

LED LINEAR ALLROUND 5050 3R - Z19

3x8 FOR RECTANGULAR IP OPTICS



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MSP SC 3R/Z19/5050 G1

These modules were designed for built-in into luminaire casings. They enable a modular luminaire design.

Typical Applications (depending on the choice of optics)

- Integration in luminaires
- Street lighting, urban street lighting
- Tunnel lighting
- Flood and area lighting
- Indoor lighting
- Industrial lighting for:
 - Production halls
 - Warehouses
- Lighting for sports facilities

LED Linear Allround SMD 5050 3R - Z19 – 3x8

- **HIGHLY EFFICIENT: UP TO 226 LM/W**
AT $T_p = 65^\circ\text{C}$, $I_f = 350\text{ mA}$
- **FLEXIBLE LIGHT DISTRIBUTION BY VARIOUS ATTACHMENT OPTICS**
- **INITIAL COLOUR ACCURACY: 5 SDCM**
- **ON-BOARD SURGE PROTECTION UP TO 10 KV**
(IN COMBINATION WITH VS STREETLIGHT DRIVERS)
- **ENEC AND VDE**
(ACC. TO EN 62031)



LED Linear Allround 5050 3R - Z19 3x8 for rectangular IP optics

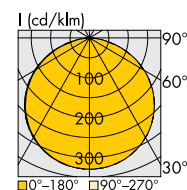
Technical Notes

- LED built-in module for integration into luminaires
- 24 high-efficiency High Power LEDs
- Dimensions (excl. optics) LxVxH
24 LEDs: 148x47x5.1 mm
- Push-in terminals for quick and simple wiring
- Design for optimum thermal management
- Degree of protection: IP00
- Surge protection device on board



Typical Light Distribution Curve

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



Electrical Characteristics

at $T_p = 65^\circ\text{C}$

Type	No. of LEDs	Typ. voltage DC 350 mA V	500 mA V	700 mA V	1050 mA V	1200 mA V	Temperature coefficient mV/K	Typ. power consumption 350 mA W	500 mA W	700 mA W	1050 mA W	1200 mA W
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LED Linear Allround 5050 3R - Z19

All types	24	42.6	43.1	43.8	44.8	45.2	-24.0	14.9	21.6	30.7	47.1	54.3
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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 $^\circ\text{C}$ min. $^\circ\text{C}$ max.	Storage temperature range $^\circ\text{C}$ min. $^\circ\text{C}$ max.	Max. allowed repetitive peak current mA
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All types	1200	-30 +85	-30 +85	2400
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Operating Life

Lumen degradation	Operating life in hours at stated T_c point temperature														
	$I_f \leq 350\text{ mA}$			$I_f 500\text{ mA}$			$I_f 700\text{ mA}$			$I_f 1050\text{ mA}$			$I_f 1200\text{ mA}$		
	60 °C	70 °C	85 °C	60 °C	70 °C	85 °C	60 °C	70 °C	85 °C	60 °C	70 °C	85 °C	60 °C	70 °C	85 °C

L90/B10	102.000	99.000	88.000	102.000	99.000	84.000	102.000	98.000	81.000	102.000	97.000	77.000	102.000	97.000	75.000
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L80/B10	102.000	102.000	102.000	102.000	102.000	102.000	102.000	102.000	102.000	102.000	102.000	102.000	102.000	102.000	102.000
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L70/B10	102.000	102.000	102.000	102.000	102.000	102.000	102.000	102.000	102.000	102.000	102.000	102.000	102.000	102.000	102.000
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These values do not refer to the colour temperature. | Lxx/Byy (lumen maintenance at xx%, failure rate yy%)

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

LED Linear Allround 5050 3R - Z19 – 3x8 for rectangular IP optics

Optical Characteristics

at $t_p = 65^\circ\text{C}$, CRI ≥ 70

Type	Ref. No.	Colour	Correl. colour temp. K	Luminous flux* (lm) and typ. efficiency (lm/W)										Photometric Code	
				350 mA		500 mA		700 mA		1050 mA		1200 mA			
				typ. lm	typ. lm/W	typ. lm	typ. lm/W	typ. lm	typ. lm/W	typ. lm	typ. lm/W	typ. lm	typ. lm/W		
LED Linear Allround 5050 3R - Z19 - 24 LEDs															
MSP SC 3R/Z19/5050 T/24/718 G1	573881	WW	1800	2310	155	3245	150	4430	144	6375	135	7170	132	718/589	
MSP SC 3R/Z19/5050 T/24/722 G1	573826	WW	2200	2815	189	3955	183	5400	176	7775	165	8745	161	722/579	
MSP SC 3R/Z19/5050 T/24/727 G1	573882	WW	2700	3125	210	4395	204	6000	196	8640	184	9710	179	727/579	
MSP SC 3R/Z19/5050 T/24/730 G1	573829	WW	3000	3215	216	4520	210	6170	201	8885	189	9985	184	730/579	
MSP SC 3R/Z19/5050 T/24/740 G1	573830	NW	4000	3360	226	4725	219	6445	210	9280	197	10435	192	740/579	
MSP SC 3R/Z19/5050 T/24/750 G1	573831	CW	5000	3355	225	4715	219	6440	210	9270	197	10420	192	750/579	

On account of the complex manufacturing process of the modules, the above values only represent statistical variables.

