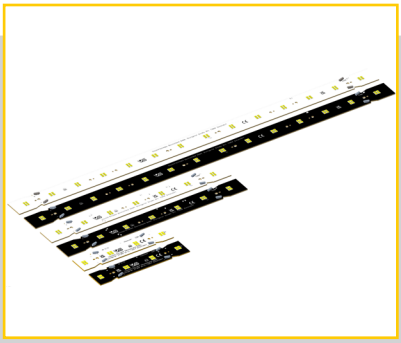
# LED LINE SMD W2.5 LIGHT&DARK GEN. 2



## LED LINE SMD W2.5 LIGHT&DARK GEN. 2

**MLC SC W2.5 G2**
**MLC SC W2.5 LV G2**

**Typical Applications**
Built-in luminaires/general illumination

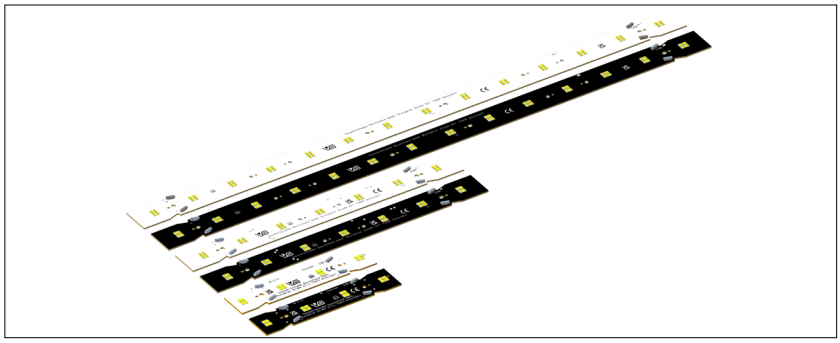
- Office lighting
- Retail, corridor and shelf lighting
- Residential lighting

LED Line SMD W2.5 Light&Dark Gen. 2

- **LONG SERVICE LIFE TIME: 93.000 H (L80, B10)**
- **HIGHLY EFFICIENT: UP TO 212 LM/W AT $T_P$ = 50 °C**
- **3 LENGTHS AVAILABLE: 140 / 280 / 560 MM**
- **SELV AND NON-SELV VARIANTS AVAILABLE**
- **2 PCBS COLOR AVAILABLE: WHITE AND BLACK**
- **ENEC APPROVED**

LIGHTING SOLUTIONS
**Vossloh-Schwabe Deutschland GmbH** · Stuttgarter Straße 61/1 · 73614 Schorndorf · Germany · Phone +49 7181/8002-0 · Fax +49 7181/8002-122 · www.vossloh-schwabe.com

# LED Line SMD W2.5 Light&Dark Gen. 2

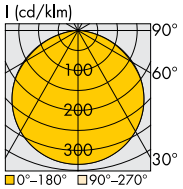


### Technical Notes

- LED built-in module for integration into luminaires
- Dimensions
  MLC SC W2.5/140: 140x25 mm
  MLC SC W2.5/280: 280x25 mm
  MLC SC W2.5/560: 560x25 mm
- 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 °C

| Type | No. of SMDs | Typ. voltage DC 150 mA V | 200 mA V | 350 mA V | 500 mA V | 700 mA V | Temperature coefficient mV/K | Typ. power consumption 150 mA W | 200 mA W | 350 mA W | 500 mA W | 700 mA W |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LED Line SMD W2.5 Light&Dark Gen. 2** | | | | | | | | | | | | |
| MLC SC W2.5/140/x S/16/yzz G2 | 16 | 10.4 | 10.5 | 10.7 | 10.9 | 11.1 | -4.03 | 1.6 | 2.1 | 3.7 | 5.4 | 7.8 |
| MLC SC W2.5/280/x S/28/yzz G2 | 28 | 18.1 | 18.3 | 18.7 | 19.1 | 19.5 | -7.06 | 2.7 | 3.7 | 6.5 | 9.5 | 13.6 |
| MLC SC W2.5/560/x S/56/yzz G2 | 56 | 36.3 | 36.6 | 37.4 | 38.1 | 39.0 | -14.12 | 5.4 | 7.3 | 13.1 | 19.1 | 27.3 |

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 °C min. | °C max. | Storage temperature range °C min. | °C max. | Max. allowed repetitive peak current for frequencies ≥ 100 Hz (mA) |
|---|---|---|---|---|---|---|
| All types | 700 | -20 | +80 | -20 | +70 | 1920 |

### Operating Life

L80/B10 in hours at measured temperature at $t_p$ point

| Type | 150 mA 40 °C | 50 °C | 80 °C | 200 mA 40 °C | 50 °C | 80 °C | 350 mA 40 °C | 50 °C | 80 °C | 500 mA 40 °C | 50 °C | 80 °C | 700 mA 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 |





LIGHTING SOLUTIONS
**Vossloh-Schwabe Deutschland GmbH** · Stuttgarter Straße 61/1 · 73614 Schorndorf · Germany · Phone +49 7181/8002-0 · Fax +49 7181/8002-122 · www.vossloh-schwabe.com

