805	850	900	945	990	1035	1080
	350 mA	345	510	560	660	710	760	810	850	900	945	990	1035
	300 mA	295	460	510	610	665	710	760	810	850	900	945	990
	200 mA	205	370	420	520	570	620	670	710	760	810	850	895
	150 mA	155	320	370	470	520	570	620	660	710	760	800	850
	0 mA	0	165	215	315	365	415	465	510	560	605	650	695
Operating current		0 mA	150 mA	200 mA	300 mA	350 mA	400 mA	450 mA	500 mA	550 mA	600 mA	650 mA	700 mA
Channel 2 / 6500 K													

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LED Line SMD W2 Comfort Tuneable White

Tuneable Characteristics – CRI 90 - at $t_{c1} / t_{c2} (t_p) = 50^\circ\text{C}$; without secondary optics

CCT (K) for type MLC SC W2/70 S/6/927/965 G1													
Channel 1 / 2700 K	700 mA	2760	3235	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed
	650 mA	2760	3260	3400	3525	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed
	600 mA	2755	3290	3435	3695	3805	3910	4010	4100	4185	not allowed	not allowed	not allowed
	550 mA	2755	3325	3480	3750	3870	3975	4075	4170	4255	4255	not allowed	not allowed
	500 mA	2755	3370	3535	3820	3940	4055	4155	4255	4340	4340	4500	not allowed
	450 mA	2750	3425	3600	3895	4025	4140	4250	4350	4440	4440	4600	not allowed
	400 mA	2750	3485	3675	3990	4125	4245	4355	4455	4550	4635	4715	4785
	350 mA	2750	3565	3770	4105	4240	4365	4480	4585	4680	4765	4845	4915
	300 mA	2750	3665	3885	4240	4385	4510	4630	4730	4825	4915	4990	5065
	200 mA	2745	3970	4230	4620	4775	4905	5020	5125	5215	5295	5370	5440
	150 mA	2745	4225	4505	4905	5055	5185	5295	5390	5475	5555	5620	5685
	0 mA	0	6715	6725	6745	6750	6760	6770	6780	6785	6795	6805	6815
Operating current		0 mA	150 mA	200 mA	300 mA	350 mA	400 mA	450 mA	500 mA	550 mA	600 mA	650 mA	700 mA
Channel 2 / 6500 K													

Typ. luminous flux (lm) for type MLC SC W2/70 S/6/927/965 G1													
Channel 1 / 2700 K	700 mA	255	330	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed
	650 mA	240	310	335	380	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed
	600 mA	225	295	320	360	385	410	425	445	465	not allowed	not allowed	not allowed
	550 mA	215	280	300	345	370	390	410	430	450	470	not allowed	not allowed
	500 mA	190	260	285	330	350	370	390	410	430	450	470	not allowed
	450 mA	170	245	265	310	330	355	375	395	415	435	455	not allowed
	400 mA	155	225	250	290	315	335	355	375	395	415	435	455
	350 mA	135	210	230	275	295	315	340	360	380	400	420	440
	300 mA	120	190	210	255	275	300	320	340	360	380	400	420
	200 mA	80	150	175	220	240	260	280	305	325	345	365	380
	150 mA	60	130	155	200	220	240	265	285	305	325	345	365
	0 mA	0	70	95	140	160	180	200	220	245	265	280	300
Operating current		0 mA	150 mA	200 mA	300 mA	350 mA	400 mA	450 mA	500 mA	550 mA	600 mA	650 mA	700 mA
Channel 2 / 6500 K													

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LED Line SMD W2 Comfort Tuneable White

Tuneable Characteristics – CRI 90 - at $t_{c1} / t_{c2} (t_p) = 50^\circ\text{C}$; without secondary optics

CCT (K) for type MLC SC W2/140 S/12/927/965 G1													
Channel 1 / 2700 K	700 mA	2760	3235	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed
	650 mA	2760	3260	3400	3525	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed
	600 mA	2755	3290	3435	3695	3805	3910	4010	4100	4185	not allowed	not allowed	not allowed
	550 mA	2755	3325	3480	3750	3870	3975	4075	4170	4255	4255	not allowed	not allowed
	500 mA	2755	3370	3535	3820	3940	4055	4155	4255	4340	4340	4500	not allowed
	450 mA	2750	3425	3600	3895	4025	4140	4250	4350	4440	4440	4600	not allowed
	400 mA	2750	3485	3675	3990	4125	4245	4355	4455	4550	4635	4715	4785
	350 mA	2750	3565	3770	4105	4240	4365	4480	4585	4680	4765	4845	4915
	300 mA	2750	3665	3885	4240	4385	4510	4630	4730	4825	4915	4990	5065
	200 mA	2745	3970	4230	4620	4775	4905	5020	5125	5215	5295	5370	5440
	150 mA	2745	4225	4505	4905	5055	5185	5295	5390	5475	5555	5620	5685
	0 mA	0	6715	6725	6745	6750	6760	6770	6780	6785	6795	6805	6815
Operating current		0 mA	150 mA	200 mA	300 mA	350 mA	400 mA	450 mA	500 mA	550 mA	600 mA	650 mA	700 mA
Channel 2 / 6500 K													

