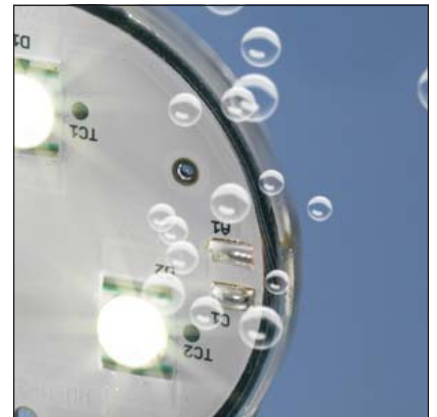




A New Lighting Experience



- **Protection against moisture IP67**
- **long service lifetime due to optimal thermal management**
- **very high lumen output**
- **highly efficient (up to 90 lm/W)**
- **available in different CCT's**
- **easy connections due to pre-assembled leads**
- **easy to assemble due to fixing lugs**
- **resistant against shock and vibrations**
- **optional with attached lenses**

TriplePowerEmitter IP67

WU-M-325-XR-E-IP67

WU-M-325-XR-E-IP67 with optics

Typical Applications

- Integration in outdoor luminaires
- Architectural illumination
- Marking of paths, stairs, etc.
- Light advertising

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Fax: +49 (0) 23 51/101-217 + -384 · www.vossloh-schwabe.com

TriplePowerEmitter IP67

Technical Notes

- PCB diameter: 50 mm
- Pre-assembled with 2 leads
- Aluminum PCB for optimum thermal management
- ESD protection class 2
- Optional with attached lens

Electrical Characteristics

at ambient temperature $t_a = 25\text{ °C}$

| Type | Ref. No. | Colour | Max. current mA | Max. voltage DC V | Max. power consumption W |
|----------------------|------------------|------------|--------------------|----------------------|-----------------------------|
| WU-M-325-XRE-W-IP67 | All types | White | 1050 | 12.9 | 12.9 |
| WU-M-325-XRE-WW-IP67 | All types | Warm white | 700 | 12.3 | 8.6 |

Use of external LED constant current driver with max. 1050 mA for white and 700 mA for warm white required.

Maximum Ratings

Exceeding the maximum ratings can lead to reduction of lifetime or destruction of the module.

| Type | Operation temperature range at t_c -point | | Storage temperature range | | Reverse voltage/LED V |
|-----------|---|---------|---------------------------|---------|--------------------------|
| | °C min. | °C max. | °C min. | °C max. | |
| All types | -20 | 80 | -40 | +85 | 5 |

Optical Characteristics

at junction temperature $t_j = 25\text{ °C}$

| Type | Ref. No. | Colour | Correlated colour temperature (K) | Bright- ness bin** | Luminous flux (lm) at | | | Radiation angle* ° |
|------|----------|--------|---|--------------------------|---------------------------------------|---------------------------------------|---|--------------------------|
| | | | | | 350 mA ($P_{el} = 4.2\text{ W}$) | 700 mA ($P_{el} = 8.7\text{ W}$) | 1050 mA ($P_{el} = 12.9\text{ W}$) | |

Without lens

| | | | | | | | | |
|----------------------|---------------|------------|-------------|----|---------------|---------------|---------------|----|
| WU-M-325-XRE-W-IP67 | 538736 | White | 5650...6950 | Q2 | 249.1...267.7 | 423.4...455.0 | 548.0...588.7 | 90 |
| WU-M-325-XRE-W-IP67 | 538737 | White | 5650...6950 | Q3 | 267.7...285.0 | 455.0...484.5 | 588.7...627.0 | 90 |
| WU-M-325-XRE-W-IP67 | 538738 | White | 5650...6950 | Q4 | 285.0...305.0 | 484.5...518.4 | 627.0...670.9 | 90 |
| WU-M-325-XRE-W-IP67 | 538739 | White | 5650...6950 | Q5 | 305.0...324.9 | 518.4...552.3 | 670.9...714.8 | 90 |
| WU-M-325-XRE-WW-IP67 | 538742 | Warm white | 2720...3040 | P2 | 191.5...210.6 | 325.6...358.1 | not allowed | 90 |
| WU-M-325-XRE-WW-IP67 | 538743 | Warm white | 2720...3040 | P3 | 210.6...229.7 | 358.1...390.5 | not allowed | 90 |
| WU-M-325-XRE-WW-IP67 | 542769 | Warm white | 2720...3040 | P4 | 229.7...249.1 | 390.5...423.5 | not allowed | 90 |

* 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.