The values do not necessarily correspond exactly to the actual parameters of every single product, which can vary from the typical specification.

* Measurement tolerance of luminous flux: $\pm 10\%$

Optical Characteristics

at $t_p = 65^\circ\text{C}$, CRI ≥ 80

Type	Ref. No.	Colour	Correl. colour temp. K	Luminous flux* (lm) and typ. efficiency (lm/W)										Photometric Code	
				350 mA		500 mA		700 mA		1050 mA		1200 mA			
				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		
LED Linear Allround 5050 3R - Z19 - 24 LEDs															
MSP SC 3R/Z19/5050 T/24/830 G1	573832	WW	3000	2845	191	4005	186	5465	178	7865	167	8845	163	830/579	
MSP SC 3R/Z19/5050 T/24/840 G1	573833	NW	4000	3070	206	4315	200	5895	192	8485	180	9540	176	840/579	
MSP SC 3R/Z19/5050 T/24/850 G1	573888	CW	5000	3060	206	4305	200	5875	192	8460	180	9510	175	850/579	
MSP SC 3R/Z19/5050 T/24/865 G1	573883	CW	6500	3025	203	4250	197	5805	189	8355	178	9395	173	865/589	

On account of the complex manufacturing process of the modules, the above values only represent statistical variables.

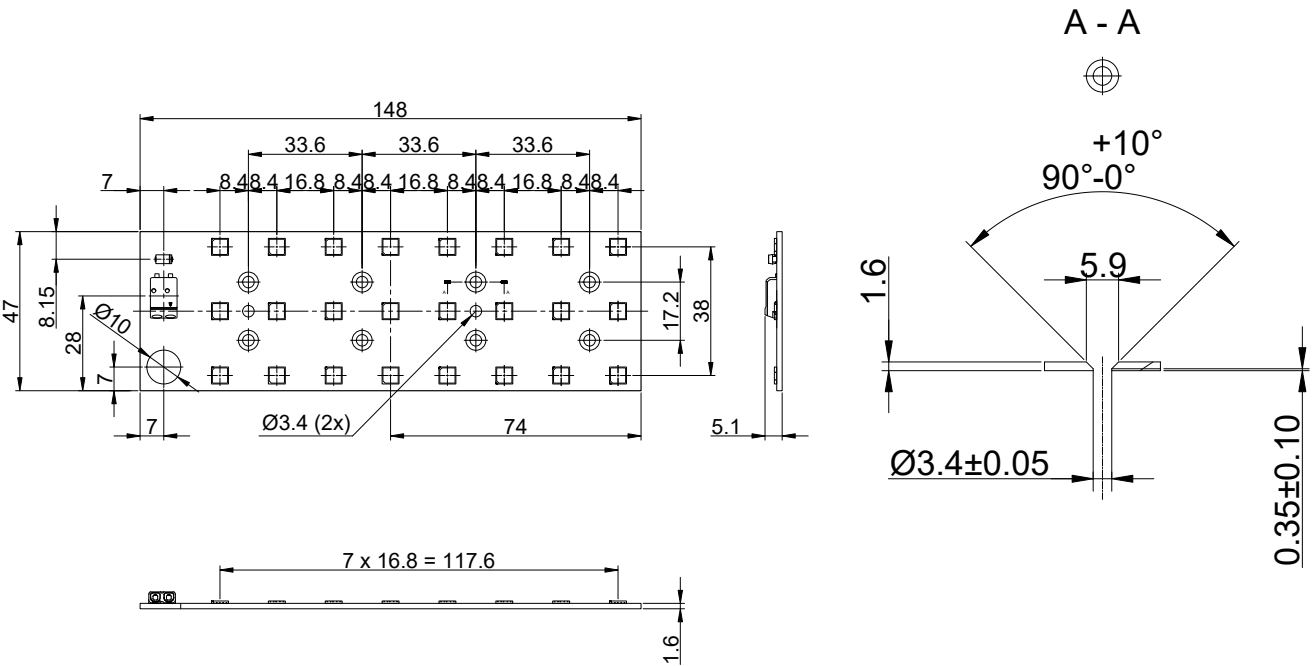
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* Measurement tolerance of luminous flux: $\pm 10\%$