## Optical Characteristics

at $t_p$ = 50 °C, without secondary optics, CRI: $R_a$ > 80

| Type | Ref. No. PCB colour "x" White (W) | Ref. No. PCB colour "x" Black (B) | Colour | Correlated colour temp.* K | Typ. luminous flux** and typ. efficiency** at 150 mA lm | 150 mA lm/W | 200 mA lm | 200 mA lm/W | 350 mA lm | 350 mA lm/W | 500 mA lm | 500 mA lm/W | 700 mA lm | 700 mA lm/W | Photometric code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LED Line SMD W2.5 Light&Dark Gen. 2 - L14** | | | | | | | | | | | | | | | |
| MLC SC W2.5/140/x S/16/827 G2 | **574389** | **574388** | WW | 2700 | 310 | 199 | 410 | 196 | 700 | 187 | 975 | 179 | 1335 | 171 | 827/359 |
| MLC SC W2.5/140/x S/16/830 G2 | **574391** | **574390** | WW | 3000 | 310 | 199 | 410 | 196 | 700 | 187 | 975 | 179 | 1335 | 171 | 830/359 |
| MLC SC W2.5/140/x S/16/835 G2 | **574393** | **574392** | NW | 3500 | 330 | 212 | 440 | 209 | 745 | 200 | 1045 | 192 | 1425 | 183 | 835/359 |
| MLC SC W2.5/140/x S/16/840 G2 | **574395** | **574394** | NW | 4000 | 330 | 212 | 440 | 209 | 745 | 200 | 1045 | 192 | 1425 | 183 | 840/359 |
| MLC SC W2.5/140/x S/16/850 G2 | **574397** | **574396** | CW | 5000 | 330 | 212 | 440 | 209 | 745 | 200 | 1045 | 192 | 1425 | 183 | 850/359 |
| MLC SC W2.5/140/x S/16/865 G2 | **574399** | **574398** | CW | 6500 | 330 | 212 | 440 | 209 | 745 | 200 | 1045 | 192 | 1425 | 183 | 865/359 |
| **LED Line SMD W2.5 Light&Dark Gen. 2 - L28** | | | | | | | | | | | | | | | |
| MLC SC W2.5/280/x S/28/827 G2 | **574413** | **574412** | WW | 2700 | 540 | 199 | 715 | 196 | 1225 | 187 | 1710 | 179 | 2335 | 171 | 827/359 |
| MLC SC W2.5/280/x S/28/830 G2 | **574415** | **574414** | WW | 3000 | 540 | 199 | 715 | 196 | 1225 | 187 | 1710 | 179 | 2335 | 171 | 830/359 |
| MLC SC W2.5/280/x S/28/835 G2 | **574417** | **574416** | NW | 3500 | 580 | 212 | 765 | 209 | 1305 | 200 | 1825 | 192 | 2495 | 183 | 835/359 |
| MLC SC W2.5/280/x S/28/840 G2 | **574419** | **574418** | NW | 4000 | 580 | 212 | 765 | 209 | 1305 | 200 | 1825 | 192 | 2495 | 183 | 840/359 |
| MLC SC W2.5/280/x S/28/850 G2 | **574421** | **574420** | CW | 5000 | 580 | 212 | 765 | 209 | 1305 | 200 | 1825 | 192 | 2495 | 183 | 850/359 |
| MLC SC W2.5/280/x S/28/865 G2 | **574423** | **574422** | CW | 6500 | 580 | 212 | 765 | 209 | 1305 | 200 | 1825 | 192 | 2495 | 183 | 865/359 |
| **LED Line SMD W2.5 Light&Dark Gen. 2 - L56** | | | | | | | | | | | | | | | |
| MLC SC W2.5/560/x S/56/827 G2 | **574437** | **574436** | WW | 2700 | 1080 | 199 | 1435 | 196 | 2445 | 187 | 3415 | 179 | 4665 | 171 | 827/359 |
| MLC SC W2.5/560/x S/56/830 G2 | **574439** | **574438** | WW | 3000 | 1080 | 199 | 1435 | 196 | 2445 | 187 | 3415 | 179 | 4665 | 171 | 830/359 |
| MLC SC W2.5/560/x S/56/835 G2 | **574441** | **574440** | NW | 3500 | 1155 | 212 | 1530 | 209 | 2615 | 200 | 3650 | 192 | 4985 | 183 | 835/359 |
| MLC SC W2.5/560/x S/56/840 G2 | **574443** | **574442** | NW | 4000 | 1155 | 212 | 1530 | 209 | 2615 | 200 | 3650 | 192 | 4985 | 183 | 840/359 |
| MLC SC W2.5/560/x S/56/850 G2 | **574445** | **574444** | CW | 5000 | 1155 | 212 | 1530 | 209 | 2615 | 200 | 3650 | 192 | 4985 | 183 | 850/359 |
| MLC SC W2.5/560/x S/56/865 G2 | **574447** | **574446** | CW | 6500 | 1155 | 212 | 1530 | 209 | 2615 | 200 | 3650 | 192 | 4985 | 183 | 865/359 |

2700 and 3000 K = warm white (WW), 3500 and 4000 K = neutral white (NW), 5000 and 6500 K = cool white (CW)
* Colour tolerance: 3 MacAdam | ** Production tolerance of luminous flux and efficiency: ±10%

