LED MODULES ReadyLine D57-E/20 W

BUILT-IN MODULE 230 V

LED MODULES ReadyLine D57-E/20 W

D57-E_20W_xxx_230V

Typical Applications

- Residential lighting
- Replacement for CFL downlights
- Integration in reflector luminaires
- Furniture lighting

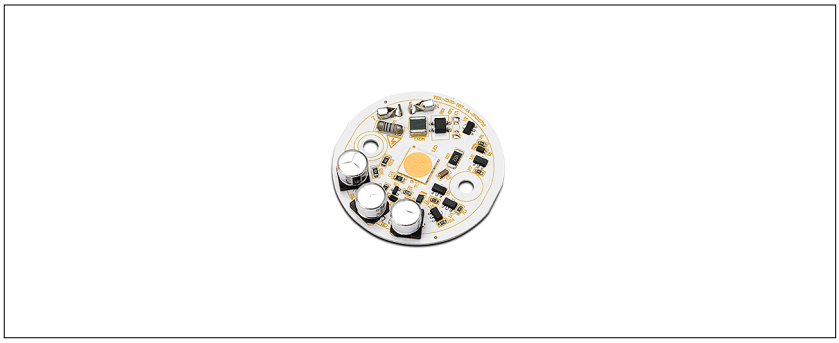
LED Modules ReadyLine D57-E/20 W 230 V

- **DIRECT MAINS CONNECTION**
- **ACC. TO EU REGULATION 2019/2020 (ECODESIGN) AND 2019/2015 (ENERGY LABEL)**
- **DIMMABLE**
- **HIGH POWER FACTOR**
- **LONG SERVICE LIFETIME: 45,000 HRS (L70/B10)**

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

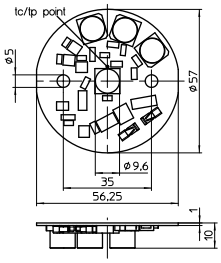
LED Modules ReadyLine D57-E/20 W

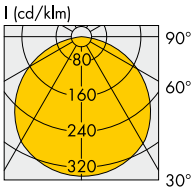


Technical Notes

- LED built-in module for integration into luminaires
- Mains voltage: 220–240 V AC, 50/60 Hz
- Power factor: > 0.9
- Surge protection: ≥ 1 kV
- THD: < 40 %
- Colour accuracy initially: 3 MacAdam
- Dimensions (ØxH) / LES Ø
  Ø 57 x 10 mm / Ø 9.6 mm
- On-Board push-in connector

D57





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.

Applied Standards

- EN 62031
  LED modules for general lighting – Safety specifications
- EN 62471 and IEC TR 62778
  Photobiological safety of lamps and lamp systems
- EN 55015
  Radio disturbance emissions
- EN 61000-3-2
  Limits for harmonic emissions
- EN 61547
  Immunity requirements
- EN 61000-3-3
  Limits for voltage fluctuations and flicker

Electrical Characteristics

at t_p = 55 °C

Type	Typ. supply voltage AC V	Operation frequency Hz	Inrush current mA	Typ. power consumption at 230 V (W)	Total harmonic distortion (THD) %	SVM	Pstlm	Percent flicker %
LR57_20W_230V	230	50/60	1028	20	≤40	<0.4	<1.0	<10

Maximum Ratings

Exceeding the maximum ratings can lead to reduction of service life or destruction of the modules.

Type	Power consumption W	Operation voltage range AC (V)		Operation temperature range at t_c point		Storage temperature range	
		min.	max.	°C min.	°C max.	°C min.	°C max.
LR57_20W_230V	20	220	240	–30	+85	–40	+85

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

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Operating Life

in hours at measured temperature at t_p point

Lumen maintenance	50 °C in hrs.	60 °C in hrs.	70 °C in hrs.	80 °C in hrs.
	20 W			
L90/B10	20,000	20,000	20,000	15,000
L80/B10	45,000	45,000	40,000	35,000
L70/B10	50,000	50,000	50,000	45,000

Lifetime L70/B50, >50,000 hrs at tp = 70 °C

Optical Characteristics

Typ. output W	Type	**Ref. No.**	Colour	Correlated colour temperature K	Luminous flux (lm) and typ. efficieny (lm/W)* at t_c 25 °C typ. lm	typ. lm/W	Typ. CRI R_a
20	LR57_20W_927_230V	**572279**	warm white	2700	1920	96	90
	LR57_20W_930_230V	**572280**	warm white	3000	1960	98	90
	LR57_20W_940_230V	**on request**	neutral white	4000	1990	100	90
	LR57_20W_827_230V	**on request**	warm white	2700	2060	103	80
	LR57_20W_830_230V	**on request**	warm white	3000	2140	107	80
	LR57_20W_840_230V	**572284**	neutral white	4000	2205	110	80

* Production tolerance of luminous flux and efficiency: ± 10% | CRI ± 3
Other colour temperature on request (3500K/5000K/5700K) | Versions on request: Minimum order quantity: 375 pcs.

