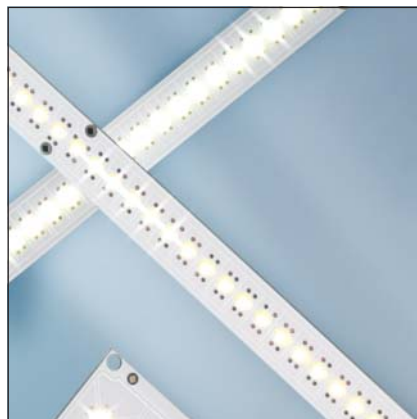




A New Lighting Experience



- high quality due to Chip-on-Board technology
- very high lumen output
- bright light points
- highly efficient
- homogeneous light distribution
- low mounting height
- lead-free soldered
- resistant against shock and vibrations

HighPerformance Standard

WU-M-291 to WU-M-295

Typical Applications

- Architectural illumination
- Luminaires
- Marking paths, stairs, etc.
- Furniture lighting
- Light advertising
- Entertainment, shop design

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Technical Notes

- Efficiency up to 40 lm/W
- Model "square": 20 x 20 mm – 1.2 W; 35 x 35 mm – 2.5 W; 50 x 50 mm – 5 W
and model "line": 12 x 300 mm – 6 W or 12 W
- Detachable header type connecting system

Electrical Characteristics

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

Type	Ref. No.	Colour	Number of light points	Current* mA	Voltage DC* V	Power* W
WU-M-291-SO	530030	Red	60	350	11.5	4.0
WU-M-291-SG	530029	Green	60	350	17.0	6.0
WU-M-291-SB	530028	Blue	60	350	17.0	6.0
WU-M-291-SY	530031	Yellow	60	350	11.5	4.0
WU-M-291-W-3200K	532638	Warm white	60	350	17.0	6.0
WU-M-291-W-4200K	532639	Neutral white	60	350	17.0	6.0
WU-M-291-W-5400K	526742	Neutral white	60	350	17.0	6.0
WU-M-291-W-6500K	532640	Cold white	60	350	17.0	6.0
WU-M-292-SO	530034	Red	60	700	11.5	8.0
WU-M-292-SG	530033	Green	60	700	17.0	12.0
WU-M-292-SB	530032	Blue	60	700	17.0	12.0
WU-M-292-SY	530035	Yellow	60	700	11.5	8.0
WU-M-292-W-3200K	532641	Warm white	60	700	17.0	12.0
WU-M-292-W-4200K	532642	Neutral white	60	700	17.0	12.0
WU-M-292-W-5400K	526743	Neutral white	60	700	17.0	12.0
WU-M-292-W-6500K	532643	Cold white	60	700	17.0	12.0
WU-M-293-SO	530038	Red	12	350	2.3	0.8
WU-M-293-SG	530037	Green	12	350	3.5	1.2
WU-M-293-SB	530036	Blue	12	350	3.5	1.2
WU-M-293-SY	530039	Yellow	12	350	2.3	0.8
WU-M-293-W-3200K	532645	Warm white	12	350	3.5	1.2
WU-M-293-W-4200K	532646	Neutral white	12	350	3.5	1.2
WU-M-293-W-5400K	526744	Neutral white	12	350	3.5	1.2
WU-M-293-W-6500K	532647	Cold white	12	350	3.5	1.2
WU-M-294-SO	530042	Red	12	350	4.6	1.6
WU-M-294-SG	530041	Green	12	350	7.0	2.5
WU-M-294-SB	530040	Blue	12	350	7.0	2.5
WU-M-294-SY	530043	Yellow	12	350	4.6	1.6
WU-M-294-W-3200K	532648	Warm white	12	350	7.0	2.5
WU-M-294-W-4200K	532649	Neutral white	12	350	7.0	2.5
WU-M-294-W-5400K	526745	Neutral white	12	350	7.0	2.5
WU-M-294-W-6500K	532650	Cold white	12	350	7.0	2.5
WU-M-295-SO	530046	Red	12	350	8.6	3.0
WU-M-295-SG	530045	Green	12	350	14.3	5.0
WU-M-295-SB	530044	Blue	12	350	14.3	5.0
WU-M-295-SY	530047	Yellow	12	350	8.6	3.0
WU-M-295-W-3200K	534395	Warm white	12	350	14.0	5.0
WU-M-295-W-4200K	534396	Neutral white	12	350	14.0	5.0
WU-M-295-W-5400K	526746	Neutral white	12	350	14.0	5.0
WU-M-295-W-6500K	534397	Cold white	12	350	14.0	5.0

* 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.

