

LED LINE SMD KIT 3R GEN. 4

WU-M-526-S2 (280 MM)

WU-M-536-S2 (566 MM)



LED LINE SMD KIT 3R GEN. 4

WU-M-526-S2 / WU-M-536-S2

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



Watch video

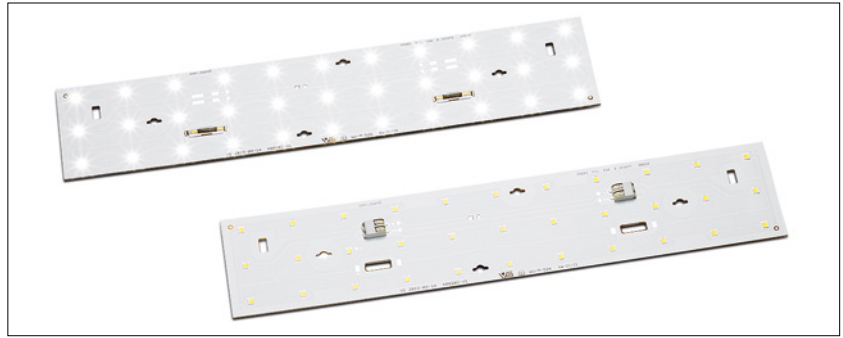
LED SMD Kit 3R Gen. 4

- **LONG SERVICE LIFE TIME: 50,000 H (L80, B10)**
- **HIGHLY EFFICIENT: UP TO 204 LM/W AT $T_p = 50^\circ\text{C}$**
- **LENGTH: 280 MM, 566 MM**
- **FLEXIBLE LIGHT DISTRIBUTION BY DIFFERENT OPTICS**
- **ZHAGA-COMPLIANT HOLE DISTANCE**

LED Line SMD Kit 3R Gen. 4

Technical Notes

- LED built-in module for integration into luminaires
- Dimensions:
WU-M-526-S2: 280x55 mm
WU-M-536-S2: 566x55 mm
- Driving current: 150 mA / 200 mA / 350 mA / 500 mA / 700 mA
- On-board push terminal system
- Colour tolerance: 3-step MacAdam
- Beam angle: 120°



Electrical Characteristics

at $t_p = 50\text{ °C}$

| Type | No. of LEDs | Voltage DC (V) | | | | | Power consumption (W) | | | | |
|-------------|-------------|----------------|----------|----------|----------|----------|-----------------------|----------|----------|----------|----------|
| | | 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 |
| WU-M-526-S2 | 33 | 29.4 | 29.9 | 31 | 32 | 33.2 | 4.4 | 6 | 10.8 | 16 | 23.3 |
| WU-M-536-S2 | 66 | 58.9 | 59.7 | 61.9 | 64 | 66.4 | 8.8 | 11.9 | 21.7 | 32 | 46.5 |

Voltage and power tolerance: $\pm 10\%$

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 mA |
|---------------------|------------------------|--|---------|---------------------------|---------|---|
| | | °C min. | °C max. | °C min. | °C max. | |
| WU-M-526-S2/-536-S2 | 150 | -20 | +75 | -20 | +85 | 1200 |
| | 200 | -20 | +75 | -20 | +85 | 1200 |
| | 350 | -20 | +75 | -20 | +85 | 1200 |
| | 500 | -20 | +75 | -20 | +85 | 1200 |
| | 700 | -20 | +75 | -20 | +85 | 1200 |

Operating Life

L80/B10

in hours at measured temperature at t_p point

| Type | 150 mA | | | 200 mA | | | 350 mA | | | 500 mA | | | 700 mA | | |
|-------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 40 °C | 50 °C | 75 °C | 40 °C | 50 °C | 75 °C | 40 °C | 50 °C | 75 °C | 40 °C | 50 °C | 75 °C | 40 °C | 50 °C | 75 °C |
| 526-S | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 |
| 536-S | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 | > 54,000 |