Typ. luminous flux (lm) for type MLC SC W2/140 S/12/927/965 G1													
Channel 1 / 2700 K	700 mA	510	660	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed
	650 mA	480	620	670	760	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed	not allowed
	600 mA	450	590	640	720	770	820	850	890	930	not allowed	not allowed	not allowed
	550 mA	430	560	600	690	740	780	820	860	900	940	not allowed	not allowed
	500 mA	380	520	570	660	700	740	780	820	860	900	940	not allowed
	450 mA	340	490	530	620	660	710	750	790	830	870	910	not allowed
	400 mA	310	450	500	580	630	670	710	750	790	830	870	910
	350 mA	270	420	460	550	590	630	680	720	760	800	840	880
	300 mA	240	380	420	510	550	600	640	680	720	760	800	840
	200 mA	160	300	350	440	480	520	560	610	650	690	730	760
	150 mA	120	260	310	400	440	480	530	570	610	650	690	730
	0 mA	0	140	190	280	320	360	400	440	490	530	560	600
Operating current		0 mA	150 mA	200 mA	300 mA	350 mA	400 mA	450 mA	500 mA	550 mA	600 mA	650 mA	700 mA
Channel 2 / 6500 K													

Logistics Data

Product	Product description	Packaging	Dimension	Pieces	Gross weight	Weight	Box pieces	Pieces	Gross weight	Dimension of pallet
Dimension		unit	of box	per box	of box	per piece	per pallet	per pallet	of pallet	
mm			mm		g	g			kg	mm

LED Line SMD W2 Comfort Tuneable White

70x20	MLC SC W2/70 S/6/yz/yz G1	Carton box	213x185x67	120	575	4	50	6000	52.8	1200x800x480
140x20	MLC SC W2/140 S/12/yz/yz G1	Carton box	290x190x57	96	820	8	56	5376	69.9	1200x800x480

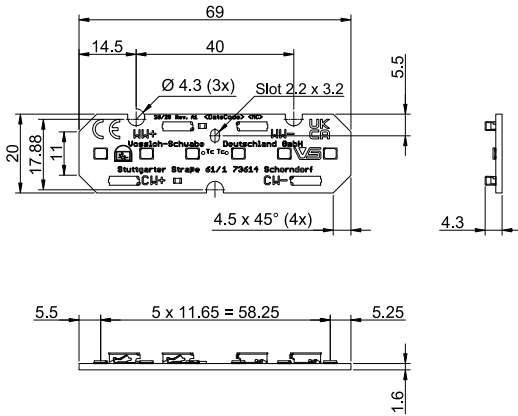
yz - CCT&CRI combination (827, 865...)

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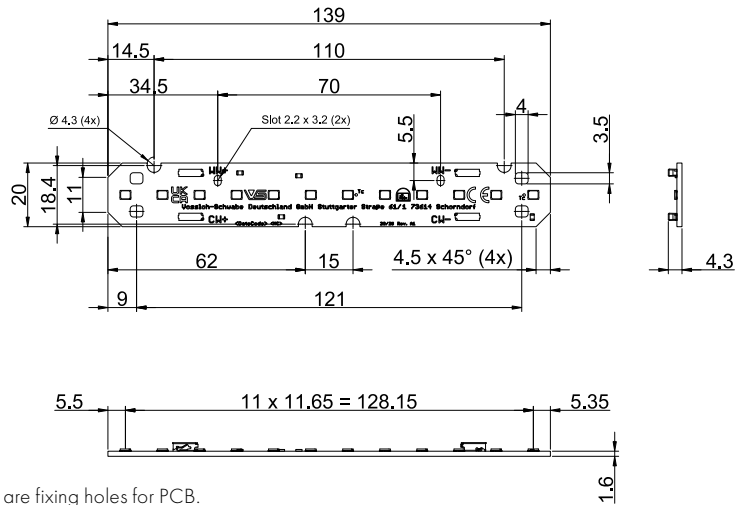
LED Line SMD W2 Comfort Tuneable White

Mechanical Dimensions

MLC SC W2/70 S/6/yz/yz G1



MLC SC W2/140 S/12/yz/yz G1

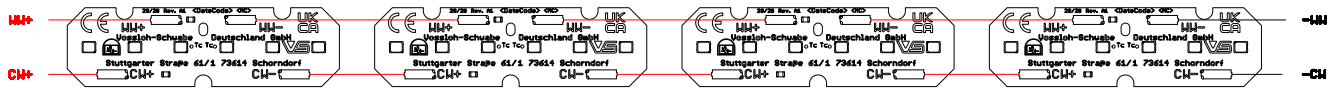


All holes 2.2 x 3.2 mm are fixing holes for optics. | All holes Ø 4.3 mm are fixing holes for PCB.