## Optical Characteristics

at $t_p$ = 50 °C, without secondary optics, CRI: $R_a$ > 90

| Type | Ref. No. PCB colour "x" White (W) | Ref. No. PCB colour "x" Black (B) | Colour | Correlated colour temp.* K | Typ. luminous flux** and typ. efficiency** at 150 mA lm | 150 mA lm/W | 200 mA lm | 200 mA lm/W | 350 mA lm | 350 mA lm/W | 500 mA lm | 500 mA lm/W | 700 mA lm | 700 mA lm/W | Photometric code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LED Line SMD W2.5 Light&Dark Gen. 2 - L14** | | | | | | | | | | | | | | | |
| MLC SC W2.5/140/x S/16/927 G2 | **574461** | **574460** | WW | 2700 | 245 | 158 | 325 | 155 | 555 | 148 | 775 | 142 | 1055 | 136 | 927/359 |
| MLC SC W2.5/140/x S/16/930 G2 | **574463** | **574462** | WW | 3000 | 265 | 171 | 355 | 169 | 600 | 161 | 840 | 155 | 1150 | 147 | 930/359 |
| MLC SC W2.5/140/x S/16/935 G2 | **574465** | **574464** | NW | 3500 | 265 | 171 | 355 | 169 | 600 | 161 | 840 | 155 | 1150 | 147 | 935/359 |
| MLC SC W2.5/140/x S/16/940 G2 | **574467** | **574466** | NW | 4000 | 285 | 185 | 380 | 182 | 650 | 174 | 910 | 167 | 1240 | 159 | 940/359 |
| MLC SC W2.5/140/x S/16/950 G2 | **574469** | **574468** | CW | 5000 | 285 | 185 | 380 | 182 | 650 | 174 | 910 | 167 | 1240 | 159 | 950/359 |
| MLC SC W2.5/140/x S/16/965 G2 | **574471** | **574470** | CW | 6500 | 285 | 185 | 380 | 182 | 650 | 174 | 910 | 167 | 1240 | 159 | 965/359 |
| **LED Line SMD W2.5 Light&Dark Gen. 2 - L28** | | | | | | | | | | | | | | | |
| MLC SC W2.5/280/x S/28/927 G2 | **574485** | **574484** | WW | 2700 | 430 | 158 | 570 | 155 | 970 | 148 | 1355 | 142 | 1850 | 136 | 927/359 |
| MLC SC W2.5/280/x S/28/930 G2 | **574487** | **574486** | WW | 3000 | 465 | 171 | 620 | 169 | 1055 | 161 | 1470 | 155 | 2010 | 147 | 930/359 |
| MLC SC W2.5/280/x S/28/935 G2 | **574489** | **574488** | NW | 3500 | 465 | 171 | 620 | 169 | 1055 | 161 | 1470 | 155 | 2010 | 147 | 935/359 |
| MLC SC W2.5/280/x S/28/940 G2 | **574491** | **574490** | NW | 4000 | 505 | 185 | 665 | 182 | 1140 | 174 | 1590 | 167 | 2170 | 159 | 940/359 |
| MLC SC W2.5/280/x S/28/950 G2 | **574493** | **574492** | CW | 5000 | 505 | 185 | 665 | 182 | 1140 | 174 | 1590 | 167 | 2170 | 159 | 950/359 |
| MLC SC W2.5/280/x S/28/965 G2 | **574495** | **574494** | CW | 6500 | 505 | 185 | 665 | 182 | 1140 | 174 | 1590 | 167 | 2170 | 159 | 965/359 |
| **LED Line SMD W2.5 Light&Dark Gen. 2 - L56** | | | | | | | | | | | | | | | |
| MLC SC W2.5/560/x S/56/927 G2 | **574509** | **574508** | WW | 2700 | 855 | 158 | 1135 | 155 | 1940 | 148 | 2710 | 142 | 3700 | 136 | 927/359 |
| MLC SC W2.5/560/x S/56/930 G2 | **574511** | **574510** | WW | 3000 | 930 | 171 | 1235 | 169 | 2110 | 161 | 2945 | 155 | 4020 | 147 | 930/359 |
| MLC SC W2.5/560/x S/56/935 G2 | **574513** | **574512** | NW | 3500 | 930 | 171 | 1235 | 169 | 2110 | 161 | 2945 | 155 | 4020 | 147 | 935/359 |
| MLC SC W2.5/560/x S/56/940 G2 | **574515** | **574514** | NW | 4000 | 1005 | 185 | 1335 | 182 | 2275 | 174 | 3180 | 167 | 4345 | 159 | 940/359 |
| MLC SC W2.5/560/x S/56/950 G2 | **574517** | **574516** | CW | 5000 | 1005 | 185 | 1335 | 182 | 2275 | 174 | 3180 | 167 | 4345 | 159 | 950/359 |
| MLC SC W2.5/560/x S/56/965 G2 | **574519** | **574518** | CW | 6500 | 1005 | 185 | 1335 | 182 | 2275 | 174 | 3180 | 167 | 4345 | 159 | 965/359 |

2700 and 3000 K = warm white (WW), 3500 and 4000 K = neutral white (NW), 5000 and 6500 K = cool white (CW)
* Colour tolerance: 3 MacAdam | ** Production tolerance of luminous flux and efficiency: ±10%



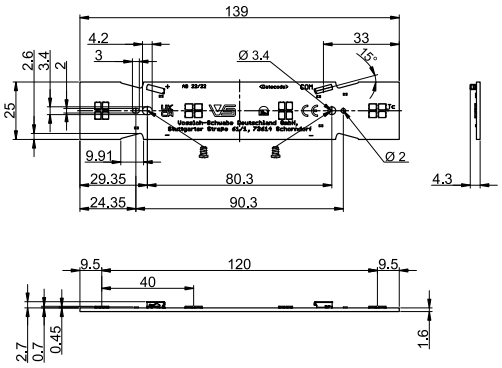


LIGHTING SOLUTIONS
**Vossloh-Schwabe Deutschland GmbH** · Stuttgarter Straße 61/1 · 73614 Schorndorf · Germany · Phone +49 7181/8002-0 · Fax +49 7181/8002-122 · www.vossloh-schwabe.com