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Optical Characteristics

at $t_p = 50\text{ °C}$; without secondary optics

CRI R_g 80

| Type | Ref. No. Connection | | Colour | Correl. colour temp.* K | Luminous flux** (lm) and efficiency (lm/W) at | | | | | | | | | | Photo- metric code |
|------------------------------|------------------------|----------------|---------------|----------------------------------|---|--------------|------------|--------------|------------|--------------|------------|--------------|------------|--------------|--------------------------|
| | Top (TC) | Bottom (BC) | | | 150 mA | | 200 mA | | 350 mA | | 500 mA | | 700 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 | |
| Module length: 280 mm | | | | | | | | | | | | | | | |
| WU-M-526-S2-830 | 569503 | 569507 | warm white | 3000 | 845 | 191 | 1110 | 186 | 1890 | 174 | 2640 | 165 | 3595 | 155 | 830/349 |
| WU-M-526-S2-840 | 569504 | 569508 | neutral white | 4000 | 900 | 204 | 1185 | 198 | 2010 | 186 | 2815 | 176 | 3830 | 165 | 840/349 |
| WU-M-526-S2-850 | 569505 | 569509 | neutral white | 5000 | 900 | 204 | 1185 | 198 | 2010 | 186 | 2815 | 176 | 3830 | 165 | 850/349 |
| WU-M-526-S2-865 | 569506 | 569510 | cool white | 6500 | 835 | 189 | 1100 | 184 | 1870 | 173 | 2615 | 163 | 3560 | 153 | 865/349 |
| Module length: 566 mm | | | | | | | | | | | | | | | |
| WU-M-536-S2-830 | 569495 | 569499 | warm white | 3000 | 1690 | 191 | 2225 | 186 | 3780 | 174 | 5280 | 165 | 7195 | 155 | 830/349 |
| WU-M-536-S2-840 | 569496 | 569500 | neutral white | 4000 | 1800 | 204 | 2365 | 198 | 4025 | 186 | 5625 | 176 | 7660 | 165 | 840/349 |
| WU-M-536-S2-850 | 569497 | 569501 | neutral white | 5000 | 1800 | 204 | 2365 | 198 | 4025 | 186 | 5625 | 176 | 7660 | 165 | 850/349 |
| WU-M-536-S2-865 | 569498 | 569502 | cool white | 6500 | 1670 | 189 | 2200 | 184 | 3740 | 173 | 5225 | 163 | 7120 | 153 | 865/349 |

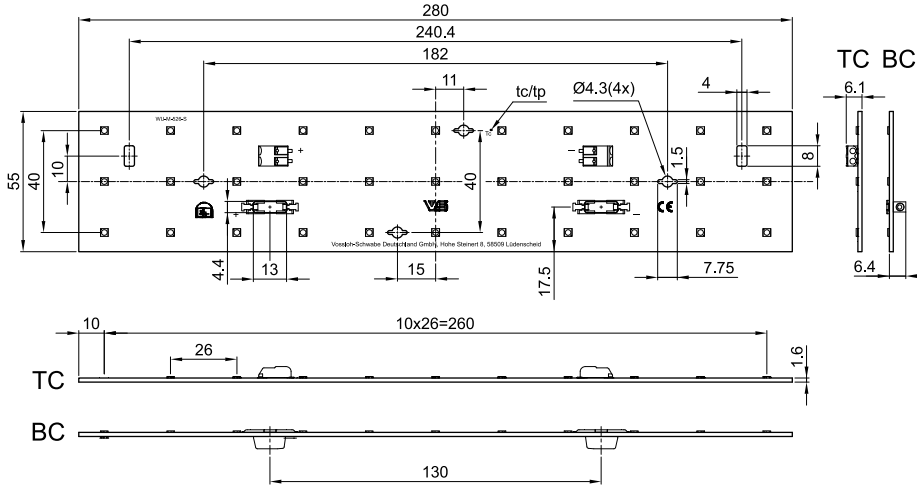
* Colour tolerance: 3 McAdams | ** Production tolerance of luminous flux and efficiency: $\pm 10\%$ | CRI > 90 on request

Minimum order quantity (packaging unit): 42 pcs.

