

ReadyLine D34-E 230 V – For Direct Connection to Mains Voltage

# LED MODULES ReadyLine D34-E

BUILT-IN MODULE  
230 V



## LED MODULES ReadyLine D34-E

**D34\_xxW\_xxx\_230V**

### Typical Applications

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




### LED Modules ReadyLine D34-E 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)**

## LED Modules ReadyLine D34-E

### 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: < 35 %
- Colour accuracy initially: 3 MacAdam
- Dimensions (ØxH) / LES Ø  
Ø 34 x 7.5 mm / Ø 6.3 mm
- Welding Pads
- Fixitation: Fixing holes for screws M2.5

### 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](http://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  $t_p = 55\text{ °C}$

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 %
LR34_04W_230V	230	50/60	48	4	≤35	<0.4	<0.2	<10
LR34_05W_230V	230	50/60	48	5	≤35	<0.4	<0.2	<10

### Maximum Ratings

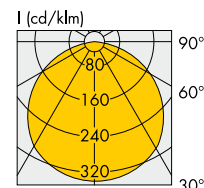
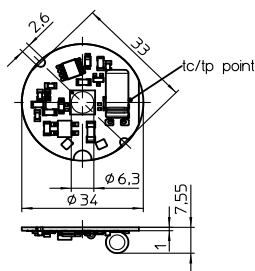
Exceeding the maximum ratings can lead to reduction of service life or destruction of the modules.

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.
LR34_04W_230V	4	220	240	-30	+85	-40	+85
LR34_05W_230V	5	220	240	-30	+85	-40	+85

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D34



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## Operating Life

in hours at measured temperature at  $t_p$  point

Lumen maintenance	50 °C	60 °C	70 °C	80 °C	50 °C	60 °C	70 °C	80 °C
	in hrs.	in hrs.	in hrs.	in hrs.	in hrs.	in hrs.	in hrs.	in hrs.
	<b>4 W</b>				<b>5 W</b>			
L90/B10	20,000	20,000	20,000	15,000	20,000	20,000	20,000	15,000
L80/B10	45,000	45,000	40,000	35,000	45,000	45,000	40,000	35,000
L70/B10	50,000	50,000	50,000	45,000	50,000	50,000	50,000	45,000

Lifetime L70/B50, >50,000 hrs at  $t_p = 70\text{ °C}$

## Optical Characteristics

Typ. output W	Type	Ref. No.	Colour	Correlated colour temperature K	Luminous flux (lm) and typ. efficiency (lm/W) *		Typ. CRI $R_a$
					at $t_c 25\text{ °C}$ typ. lm	typ. lm/W	
4	LR34_4W_927_230V	<b>572151</b>	warm white	2700	350	88	90
	LR34_4W_930_230V	<b>572152</b>	warm white	3000	360	90	90
	LR34_4W_940_230V	<b>572159</b>	neutral white	4000	380	95	90
	LR34_4W_827_230V	<b>on request</b>	warm white	2700	390	98	80
	LR34_4W_830_230V	<b>on request</b>	warm white	3000	400	100	80
	LR34_4W_840_230V	<b>on request</b>	neutral white	4000	420	105	80
5	LR34_5W_927_230V	<b>on request</b>	warm white	2700	440	88	90
	LR34_5W_930_230V	<b>on request</b>	warm white	3000	450	90	90
	LR34_5W_940_230V	<b>on request</b>	neutral white	4000	475	95	90
	LR34_5W_827_230V	<b>on request</b>	warm white	2700	490	98	80
	LR34_5W_830_230V	<b>on request</b>	warm white	3000	500	100	80
	LR34_5W_840_230V	<b>on request</b>	neutral white	4000	525	105	80

\* Production tolerance of luminous flux and efficiency:  $\pm 10\%$  | CRI  $\pm 3$   
Other colour temperature on request (3500K/5000K/5700K) – LR34 versions on request: minimum order quantity: 660 pcs

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## Accessories for LED Modules ReadyLine D34-E



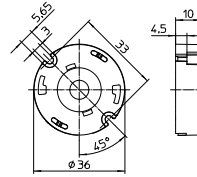
### Holders

Material: PC V2, white

Type	Ref. No.	Dimensions (ØxH) mm	Pack. unit pcs.
D34_Holder	<b>572204</b>	36x10	220

Fixing holes for screws M2.5

### 572204

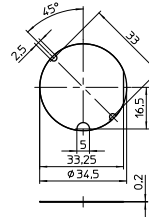


### Thermal pads

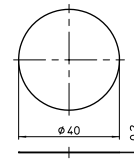
Thermal conductivity : 2 W/mK

Ref. No.	Dimensions (ØxH) mm	Pack. unit pcs.	No. of adhesive side(s)	Thermal conductivity W/mK
<b>572282</b>	40 x 0,2	220	2	0,7
<b>572281</b>	34,5 x 0,2	220	1	2

### 572281



### 572282



### 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
<b>LR34_4W_xxx_230V</b>	500	800	1000	500	800	1000
<b>LR34_5W_xxx_230V</b>	500	800	1000	500	800	1000

### Logistics information

Type	Packaging dimensions LxWxH (mm)	Packaging unit/ minimum order quantity			Weight per pack. unit g
		pcs.	pcs./tray	trays/box	
LR34_4W_xxx_230V	300x230x125	220	20	11	1900
LR34_5W_xxx_230V	300x230x125	220	20	11	1900
Holder	260x130x75	220	-	-	800
Thermal Pads	125x35x125	220	-	-	1200

### EPREL Information

Light Source		
Type	EPREL Reg. No.	EE Class
LR34_4W_927_230V	1174259	F
LR34_4W_930_230V	1174810	F
LR34_4W_940_230V	1174837	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. 572281 / 572282) and the holders (Ref. No. 572204)
- 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.
- Welding instructions:  
Soldering iron temperature: 350°C  
First, heat the welding object and the object to be welded at the same time, and the angle of the soldering iron is 45±15°  
After heating until the tin can be melted (there will be different results depending on the combination of different materials), then put the tin wire between the two materials, so that it is fused between the two; stop for 1-2seconds, remove the soldering iron and wait cooling and setting. It has to be ensured, that the used cables do not decrease clearance and creepage distance of the modules. 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 M2.5 screws. Fixation only with flat or cylinder head screws (M2.5) (no countersunk screws). Max. torque for PCB: 0.4 Nm (M2.5), max. torque with holder: 0.4 Nm (M2.5).
- 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 together 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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