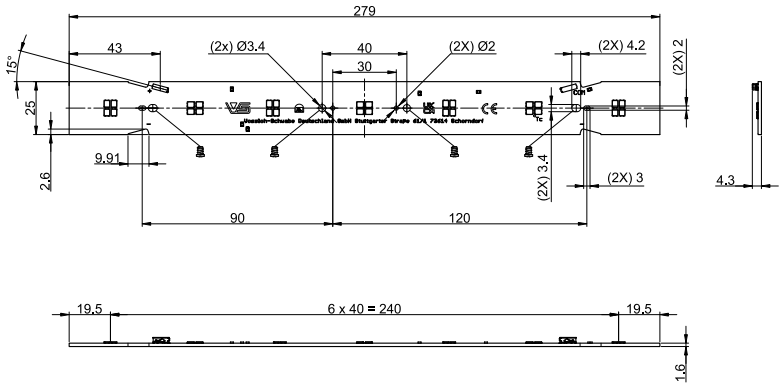
**Mechanical Dimensions**

**S = Small Top Connection**

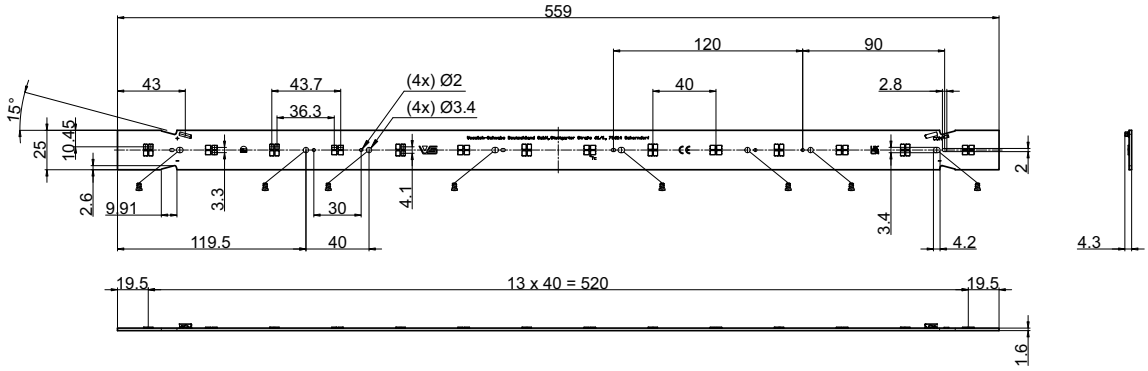
**MLC SC W2.5/140/x S/16/yzz G2**




**MLC SC W2.5/280/x S/28/yzz G2**



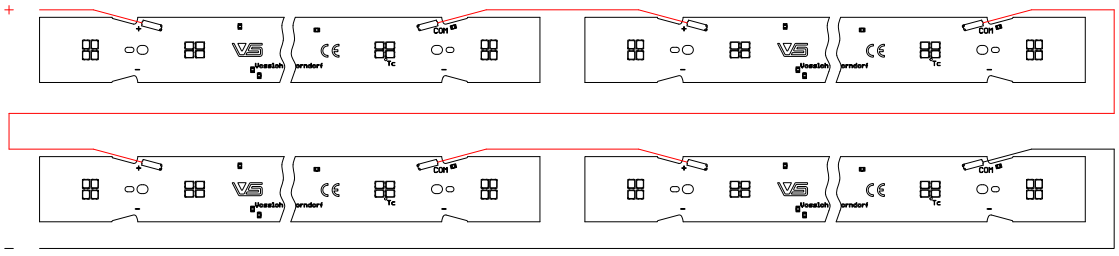

**MLC SC W2.5/560/x S/56/yzz G2**




**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!

Non-SELV








LIGHTING SOLUTIONS
**Vossloh-Schwabe Deutschland GmbH** · Stuttgarter Straße 61/1 · 73614 Schorndorf · Germany · Phone +49 7181/8002-0 · Fax +49 7181/8002-122 · www.vossloh-schwabe.com

# SELV variants

### Electrical Characteristics

at $t_p$ = 50 °C

| Type | No. of SMDs | Typ. voltage DC 100 mA V | 150 mA V | 200 mA V | 250 mA V | 350 mA V | Temperature coefficient mV/K | Typ. power consumption 100 mA W | 150 mA W | 200 mA W | 250 mA W | 350 mA W |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LED Line SMD W2.5 Light&Dark Gen. 2** | | | | | | | | | | | | |
| MLC SC W2.5/140/x S/16/yzz 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 |
| MLC SC W2.5/280/x S/28/yzz LV G2 | 28 | 36.6 | 37.1 | 37.6 | 38.1 | 39.0 | -14.12 | 3.7 | 5.6 | 7.5 | 9.5 | 13.6 |

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 | 500 mA V | 700 mA V | Temperature coefficient mV/K | Typ. power consumption 200 mA W | 300 mA W | 400 mA W | 500 mA W | 700 mA W |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LED Line SMD W2.5 Light&Dark Gen. 2** | | | | | | | | | | | | |
| MLC SC W2.5/560/x S/56/yzz LV G2 | 56 | 36.6 | 37.1 | 37.6 | 38.1 | 39.0 | -14.12 | 7.3 | 11.1 | 15.1 | 19.1 | 27.3 |

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 °C min. | °C max. | Storage temperature range °C min. | °C max. | Max. allowed repetitive peak current for frequencies ≥ 100 Hz (mA) |
|---|---|---|---|---|---|---|
| MLC SC W2.5/140/x S/16/yzz LV G2 | 350 | -20 | +80 | -20 | +70 | 960 |
| MLC SC W2.5/280/x S/28/yzz LV G2 | 350 | -20 | +80 | -20 | +70 | 960 |
| MLC SC W2.5/560/x S/56/yzz LV G2 | 700 | -20 | +80 | -20 | +70 | 1920 |