**Use of external LED constant current driver with
max. 350 mA (WU-M- 291, WU-M-293, WU-M-294, WU-M-295) or with
max. 700 mA (WU-M-292) required.**

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.

HighPerformance Standard

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	+70	-40	+85	5

Optical Characteristics

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

Type	Ref. No.	Colour	Dom. wavelength* nm	Colour temperature* K	Typ. luminous flux** lm	Radiation angle* °
WU-M-291-SO	530030	Red	625		116	140
WU-M-291-SG	530029	Green	535		230	140
WU-M-291-SB	530028	Blue	475		60	140
WU-M-291-SY	530031	Yellow	590		150	140
WU-M-291-W-3200K	532638	Warm white		3200	192	140
WU-M-291-W-4200K	532639	Neutral white		4200	240	140
WU-M-291-W-5400K	526742	Neutral white		5400	240	140
WU-M-291-W-6500K	532640	Cold white		6500	216	140
WU-M-292-SO	530034	Red	625		214	140
WU-M-292-SG	530033	Green	535		460	140
WU-M-292-SB	530032	Blue	475		108	140
WU-M-292-SY	530035	Yellow	590		260	140
WU-M-292-W-3200K	532641	Warm white		3200	348	140
WU-M-292-W-4200K	532642	Neutral white		4200	435	140
WU-M-292-W-5400K	526743	Neutral white		5400	435	140
WU-M-292-W-6500K	532643	Cold white		6500	392	140
WU-M-293-SO	530038	Red	625		25	140
WU-M-293-SG	530037	Green	535		47	140
WU-M-293-SB	530036	Blue	475		12	140
WU-M-293-SY	530039	Yellow	590		31	140
WU-M-293-W-3200K	532645	Warm white		3200	38	140
WU-M-293-W-4200K	532646	Neutral white		4200	47	140
WU-M-293-W-5400K	526744	Neutral white		5400	47	140
WU-M-293-W-6500K	532647	Cold white		6500	42	140
WU-M-294-SO	530042	Red	625		46	140
WU-M-294-SG	530041	Green	535		100	140
WU-M-294-SB	530040	Blue	475		25	140
WU-M-294-SY	530043	Yellow	590		62	140
WU-M-294-W-3200K	532648	Warm white		3200	70	140
WU-M-294-W-4200K	532649	Neutral white		4200	88	140
WU-M-294-W-5400K	526745	Neutral white		5400	88	140
WU-M-294-W-6500K	532650	Cold white		6500	79	140
WU-M-295-SO	530046	Red	625		92	140
WU-M-295-SG	530045	Green	535		186	140
WU-M-295-SB	530044	Blue	475		47	140
WU-M-295-SY	530047	Yellow	590		111	140
WU-M-295-W-3200K	534395	Warm white		3200	144	140
WU-M-295-W-4200K	534396	Neutral white		4200	180	140
WU-M-295-W-5400K	526746	Neutral white		5400	180	140
WU-M-295-W-6500K	534397	Cold white		6500	162	140

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

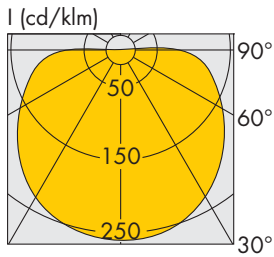
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** Emission data at $t_c = 40\text{ °C}$

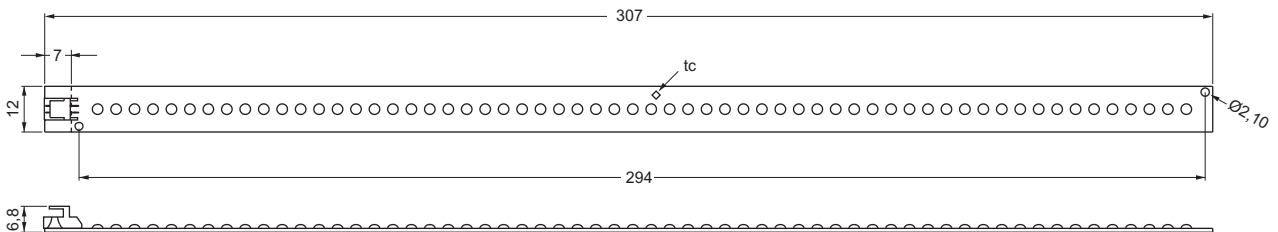
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HighPerformance Standard