** The reference numbers represent a single brightness group. In order to ensure availability please contact your sales prior to order.

TriplePowerEmitter IP67

Optical Characteristics

at junction temperature $t_j = 25\text{ °C}$

| Type | Ref. No. | Colour | Correlated colour temperature (K) | Bright-ness bin** | Luminous flux (lm) at | | | Radiation angle* ° |
|---------------------------|---------------|------------|-----------------------------------|-------------------|------------------------------------|------------------------------------|--------------------------------------|--------------------|
| | | | | | 350 mA ($P_{el} = 4.2\text{ W}$) | 700 mA ($P_{el} = 8.7\text{ W}$) | 1050 mA ($P_{el} = 12.9\text{ W}$) | |
| With attached lens | | | | | | | | |
| WU-M-325-XR-E-W-IP67 15° | 538745 | White | 5650...6950 | Q2 | 224.2...240.8 | 381.1...409.5 | 493.2...529.9 | 15 |
| WU-M-325-XR-E-W-IP67 15° | 538746 | White | 5650...6950 | Q3 | 240.8...256.5 | 409.5...436.1 | 529.9...564.3 | 15 |
| WU-M-325-XR-E-W-IP67 15° | 538747 | White | 5650...6950 | Q4 | 256.5...274.5 | 436.1...466.5 | 564.3...603.8 | 15 |
| WU-M-325-XR-E-W-IP67 15° | 538748 | White | 5650...6950 | Q5 | 274.5...292.4 | 466.5...497.1 | 603.8...643.3 | 15 |
| WU-M-325-XR-E-W-IP67 20° | 538749 | White | 5650...6950 | Q2 | 224.2...240.8 | 381.1...409.5 | 493.2...529.9 | 20 |
| WU-M-325-XR-E-W-IP67 20° | 538750 | White | 5650...6950 | Q3 | 240.8...256.5 | 409.5...436.1 | 529.9...564.3 | 20 |
| WU-M-325-XR-E-W-IP67 20° | 538751 | White | 5650...6950 | Q4 | 256.5...274.5 | 436.1...466.5 | 564.3...603.8 | 20 |
| WU-M-325-XR-E-W-IP67 20° | 538752 | White | 5650...6950 | Q5 | 274.5...292.4 | 466.5...497.1 | 603.8...643.3 | 20 |
| WU-M-325-XR-E-W-IP67 40° | 538753 | White | 5650...6950 | Q2 | 224.2...240.8 | 381.1...409.5 | 493.2...529.9 | 40 |
| WU-M-325-XR-E-W-IP67 40° | 538754 | White | 5650...6950 | Q3 | 240.8...256.5 | 409.5...436.1 | 529.9...564.3 | 40 |
| WU-M-325-XR-E-W-IP67 40° | 538755 | White | 5650...6950 | Q4 | 256.5...274.5 | 436.1...466.5 | 564.3...603.8 | 40 |
| WU-M-325-XR-E-W-IP67 40° | 538756 | White | 5650...6950 | Q5 | 274.5...292.4 | 466.5...497.1 | 603.8...643.3 | 40 |
| WU-M-325-XR-E-WW-IP67 15° | 538758 | Warm white | 2720...3040 | P2 | 172.3...189.5 | 293.0...322.2 | not allowed | 15 |
| WU-M-325-XR-E-WW-IP67 15° | 538759 | Warm white | 2720...3040 | P3 | 189.5...206.7 | 322.2...351.5 | not allowed | 15 |
| WU-M-325-XR-E-WW-IP67 15° | 542770 | Warm white | 2720...3040 | P4 | 206.7...224.2 | 351.5...381.1 | not allowed | 15 |
| WU-M-325-XR-E-WW-IP67 20° | 538761 | Warm white | 2720...3040 | P2 | 172.3...189.5 | 293.0...322.2 | not allowed | 20 |
| WU-M-325-XR-E-WW-IP67 20° | 538762 | Warm white | 2720...3040 | P3 | 189.5...206.7 | 322.2...351.5 | not allowed | 20 |
| WU-M-325-XR-E-WW-IP67 20° | 542771 | Warm white | 2720...3040 | P4 | 206.7...224.2 | 351.5...381.1 | not allowed | 20 |
| WU-M-325-XR-E-WW-IP67 40° | 538764 | Warm white | 2720...3040 | P2 | 172.3...189.5 | 293.0...322.2 | not allowed | 40 |
| WU-M-325-XR-E-WW-IP67 40° | 538765 | Warm white | 2720...3040 | P3 | 189.5...206.7 | 322.2...351.5 | not allowed | 40 |
| WU-M-325-XR-E-WW-IP67 40° | 542772 | Warm white | 2720...3040 | P4 | 206.7...224.2 | 351.5...381.1 | not allowed | 40 |

* 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.