### Operating Life

L80/B10 in hours at measured temperature at $t_p$ point

| Type | 100 mA 40 °C | 50 °C | 80 °C | 150 mA 40 °C | 50 °C | 80 °C | 200 mA 40 °C | 50 °C | 80 °C | 250 mA 40 °C | 50 °C | 80 °C | 350 mA 40 °C | 50 °C | 80 °C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 140mm | 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 |
| 280mm | 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 |

| Type | 200 mA 40 °C | 50 °C | 80 °C | 300 mA 40 °C | 50 °C | 80 °C | 400 mA 40 °C | 50 °C | 80 °C | 500 mA 40 °C | 50 °C | 80 °C | 700 mA 40 °C | 50 °C | 80 °C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 560mm | 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 |





LIGHTING SOLUTIONS
**Vossloh-Schwabe Deutschland GmbH** · Stuttgarter Straße 61/1 · 73614 Schorndorf · Germany · Phone +49 7181/8002-0 · Fax +49 7181/8002-122 · www.vossloh-schwabe.com

### Optical Characteristics

at $t_p$ = 50 °C, without secondary optics, CRI: $R_a$ > 80

| Type | Ref. No. PCB colour "x" White (W) | Ref. No. PCB colour "x" Black (B) | Colour | Correlated colour temp.* K | Typ. luminous flux** and typ. efficiency** at 100 mA lm | 100 mA lm/W | 150 mA lm | 150 mA lm/W | 200 mA lm | 200 mA lm/W | 250 mA lm | 250 mA lm/W | 350 mA lm | 350 mA lm/W | Photometric code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LED Line SMD W2.5 Light&Dark Gen. 2 - L14** | | | | | | | | | | | | | | | |
| MLC SC W2.5/140/x S/16/827 LV G2 | **574401** | **574400** | WW | 2700 | 410 | 196 | 605 | 190 | 790 | 184 | 975 | 179 | 1335 | 171 | 827/359 |
| MLC SC W2.5/140/x S/16/830 LV G2 | **574403** | **574402** | WW | 3000 | 410 | 196 | 605 | 190 | 790 | 184 | 975 | 179 | 1335 | 171 | 830/359 |
| MLC SC W2.5/140/x S/16/835 LV G2 | **574405** | **574404** | NW | 3500 | 440 | 209 | 645 | 203 | 845 | 197 | 1045 | 192 | 1425 | 183 | 835/359 |
| MLC SC W2.5/140/x S/16/840 LV G2 | **574407** | **574406** | NW | 4000 | 440 | 209 | 645 | 203 | 845 | 197 | 1045 | 192 | 1425 | 183 | 840/359 |
| MLC SC W2.5/140/x S/16/850 LV G2 | **574409** | **574408** | CW | 5000 | 440 | 209 | 645 | 203 | 845 | 197 | 1045 | 192 | 1425 | 183 | 850/359 |
| MLC SC W2.5/140/x S/16/865 LV G2 | **574411** | **574410** | CW | 6500 | 440 | 209 | 645 | 203 | 845 | 197 | 1045 | 192 | 1425 | 183 | 865/359 |
| **LED Line SMD W2.5 Light&Dark Gen. 2 - L28** | | | | | | | | | | | | | | | |
| MLC SC W2.5/280/x S/28/827 LV G2 | **574425** | **574424** | WW | 2700 | 715 | 196 | 1055 | 190 | 1385 | 184 | 1710 | 179 | 2335 | 171 | 827/359 |
| MLC SC W2.5/280/x S/28/830 LV G2 | **574427** | **574426** | WW | 3000 | 715 | 196 | 1055 | 190 | 1385 | 184 | 1710 | 179 | 2335 | 171 | 830/359 |
| MLC SC W2.5/280/x S/28/835 LV G2 | **574429** | **574428** | NW | 3500 | 765 | 209 | 1130 | 203 | 1480 | 197 | 1825 | 192 | 2495 | 183 | 835/359 |
| MLC SC W2.5/280/x S/28/840 LV G2 | **574431** | **574430** | NW | 4000 | 765 | 209 | 1130 | 203 | 1480 | 197 | 1825 | 192 | 2495 | 183 | 840/359 |
| MLC SC W2.5/280/x S/28/850 LV G2 | **574433** | **574432** | CW | 5000 | 765 | 209 | 1130 | 203 | 1480 | 197 | 1825 | 192 | 2495 | 183 | 850/359 |
| MLC SC W2.5/280/x S/28/865 LV G2 | **574435** | **574434** | CW | 6500 | 765 | 209 | 1130 | 203 | 1480 | 197 | 1825 | 192 | 2495 | 183 | 865/359 |

2700, 3000 and 3500 K = warm white (WW), 4000 K = neutral white (NW), 5000 and 6500 K = cool white (CW)
* Colour tolerance: 3 MacAdam | ** Production tolerance of luminous flux and efficiency: ±10%

| Type | Ref. No. PCB colour "x" White (W) | Ref. No. PCB colour "x" Black (B) | Colour | Correlated colour temp.* K | Typ. luminous flux** and typ. efficiency** at 200 mA lm | 200 mA lm/W | 300 mA lm | 300 mA lm/W | 400 mA lm | 400 mA lm/W | 500 mA lm | 500 mA lm/W | 700 mA lm | 700 mA lm/W | Photometric code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LED Line SMD W2.5 Light&Dark Gen. 2 - L56** | | | | | | | | | | | | | | | |
| MLC SC W2.5/560/x S/56/827 LV G2 | **574449** | **574448** | WW | 2700 | 1435 | 196 | 2115 | 190 | 2770 | 184 | 3415 | 179 | 4665 | 171 | 827/359 |
| MLC SC W2.5/560/x S/56/830 LV G2 | **574451** | **574450** | WW | 3000 | 1435 | 196 | 2115 | 190 | 2770 | 184 | 3415 | 179 | 4665 | 171 | 830/359 |
| MLC SC W2.5/560/x S/56/835 LV G2 | **574453** | **574452** | NW | 3500 | 1530 | 209 | 2260 | 203 | 2965 | 197 | 3650 | 192 | 4985 | 183 | 835/359 |
| MLC SC W2.5/560/x S/56/840 LV G2 | **574455** | **574454** | NW | 4000 | 1530 | 209 | 2260 | 203 | 2965 | 197 | 3650 | 192 | 4985 | 183 | 840/359 |
| MLC SC W2.5/560/x S/56/850 LV G2 | **574457** | **574456** | CW | 5000 | 1530 | 209 | 2260 | 203 | 2965 | 197 | 3650 | 192 | 4985 | 183 | 850/359 |
| MLC SC W2.5/560/x S/56/865 LV G2 | **574459** | **574458** | CW | 6500 | 1530 | 209 | 2260 | 203 | 2965 | 197 | 3650 | 192 | 4985 | 183 | 865/359 |