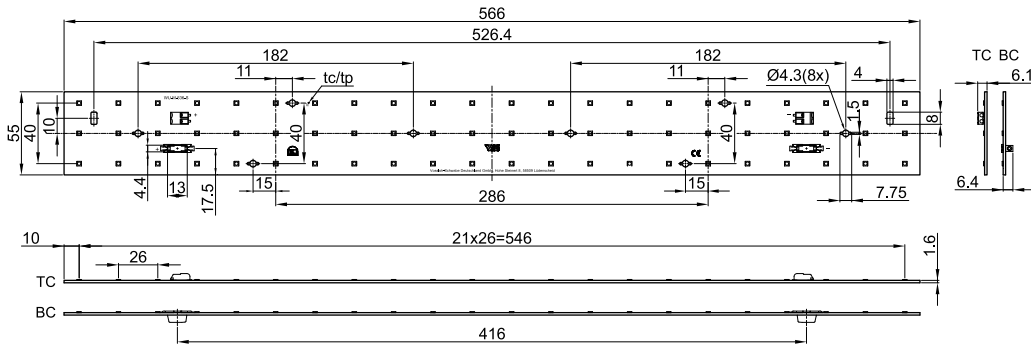
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LED Line SMD Kit 3R Gen. 4

Mechanical Dimensions SMD Board



WU-M-526-S2-TC/-BC



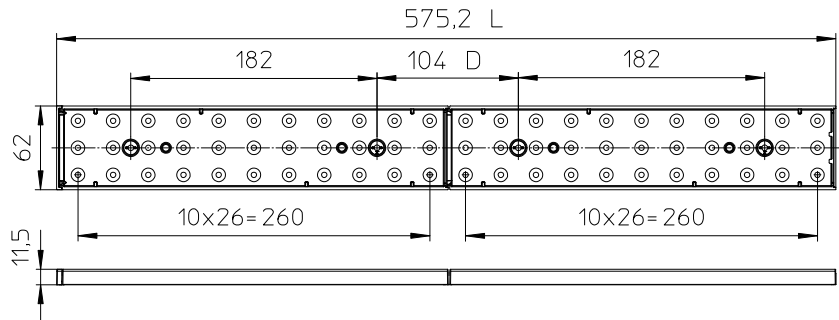
WU-M-536-S2-TC/-BC

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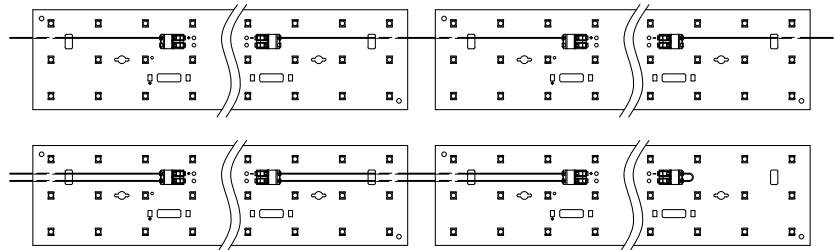
Module Assembly

The L and D dimensions change with the number of modules and as a result of variations in the various end caps and spacers.

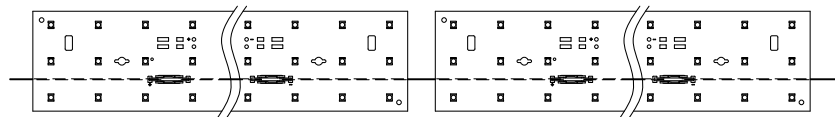


Connection Examples

- 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 700 V DC (basic insulation) and 300 V DC (reinforced insulation).
- Max. diameter of screw head (M4): 8 mm
- The modules are connected in series in both wiring examples.

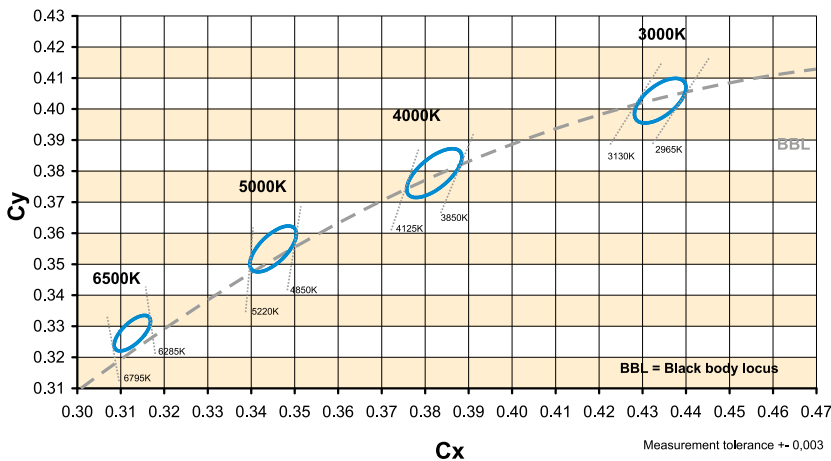


For top connection (TC)