** The reference numbers represent a single brightness group. In order to ensure availability please contact your sales prior to order.

Operating Life

50,000 hrs. (lumen maintenance at 70 %, $t_c = 60\text{ °C}$, $I_f = 350\text{ mA}$)

$t_c = 60\text{ °C}$, $I_f = 350\text{ mA}$

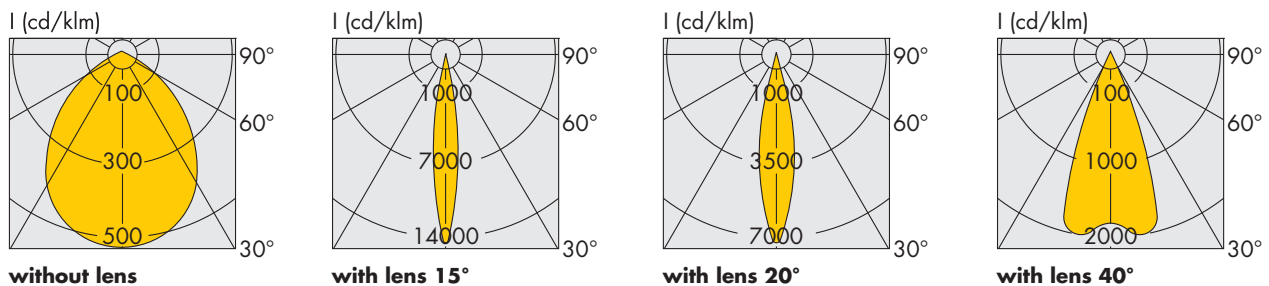
This value does not refer to the colour temperature.

Thermal Characteristics

| Type | Thermal resistance, p-n junction to t_c point K/W | Thermal resistance, p-n-junction to bottom of PCB K/W |
|-----------|--|--|
| All types | 4.6 | 3.5 |

VS recommends an additional cooling element for improved thermal management.

Light Distribution Curves



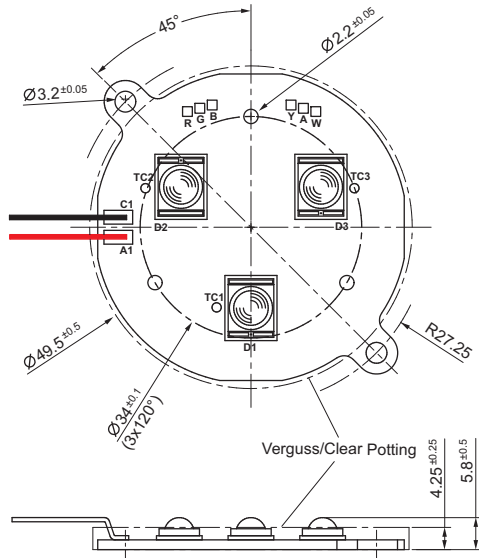
The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification. Please find further detailed information at www.vs-optoelectronic.com.

TriplePowerEmitter IP67

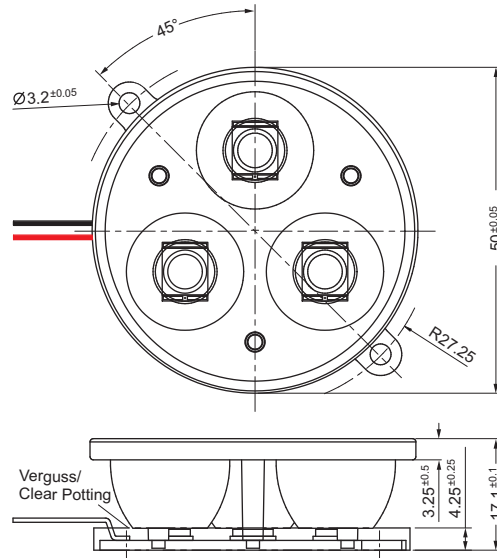
Mechanical Dimensions

The PCB is pre-assembled with
2 leads of 200 mm in length:

- red: anode (+); AWG24/0.205 mm²;
- black: cathode (-); AWG24/0.205 mm²



Module without lens

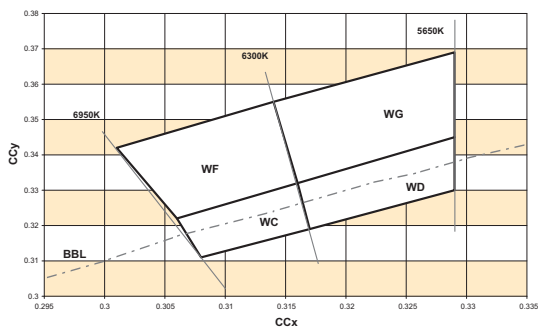


Module with lens

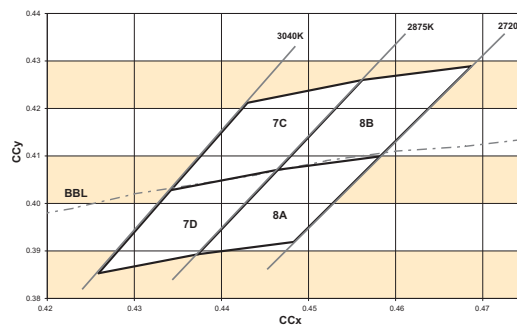
Bins

The standard shipping format regarding the reference numbers on page 2 includes all chromaticity coordinate groups. The concrete delivered group is marked on each product packing. Reduction of orderable groups is possible only project-based.

White



Warm white



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TriplePowerEmitter IP67

Assembly and Safety Information

- LED modules and all PCB components must not be subjected to undue mechanical stress:
 - LED modules must not be handled as bulk cargo
 - Shear and pressure stress must be avoided on LEDs during assembly and handling
- The circuit path must not be damaged or interrupted.
- Fixing clips are integrated in the PCB for easy assembly.
- Safe operation is only possible with an external constant current source (max. 1050 mA for white and max. 700 mA for warm white modules).
- Operation is dependent on constant current drivers that should provide the following protective measures:
 - short-circuit protection
 - overload protection
 - overheating protection
 - SELV equiv. (Safety Extra Low Voltage)
- TriplePowerEmitters IP67 are pre-assembled with two leads (AWG24) with a length of 200 mm.
- Safe operation is dependent on ensuring that the t_c temperature of 90 °C are not exceeded. Depending on the ambient temperature and type of application, additional cooling surfaces and heat-conductive paste or tape (Ref. No. 529157) must be used to avoid heat accumulation in the module.
- 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.
- Mechanical stress to the connection cables must be avoided. Do not bend or pull as this may impair the IP integrity of the unit.
- Please ensure standard ESD (electrostatic discharge) protection measures are employed when handling and installing LED modules. Electrostatic discharge can damage LEDs.
- For the optimal degree of utilization of the attached regulated current source the TriplePowerEmitter IP67 may be used in series connection, whereby the number of modules is limited by the sum of the forward voltages along with the power of the used regulated current source. A parallel connection of the modules is not permitted.
- Tests have shown the following chemicals to be harmful to LEDs used on the modules. It is recommended not to use the under-mentioned chemicals anywhere in an LED system. The fumes from even small amounts of these chemicals may damage the LEDs.
 - Chemicals that might outgas aromatic hydrocarbons (e.g., toluene, benzene, xylene)
 - Methyl acetate or ethyl acetate (i.e., nail polish remover)
 - Cyanoacrylates (i.e., "Superglue")
 - Glycol ethers (including Radio Shack®, Precision Electronics Cleaner – dipropylene glycol monomethyl ether)
 - Formaldehyde or butadiene (including Ashland PLIOBOND® adhesive)
 - Dymax 984-LVUF conformal coating
 - Loctite Sumo glue
 - Gorilla glue
 - Clorox bleach
 - Clorox Clean-Up cleaner spray
 - Loctite 384 adhesive
 - Loctite 7387 activator
 - Loctite 242 threadlocker

Detailed information of handling of Cree LEDs can be found on www.cree.com.