2700 and 3000 K = warm white (WW), 3500 and 4000 K = neutral white (NW), 5000 and 6500 K = cool white (CW)
* Colour tolerance: 3 MacAdam | ** Production tolerance of luminous flux and efficiency: ±10%

### Optical Characteristics

at $t_p$ = 50 °C, without secondary optics, CRI: $R_a$ > 90

| Type | Ref. No. PCB colour "x" White (W) | Ref. No. PCB colour "x" Black (B) | Colour | Correlated colour temp.* K | Typ. luminous flux** and typ. efficiency** at 100 mA lm | 100 mA lm/W | 150 mA lm | 150 mA lm/W | 200 mA lm | 200 mA lm/W | 250 mA lm | 250 mA lm/W | 350 mA lm | 350 mA lm/W | Photometric code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LED Line SMD W2.5 Light&Dark Gen. 2 - L14** | | | | | | | | | | | | | | | |
| MLC SC W2.5/140/x S/16/927 LV G2 | **574473** | **574472** | WW | 2700 | 325 | 155 | 480 | 150 | 630 | 146 | 775 | 142 | 1055 | 136 | 927/359 |
| MLC SC W2.5/140/x S/16/930 LV G2 | **574475** | **574474** | WW | 3000 | 355 | 169 | 520 | 164 | 685 | 159 | 840 | 155 | 1150 | 147 | 930/359 |
| MLC SC W2.5/140/x S/16/935 LV G2 | **574477** | **574476** | NW | 3500 | 355 | 169 | 520 | 164 | 685 | 159 | 840 | 155 | 1150 | 147 | 935/359 |
| MLC SC W2.5/140/x S/16/940 LV G2 | **574479** | **574478** | NW | 4000 | 380 | 182 | 560 | 177 | 735 | 171 | 910 | 167 | 1240 | 159 | 940/359 |
| MLC SC W2.5/140/x S/16/950 LV G2 | **574481** | **574480** | CW | 5000 | 380 | 182 | 560 | 177 | 735 | 171 | 910 | 167 | 1240 | 159 | 950/359 |
| MLC SC W2.5/140/x S/16/965 LV G2 | **574483** | **574482** | CW | 6500 | 380 | 182 | 560 | 177 | 735 | 171 | 910 | 167 | 1240 | 159 | 965/359 |
| **LED Line SMD W2.5 Light&Dark Gen. 2 - L28** | | | | | | | | | | | | | | | |
| MLC SC W2.5/280/x S/28/927 LV G2 | **574497** | **574496** | WW | 2700 | 570 | 155 | 840 | 150 | 1100 | 146 | 1355 | 142 | 1850 | 136 | 927/359 |
| MLC SC W2.5/280/x S/28/930 LV G2 | **574499** | **574498** | WW | 3000 | 620 | 169 | 910 | 164 | 1195 | 159 | 1470 | 155 | 2010 | 147 | 930/359 |
| MLC SC W2.5/280/x S/28/935 LV G2 | **574501** | **574500** | NW | 3500 | 620 | 169 | 910 | 164 | 1195 | 159 | 1470 | 155 | 2010 | 147 | 935/359 |
| MLC SC W2.5/280/x S/28/940 LV G2 | **574503** | **574502** | NW | 4000 | 665 | 182 | 985 | 177 | 1290 | 171 | 1590 | 167 | 2170 | 159 | 940/359 |
| MLC SC W2.5/280/x S/28/950 LV G2 | **574505** | **574504** | CW | 5000 | 665 | 182 | 985 | 177 | 1290 | 171 | 1590 | 167 | 2170 | 159 | 950/359 |
| MLC SC W2.5/280/x S/28/965 LV G2 | **574507** | **574506** | CW | 6500 | 665 | 182 | 985 | 177 | 1290 | 171 | 1590 | 167 | 2170 | 159 | 965/359 |

2700 and 3000 K = warm white (WW), 3500 and 4000 K = neutral white (NW), 5000 and 6500 K = cool white (CW)
* Colour tolerance: 3 MacAdam | ** Production tolerance of luminous flux and efficiency: ±10%