For bottom connection (BC)

Bins

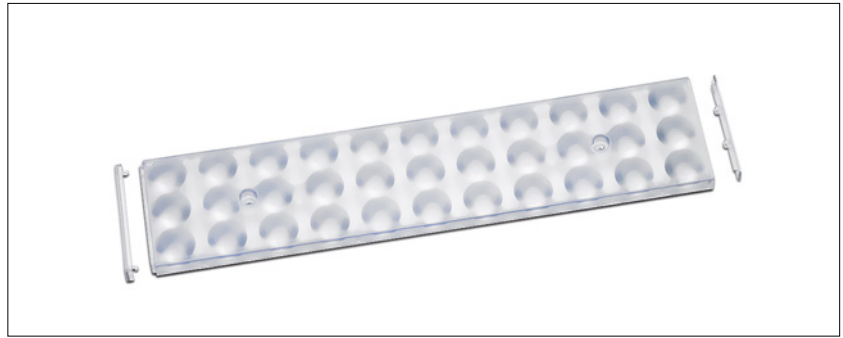


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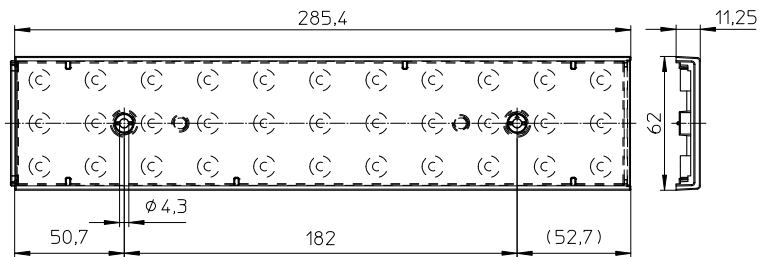
LED Line SMD Kit 3R Gen. 4

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.



Optics



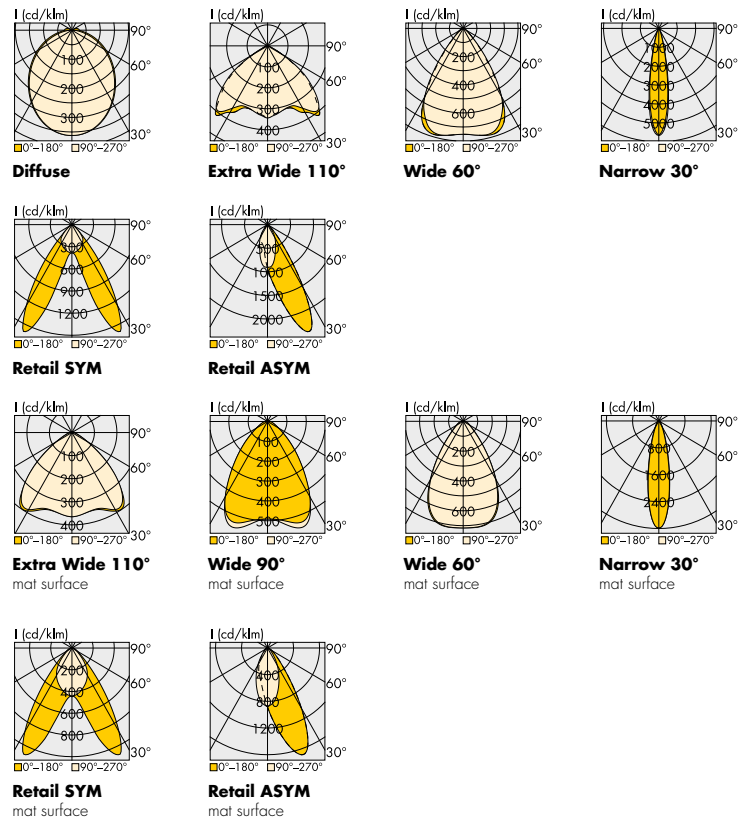
| Light distribution | Optics type | Ref. No. | Efficiency % | Weight g |
|---|-------------|---------------|--------------|----------|
| Material: transparent, high-glossy | | | | |
| Extra Wide 110° | 99400 | 560371 | 95 | 105 |
| Wide 60° | 99401 | 560372 | 95 | 88 |
| Narrow 30° | 99404 | 560375 | 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 |

