LED SOLUTIONS READYLINE C10-E

DRIVER-ON-BOARD TECHNOLOGY

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Built-in self ballasted LED solutions for direct connection to mains voltage

With so-called Driver-on-Board technology (DoB), the control gear unit is directly integrated into the LED module, which permits direct connection to mains voltage (220–240 V, 50/60 Hz).

The built-in LED solutions of the ReadyLine series are suitable for residential and furniture lighting, as a replacement for halogen, energy-saving and compact fluorescent lamps and get more freedom for creative design process.

Typical applications

- Replacement for compact fluorescent lamps (ideal for wall-mounted and ceiling-mounted luminaires)
- Integration in luminaires
- Residential lighting
- Architectural lighting
- Retail lighting
- Furniture lighting

ReadyLine C10-E

- **DIRECT MAINS CONNECTION**
- **GLUED COVER TO PROTECT AGAINST ELECTRICAL SHOCK**
- **DIP-SWITCH: 16 W / 10 W**
- **ACC. TO EU REGULATION 2019/2020 (ECODESIGN) AND 2019/2015 (ENERGY LABEL)**
- **LONG SERVICE LIFE**
- **DIMMABLE**

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 Solutions ReadyLine C10-E

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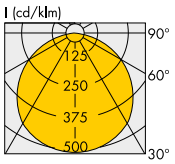
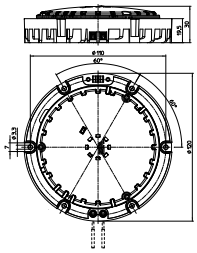
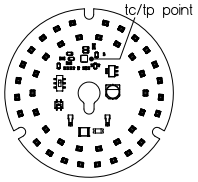
Technical notes

LED built-in module for integration into luminaires
Mains voltage: 220–240 V, 50/60 Hz
Power factor: > 0.95
Surge protection: ≥ 1 kV
Colour accuracy initially: 3 MacAdam
Protection cover: PC, UV-glued or rivetted (module with heat sink)
Dimensions: Ø 100 mm;
Ø 120 mm with co-moulded heat sink
Screw terminals for LED module with heat sink: 2.5 mm²
With leads for LED module without heat sink:
double FEP/FEP-insulation, length: 250 mm,
central or lateral lead exit
Fixing holes for screws M3 or self-tapping screws 2.9
Lumen maintenance: L70/B50, 50,000 hrs. at t_c = 75 °C
Max. operating temperature at t_c point: 85 °C

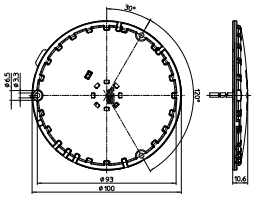
With heat sink, protection cover and 2-poles screw terminals



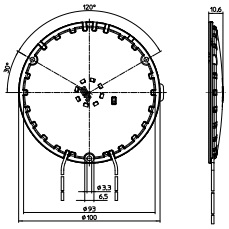




With central lead exit



With lateral lead exit



Electrical Characteristics

at t_c = 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	$P_{st}LM$	Percent flicker %
LR42W_16W_10W_230V	230	50/60	44	10	≤25	<0.1	<0.4	<5
LR42W_16W_10W_230V	230	50/60	63	16	≤25	<0.1	<0.4	<5

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) min.	max.	Operation temperature range at t_p point °C min.	°C max.	Storage temperature range °C min.	°C max.
LR42W_16W_10W_230V	10	220	240	–30	+85	–40	+85
LR42W_16W_10W_230V	16	220	240	–30	+85	–40	+85

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.	50 °C in hrs.	60 °C in hrs.	70 °C in hrs.	80 °C in hrs.
	10 W				**16 W**			
L90/B10	30,000	30,000	20,000	20,000	25,000	25,000	20,000	15,000
L80/B10	50,000	45,000	40,000	35,000	50,000	45,000	35,000	30,000
L70/B10	50,000	50,000	45,000	45,000	50,000	45,000	40,000	35,000