LIGHTING SOLUTIONS
**Vossloh-Schwabe Deutschland GmbH** · Stuttgarter Straße 61/1 · 73614 Schorndorf · Germany · Phone +49 7181/8002-0 · Fax +49 7181/8002-122 · www.vossloh-schwabe.com

| Type | Ref. No. PCB colour "x" White (W) | Ref. No. PCB colour "x" Black (B) | Colour | Correlated colour temp.* K | Typ. luminous flux** and typ. efficiency** at 200 mA lm | 200 mA lm/W | 300 mA lm | 300 mA lm/W | 400 mA lm | 400 mA lm/W | 500 mA lm | 500 mA lm/W | 700 mA lm | 700 mA lm/W | Photometric code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LED Line SMD W2.5 Light&Dark Gen. 2 - L56** | | | | | | | | | | | | | | | |
| MLC SC W2.5/560/x S/56/927 LV G2 | **574521** | **574520** | WW | 2700 | 1135 | 155 | 1675 | 150 | 2200 | 146 | 2710 | 142 | 3700 | 136 | 927/359 |
| MLC SC W2.5/560/x S/56/930 LV G2 | **574523** | **574522** | WW | 3000 | 1235 | 169 | 1820 | 164 | 2390 | 159 | 2945 | 155 | 4020 | 147 | 930/359 |
| MLC SC W2.5/560/x S/56/935 LV G2 | **574525** | **574524** | NW | 3500 | 1235 | 169 | 1820 | 164 | 2390 | 159 | 2945 | 155 | 4020 | 147 | 935/359 |
| MLC SC W2.5/560/x S/56/940 LV G2 | **574527** | **574526** | NW | 4000 | 1335 | 182 | 1970 | 177 | 2580 | 171 | 3180 | 167 | 4345 | 159 | 940/359 |
| MLC SC W2.5/560/x S/56/950 LV G2 | **574529** | **574528** | CW | 5000 | 1335 | 182 | 1970 | 177 | 2580 | 171 | 3180 | 167 | 4345 | 159 | 950/359 |
| MLC SC W2.5/560/x S/56/965 LV G2 | **574531** | **574530** | CW | 6500 | 1335 | 182 | 1970 | 177 | 2580 | 171 | 3180 | 167 | 4345 | 159 | 965/359 |

2700 and 3000 K = warm white (WW), 3500 and 4000 K = neutral white (NW), 5000 and 6500 K = cool white (CW)
* Colour tolerance: 3 MacAdam | ** Production tolerance of luminous flux and efficiency: ±10%

## Logistics Data

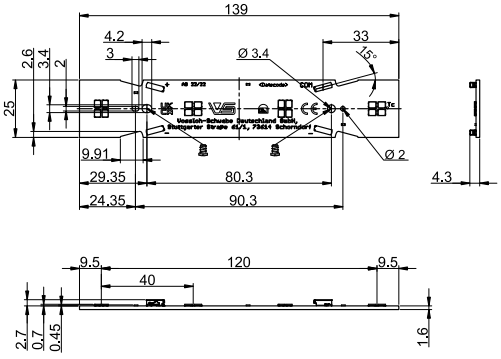
| Product Dimension mm | Product description* | Packaging unit | Dimension of box mm | Pieces per box | Gross weight of box g | Weight per piece g | Box pieces per pallet | Pieces per pallet | Gross weight of pallet kg | Dimension of pallet mm |
|---|---|---|---|---|---|---|---|---|---|---|
| **LED Line SMD W2.5 Light&Dark Gen. 2** | | | | | | | | | | |
| 140x25 | MLC SC W2.5/140/x S/16/yzz G2 | Carton box | 290x190x97 | 144 | 1561.2 | 9.5 | 112 | 16128 | 195.8 | 1200x800x920 |
| 280x25 | MLC SC W2.5/280/x S/28/yzz G2 | Carton box | 290x190x97 | 72 | 1521.8 | 19 | 112 | 8064 | 194.5 | 1200x800x920 |
| 560x25 | MLC SC W2.5/560/x S/56/yzz G2 | Carton box | 570x190x97 | 72 | 2981.7 | 38 | 64 | 4608 | 214.8 | 1200x800x920 |