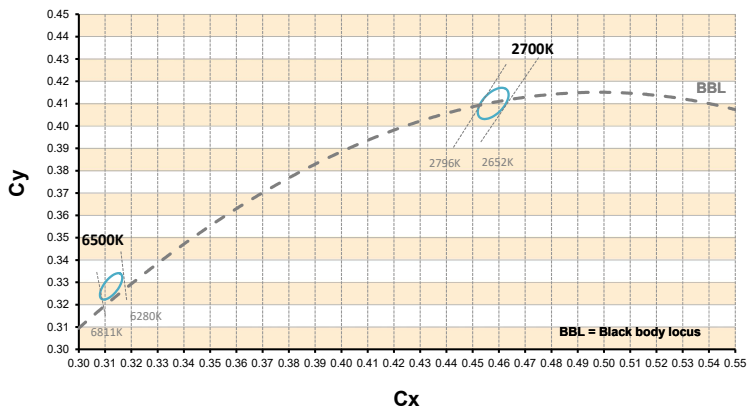
Connection example

- 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!



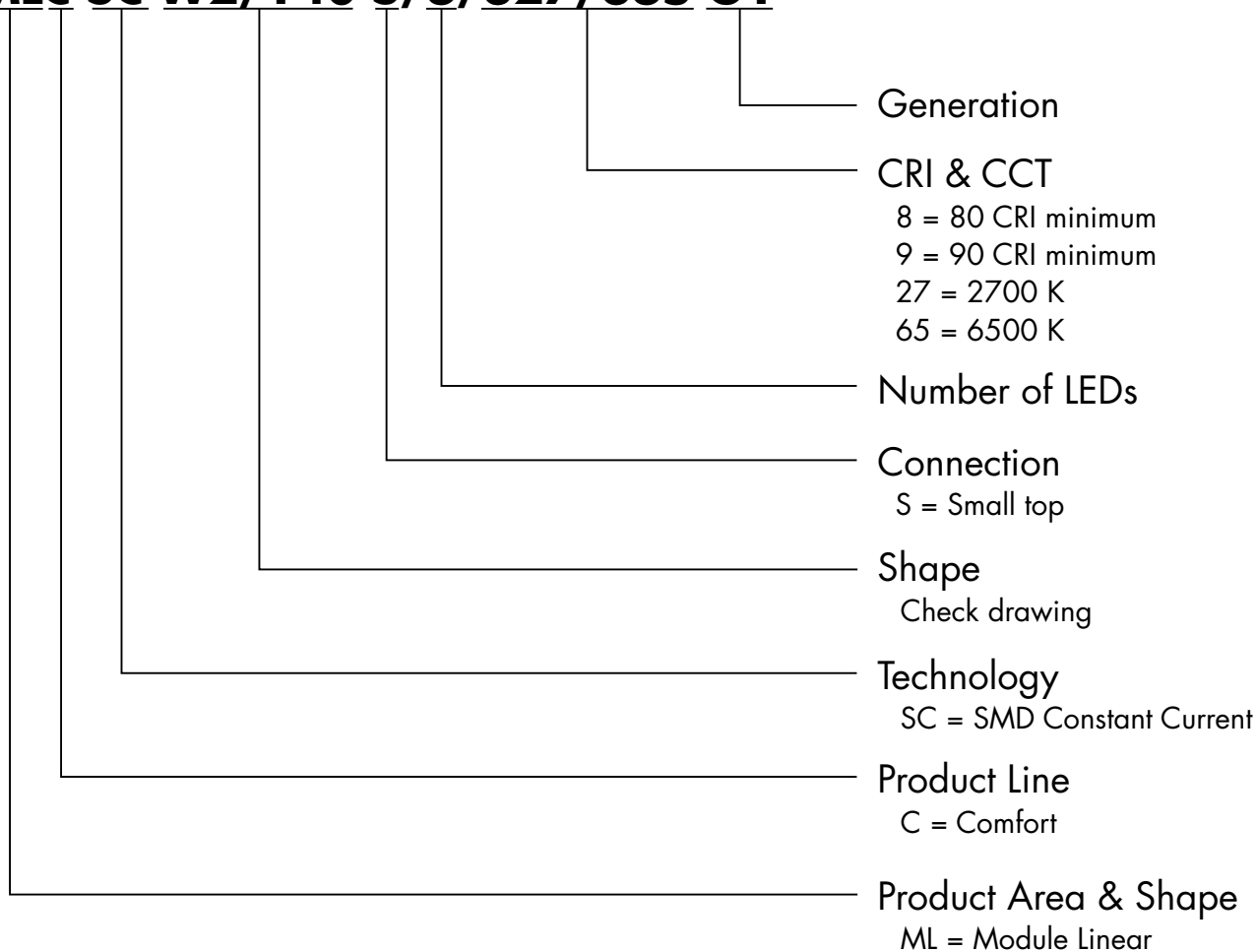
Bins



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Nomenclature example

MLC SC W2/140 S/6/827/865 G1



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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 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 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. 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: $\pm 7\%$
 - 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: **t.b.d.**

CCT K	Max. operating current for risk group 1 mA	E threshold for higher operating currents to be risk group 1 lx
2700	t.b.d.	t.b.d.
6500	t.b.d.	t.b.d.

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.

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