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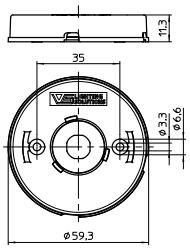
Accessories for LED Modules ReadyLine D57-E/20 W

Holders

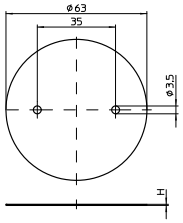
Material: PBT V2, white



Type	Ref. No.	Dimensions (ØxH) mm	Pack. unit pcs.
D57_Holder	**572403**	59.3x11.3	200
LES Protection Cover	**606378**	23.5x0.75	200

Thermal pads

Thermal conductivity λ: 2 W/mK



Ref. No.	Dimensions (ØxH) mm	Pack. unit pcs.	No. of adhesive side(s)
559883	63 x 0,5	100	2
572316	63 x 0,07	100	1

Selection of automatic cut-outs

Type	Automatic cut-out type and possible No. Of VS led modules (pcs)					
	B 10A	B 16A	B 20A	C10A	C 16A	C 20A
LR57_20W_230V	50	80	100	50	80	100

Logistics information

Type	Packaging dimensions LxWxH (mm)	Packaging unit/ minimum order quantity			Weight per pack. unit g
		pcs.	pcs./tray	trays/box	
LR57_20W_230V	400x400x90	125	25	5	3000
Holder	390x190x105	200	–	–	1400
Tape	–	100	–	–	–

EPREL Information

Light Source Type	EPREL Reg. No.	EE Class
LR57_20W_927_V1	1227179	F
LR57_20W_930_V1	1227183	F
LR57_20W_840_V1	1227234	F

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Assembly and Safety Information

The LED modules are designed for direct mains operation (230 V AC). Installation must be carried out under observation country specific relevant safety regulations and standards.

- The LED module is a built-in lighting module to assemble into luminaires.
- Suitable for luminaires of protection class I, grounding is mandatory to comply with safety standards.
- In case of applications in luminaires of protection class II the safety regulations acc. to luminaire safety standards must be observed.
- Vossloh-Schwabe generally recommends to use the thermally conductive adhesive pads (Ref. No. 559883 / 572316) and the holders (Ref. No. XXXXXX)
- Operation of the LED module is not allowed when it is not built-in into a luminaire. Depending on application, luminaire application specific safety standards have to be observed (e.g. EN 60598-1 for Europe). Depending on the use of the luminaire in different countries (export), the country specific safety standards have to be regarded (e.g. EN 60598-1 for Europe).
  - Regard to sufficient isolation acc. country specific standards.
  - Live parts must not be touched. Luminaire must be closed acc. country specific standards. Danger of life!!!
- Clearance and creepage distances of the module are designed for class I luminaires (basic insulation). For built-in of the module the required standards have to be observed (e.g. EN 60598-1).
- Do not exceed values given in this specification.
- Do not exceed max t_c temperature of 85 °C
- The module must be fixed onto a thermally conductive surface. Heat sink must cover the entire backside surface of the module.
- When installing/screwing the module into a luminaire, please ensure that cables are not squeezed between luminaire/heat-sink and LED module.
- Please ensure standard ESD (electrostatic discharge) protection measures are employed when handling and installing LED modules. Electrostatic discharge can damage LEDs.
- The LED modules are connected via two on board push-in connectors for flexible or solid conductors.
  Conductor section: AWG22-AWG18
  - Flexible: 0.45 mm²– 0.96 mm²
  - Solid: 0.324 mm² – 0.82 mm²

  Strip length: 5 mm ±0.5 mm
  The AWG22 flexible cable has to be tinned
  The AWG20 and AWG18 wires have to be twisted.
  The contacts can be released with a flat-headed screwdriver with a width of 3 mm. It has to be ensured, that the used cables do not decrease clearance and creepage distance of the modules. The cable must be put in completely (as far as isolation will go) into terminal. Used cables must fulfil luminaire safety standards (EN 60598). Other country specific standards have to be regarded.
- Parallel connection is mandatory for safe electrical operation. Serial connection of LED modules is not allowed.
- Due to the used electronic parts on the module not all available phase-cutting dimmers are compatible. Dimmable with phase-cutting leading- and trailing-edge dimmer. Minimum dimmer load has to be observed. The compatibility of the dimmer and the modules has to be confirmed prior to installation to avoid flickering.
- The modules must be fixed with M3 screws. Fixation only with flat or cylinder head screws (M3) (no countersank screws). Max. torque for PCB: 0.6 Nm (M3), max. torque with holder: 0.3 Nm (M3).
- To ensure problem-free operation, the specified maximum temperature at the t_c 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.
- 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. Relevant country and application specific standards have to be regarded.
- Installation by qualified electrician only
- Do not add or change wires while circuit is active
- Do not make modifications on module
- Do not use adhesives to attach that outgas organic vapour
- Do not use togehter with material containing sulfur
- Do not operate module with AC generators
- Do not operate modules by DC
- LED modules must not be subjected to any undue mechanical stress, e. g.: LED module
  - handle modules carefully
  - avoid shear and compressive forces onto the modules during handling and installation
  - avoid vibrations of more than 2 kHz, 40 G
- If module is used in rooms with fast moving parts as the light modulation might cause stroboscopic effects.
- This LED module might interfere with displays and cameras due to modulation.
- The photobiological safety of the LED modules is classified into risk groups in accordance with EN 62471: 2008 and IEC TR 62778: risk group 1

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