* Valid as well for SELV versions

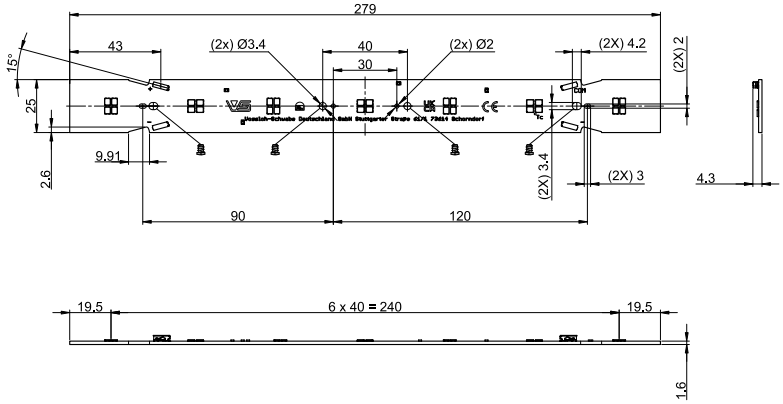
## Mechanical Dimensions

**S = Small Top Connection**

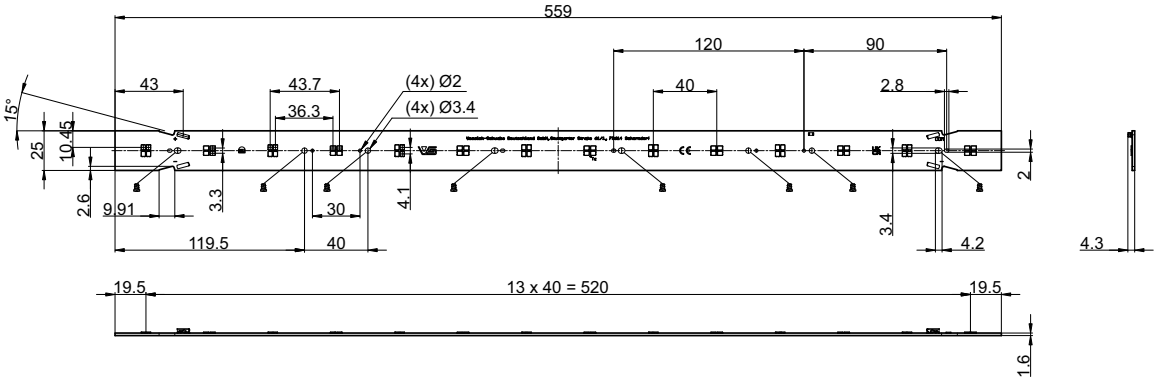
### MLC SC W2.5/140/x S/16/yzz LV G2




### MLC SC W2.5/280/x S/28/yzz LV G2




### MLC SC W2.5/560/x S/56/yzz LV G2



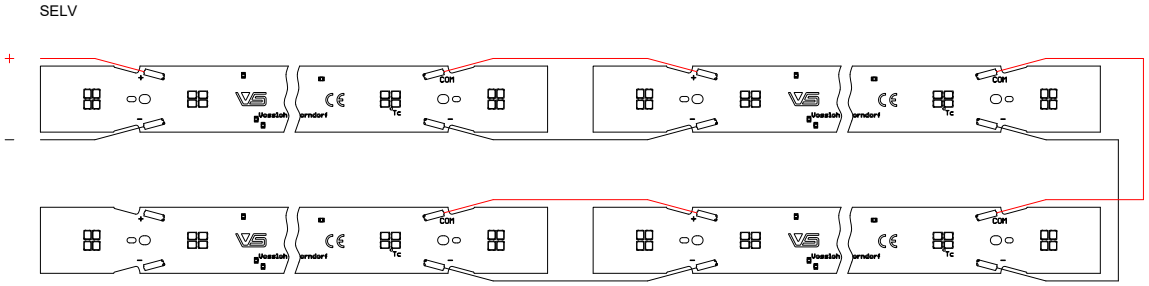

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.



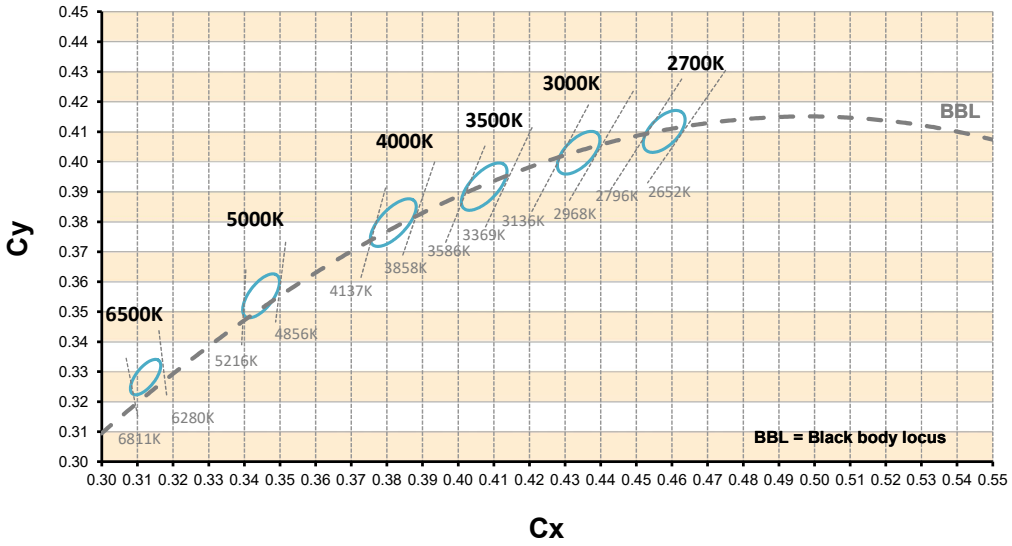
LIGHTING SOLUTIONS
**Vossloh-Schwabe Deutschland GmbH** · Stuttgarter Straße 61/1 · 73614 Schorndorf · Germany · Phone +49 7181/8002-0 · Fax +49 7181/8002-122 · www.vossloh-schwabe.com

**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 Driver = I Module x 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**




# Lineare LED Constant Current Drivers

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





LIGHTING SOLUTIONS
**Vossloh-Schwabe Deutschland GmbH** · Stuttgarter Straße 61/1 · 73614 Schorndorf · Germany · Phone +49 7181/8002-0 · Fax +49 7181/8002-122 · www.vossloh-schwabe.com

**MLC SC W2.5/140/W S/16/830 LV G2**

- **MLC** — Product Area & Shape
  - ML = Module Linear
- **SC** — Technology
  - SC = SMD Constant Current
- **W2.5** — Width
  - W2.5 = 25 mm
- **140** — Length
  - 140 = 140 mm
  - 280 = 280 mm
  - 560 = 560 mm
- **W** — PCB colour (x)
  - W = White
  - B = Black
- **S** — Connection
  - S = Small Top
- **16** — Number of LEDs
- **8** — CRI (y)
  - 8 = 80 CRI minimum
  - 9 = 90 CRI minimum
- **830** — CCT (zz)
  - 27 = 2700 K
  - 30 = 3000 K
  - 35 = 3500 K
  - 40 = 4000 K
  - 50 = 5000 K
  - 65 = 6500 K
- **LV** — Low Voltage
- **G2** — Generation





LIGHTING SOLUTIONS
**Vossloh-Schwabe Deutschland GmbH** · Stuttgarter Straße 61/1 · 73614 Schorndorf · Germany · Phone +49 7181/8002-0 · Fax +49 7181/8002-122 · www.vossloh-schwabe.com

# 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 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 countersank 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: ± 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 unlimited

### 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.





LIGHTING SOLUTIONS
**Vossloh-Schwabe Deutschland GmbH** · Stuttgarter Straße 61/1 · 73614 Schorndorf · Germany · Phone +49 7181/8002-0 · Fax +49 7181/8002-122 · www.vossloh-schwabe.com