Typical Light Distribution Curves

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



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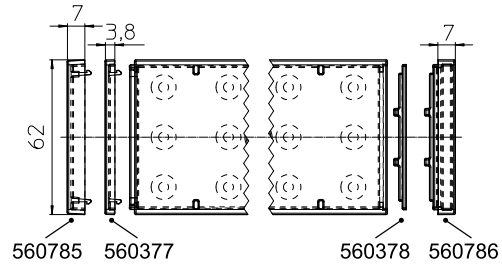
End Caps

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.) |
|-------------|-----------------|----------|-------------|----------|-----------------------|
|-------------|-----------------|----------|-------------|----------|-----------------------|

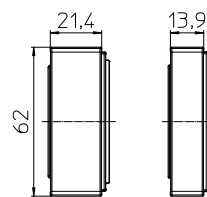
Material: transparent, high-glossy

| | | | | | |
|-----------------|-----|---------------|------|-----|-----|
| 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

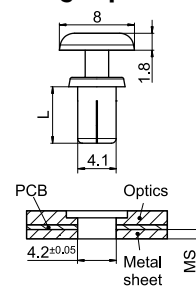
Material: PA, natural (UL-94 V-2)

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



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LED Line SMD Kit 3R Gen. 4 – IP54

Technical Notes for Optics

Brilliant light distribution and surfaces

Highly efficient up to 95% or 85%

Material: PMMA

Dimensions (LxWxH): 298x64x11.75 mm

incl. attached gasket

for modules WU-M-526 (280 mm)

Max. allowed temperature: 80 °C

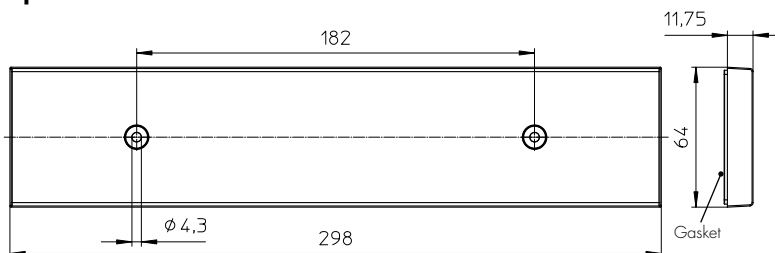
Fixation with flat or cylinder head screws (M4)

Max. torque: 1.2 Nm (M4)

Packaging unit: 96 pcs.



Optics

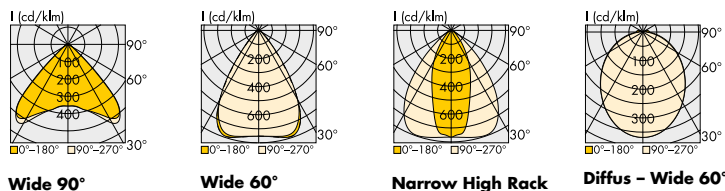


| Light distribution | Optics type | Ref. No. | Efficiency % | Weight g |
|---|-------------|---------------|--------------|----------|
| Material: transparent, high-glossy | | | | |
| Wide 90° | 99505 | 564168 | 95 | 116 |
| Wide 60° | 99501 | 564166 | 95 | 116 |
| Narrow High Rack | 99504 | 564167 | 95 | 116 |
| Material: translucent, high-glossy | | | | |
| Diffuse 60° | 99501 | 564461 | 85 | 116 |

Typical Light Distribution Curves

Data are available in .ldt format for download under

www.vossloh-schwabe.com.



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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LED Line SMD Kit 3R Gen. 4

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.
- 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 could 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) /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 top side connection and BJB 46.121.1001 for bottom side connection).
- 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

| CCT K | Max. operating current for risk group 1 mA | E threshold for higher operating currents to be risk group 1 lx |
|----------|--|---|
| ≤ 4000 | 846 | 1130 |
| 5000 | 700 | 928 |
| 6500 | 550 | 773 |

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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