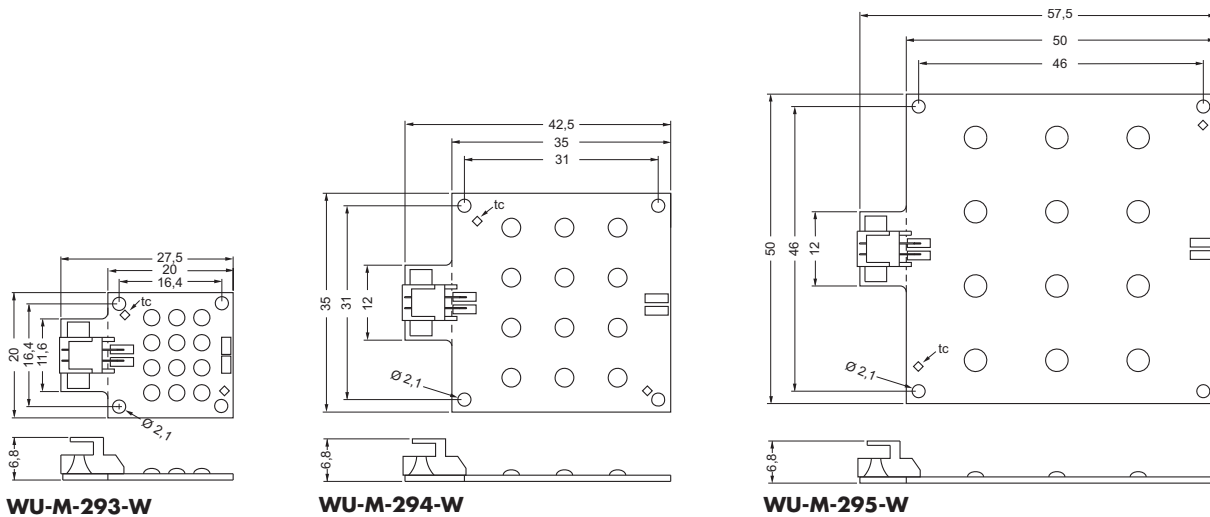
Typical Light Distribution Curve



Mechanical Dimensions



WU-M-291-W und WU-M-292-W



HighPerformance Standard

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 holes are integrated in the PCB for easy assembly. Please use only plastic bolts for assembly to avoid short circuits or damage.
- Safe operation only possible by the use of external constant current sources (350 mA and 700 mA)
- Power supply units must be used for operation, in which the following protective measures are ensured:
 - Short-circuit protection
 - Overload protection
 - Overheating protection
 - SELV equiv. (Safety Extra Low Voltage)
- The maximum output of the power supply must be observed.
- DC input (detachable):
AMP CT 2-pin header type 292173-2.
- To comply with the max. tolerable operating temperature the modules WU-M-292 to 295 have to be mounted (e.g. 3M™ 8810) on a cooling surface.
Minimum values for aluminum (thickness > 2 mm) at $t_a = 25\text{ °C}$:
 - WU-M-292: 60 cm²
 - WU-M-293: 4 cm²
 - WU-M-294: 12 cm²
 - WU-M-295: 25 cm²
- Contact with chemicals containing acid or acetic acid can permanently damage LEDs. Substances and materials containing acid or acetic acid must therefore not be used for cleaning, maintaining and installing LED modules or LED luminaires. The vapours produced by such chemicals alone can damage LEDs.
- Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- Please ensure standard ESD (electrostatic discharge) protection measures are employed when handling and installing LED modules. Electrostatic discharge can damage LEDs.
- The modules are not protected against dust or moisture. When LED modules are operated in unduly moist or dusty environments, care must be taken to ensure each module is built into a protective casing in compliance with the correct IP classification or provided with corrosion protection. Damage caused by moisture and/or corrosion will not be recognised as a material or manufacturing defect.
- For optimal load of used constant current driver the HighPerformance LED 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. A parallel connection of the modules is not allowed.

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