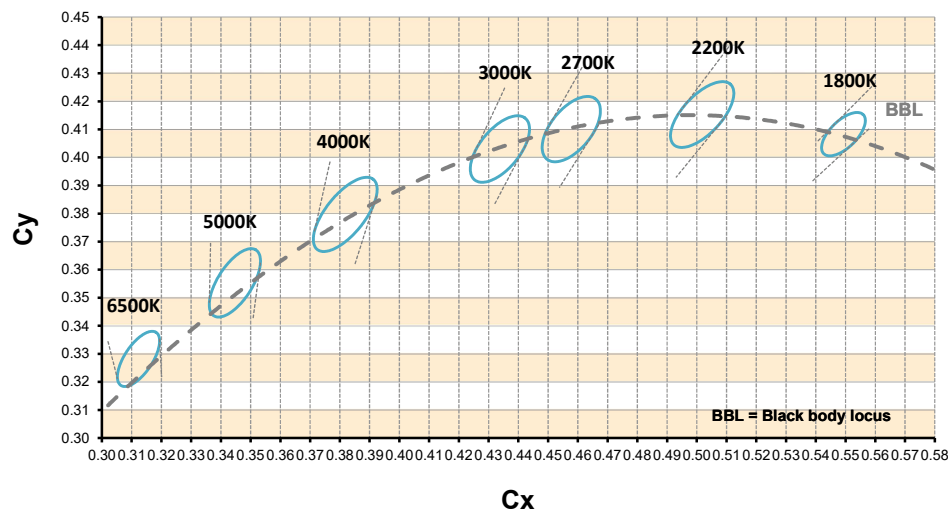
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Mechanical Dimensions



Bins



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Nomenclature example

MSP SC 3R/Z19/5050 T/24/840 G1

Generation

CCT

18 = 1800 K

22 = 2200 K

27 = 2700 K

30 = 3000 K

40 = 4000 K

50 = 5000 K

65 = 6500 K

CRI

7 = 70 CRI minimum

8 = 80 CRI minimum

Number of LEDs

Connection

T = Top

Type of LED

Shape

Check drawing

Technology

SC = SMD Constant Current

Product Line

P = Prime

Product Area & Shape

MS = Module Street

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. Safety regulations acc. to EN 60598 has to be observed. Installation must be carried out in a voltage-free state (i.e. disconnection from the mains).

- LED built-in modules must not be subjected to any undue mechanical stress, e. g.:
 - handle LED modules carefully
 - avoid shear and compressive forces onto the optics during handling and installation
 - avoid vibrations of more than 2 kHz, 40 G
- The module must be fixed onto a thermally conductive surface with M3 countersunk screws. Max. allowed torque for M3: 0.5 Nm.
- The wiring can be done by solid or stranded wires having a cross section of 0.2–0.75 mm²; stripped length of lead ends of 7–9 mm. For inserting/removing stranded wires press lightly on the push button.
- When installing/screwing the module into a luminaire, please ensure that the cables are not squeezed between luminaire/heat sink and LED module. Also ensure that the mounting surface is clean and flat. For a reliable thermal attachment, we recommend the mounting surface flatness of ≤ 0.2 mm.
- Safe operation only possible by the use of external constant current sources (I_{max} , see table "Electrical Characteristics").
- Operation is dependent on constant current drivers that should provide the following protective measures:
 - short-circuit protection
 - overload protection
 - overheating protection
- Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- The maximum output of the power supply must be observed.
- 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.
- The clearance and creepage distances of LED modules MSP SC 3R/Z19/5050 T/24/yz G1 are designed for working voltages up to 300 V DC (basic insulation) acc. to EN 62031/EN 60598.
- Please ensure standard ESD (electrostatic discharge) protection measures are employed when handling and installing LED modules. Electrostatic discharge can damage LEDs.

- To ensure problem-free operation, the specified maximum temperature at the t_c and t_p point (see "Operating Life") must be observed (measured in accordance with EN 60598-1). To satisfy this point, it is necessary to put measures in place to ensure any heat is dissipated from the LED module to the environment.
- To ensure good thermal contact, it is recommended to use proper thermal interface material (e.g. thermal paste, phase change or thermal pads).
- When mounting LED Linear Allround modules directly on the luminaire housing, we recommend to use aluminum of at least 3 mm thickness. Thicker material will improve the heatflow through the luminaire, resulting in a lower t_p temperature on the module itself.
- Use anodised or painted surfaces rather than blank surfaces to enhance the heat-transfer via thermal radiation.
- To ensure problem-free operation, the specified maximum temperature at the t_c and 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.
- Try to limit as far as possible the number of thermal interfaces in the primary heat path towards ambient air. For the primary heat path use solely materials with high thermal conductivity (e.g. aluminum).
- The LED Linear Allround modules are built-in modules and have no IP-classification (IP00). They are not designed for operation in "open air". 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.
- A parallel connection of the modules is not allowed.
- 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
As long as subsequent table is fulfilled:

CCT K	Max. operating current for risk group 1 mA	Limit illuminance (E_{thr}) for higher operating currents to be risk group 1 lx
≤ 4000	RG1	N/A
5000	942.6	1071.56
6500	873.3	891.07

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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.