Performance acc. to IEC 62717: tp = 70 °C; >50,000 hrs

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Optical Characteristics

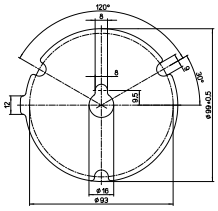
CRI 90

Max. output W	Type	Ref. No. with heat sink	Ref. No. without heat sink	Colour	Correlated colour temperature K	Cover	Lead exits	Luminous flux (lm) and typ. efficieny (lm/W)* 16 W lm	16 W lm/W	10 W lm	10 W lm/W
10/16	LR42W_927_16W_10W_230V	**571964**	**571960**	warm white	2700	clear	central	1445	90	930	93
	LR42W_927_16W_10W_230V	**on request**	**571961**	warm white			lateral				
	LR42W_927_16W_10W_230V	**571965**	**571962**	warm white		diffuse	central	1340	84	860	86
	LR42W_927_16W_10W_230V	**on request**	**571963**	warm white			lateral				
	LR42W_930_16W_10W_230V	**571970**	**571966**	warm white	3000	clear	central	1535	96	990	99
	LR42W_930_16W_10W_230V	**on request**	**571967**	warm white			lateral				
	LR42W_930_16W_10W_230V	**571971**	**571968**	warm white		diffuse	central	1420	89	915	92
	LR42W_940_16W_10W_230V	**on request**	**571969**	warm white			lateral				
	LR42W_940_16W_10W_230V	**on request**	**on request**	neutral white	4000	clear	central	1595	100	1025	103
	LR42W_940_16W_10W_230V	**on request**	**on request**	neutral white			lateral				
	LR42W_940_16W_10W_230V	**on request**	**on request**	neutral white		diffuse	central	1480	93	950	95
	LR42W_940_16W_10W_230V	**on request**	**on request**	neutral white			lateral				

Accessories	Description	Tape thickness	Thermal conductivity	Breakdown voltage**
553981* **	Thermally conductive transfer tape, non-adhesive	0.25 mm	2 W/mK	3 kV
553795** **	Thermally conductive transfer tape, adhesive on both sides	0.19 mm	0.9 W/mK	10.3 kV

* Production tolerance of luminous flux and efficiancy: +/-10% - CRI+/-3; Luminous flux at Tp = 25 °C
Other colour temperature or CRI values on request - Minimum order quantity: 480 pcs.

Ref. No.: 553981



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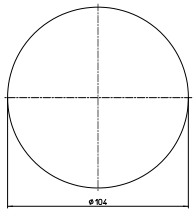
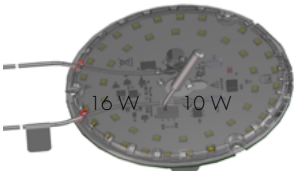


DIP-Switch information

Dip-switch can be moved with a plastic tool of max. 1.8mm in dia.
Factory setting: 16 W



Logistics information

Type	Packaging dimensions LxWxH (mm)	Packaging unit/ minimum order quantity pcs.	pcs./tray	trays/box	Weight single g	Gross Weight package g
with heatsink	600x400x80	28	14	2	220	6524
without heatsink	600x400x80	36	12	3	60	3024

EPREL information

ReadyLine C10-E is a containing product of LED modules:

- VS type: DLM_100C_16W_xxx_A1

Light Source

Containing product ReadyLine C10-E Type	Light Source Type	EPREL Reg. No.	EE Class
LR42W_927 16W_10W_230V	DLM_100C_16W_927_A1	1216808	F
LR42W_930 16W_10W_230V	DLM_100C_16W_930_A1	1216782	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.
- 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.
- For the operation of VS recommends to mount the module directly onto the metal heat sink or luminaire housing is mandatory to comply with immunity standards (e.g. EN 61547).
- 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.
- 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 avoide flickering.
- 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

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

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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