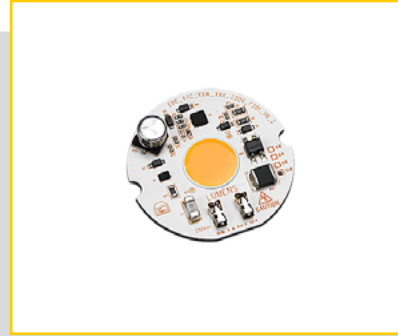


LED MODULES ReadyLine COB-E

BUILT-IN MODULE
230 V



LED MODULES ReadyLine COB-E

EDC_47C_xxW_xxx_230V

Typical Applications

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




LED Modules ReadyLine COB-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)**
- **WIDE RANGE OF OPTICS AVAILABLE**

LED Modules ReadyLine COB E

Technical Notes

- LED built-in module for integration into luminaires 
- Mains voltage: 230 V AC
- Power factor: > 0.95
- THD: < 30 %
- Colour accuracy initially: 3 MacAdam
- Dimensions (ØxH) / LES Ø
EDC_47C: Ø 47 x 7.6 mm / Ø 16 mm
- On-Board push-in connector

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.

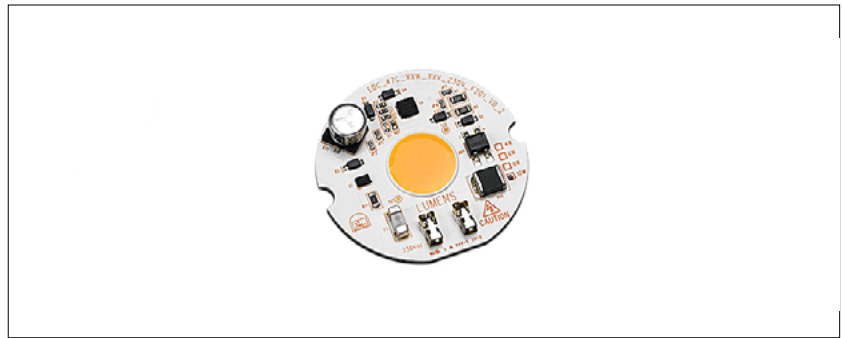
Applied Standards

- 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

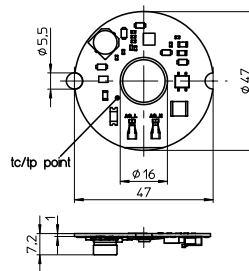
Electrical Characteristics

at $t_p = 55\text{ °C}$

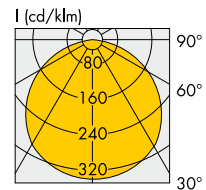
| Type | Typ. supply voltage AC V | Operation frequency Hz | Inrush current mA | Typ. power consumption at 230 V (W) | Total harmonic distortion (THD) % | SVM | Pstlm | Percent flicker % |
|----------------------|--------------------------|------------------------|-------------------|-------------------------------------|-----------------------------------|------|-------|-------------------|
| EDC_47C_4W_xxx_230V | 230 | 50/60 | 20 | 4 | ≤30 | <0,1 | <0,4 | <5 |
| EDC_47C_6W_xxx_230V | 230 | 50/60 | 30 | 6 | ≤30 | <0,1 | <0,4 | <5 |
| EDC_47C_8W_xxx_230V | 230 | 50/60 | 40 | 8 | ≤30 | <0,1 | <0,4 | <5 |
| EDC_47C_10W_xxx_230V | 230 | 50/60 | 50 | 10 | ≤30 | <0,1 | <0,4 | <5 |



EDC_47C



Tolerance: ± 0.1 mm



ReadyLine COB-E 230 V Gen. 3 – For Direct Connection to Mains Voltage

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 | | at LES surface °C | Storage temperature range | |
|----------------------|------------------------|-----------------------------------|------|---|---------|----------------------|---------------------------|---------|
| | | min. | max. | °C min. | °C max. | | °C min. | °C max. |
| EDC_47C_4W_xxx_230V | 4 | 220 | 240 | -30 | +85 | 115 | -40 | +85 |
| EDC_47C_6W_xxx_230V | 6 | 220 | 240 | -30 | +85 | 115 | -40 | +85 |
| EDC_47C_8W_xxx_230V | 8 | 220 | 240 | -30 | +85 | 115 | -40 | +85 |
| EDC_47C_10W_xxx_230V | 10 | 220 | 240 | -30 | +85 | 115 | -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. |
|-------------------|------------------|------------------|------------------|------------------|
| EDC_47C | | | | |
| L90/B10 | 20,000 | 20,000 | 20,000 | 15,000 |
| L80/B10 | 40,000 | 35,000 | 30,000 | 25,000 |
| L70/B10 | 50,000 | 50,000 | 45,000 | 45,000 |

Lifetime L70/B50, >50,000 hrs at $t_p = 70$ °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 $t_c 25$ °C | | at $t_c 55$ °C | | |
| | | | | | typ. lm | typ. lm/W | typ. lm | typ. lm/W | |
| EDC_47C | | | | | | | | | |
| 4 | EDC_47C_4W_827_230V | on request | warm white | 2700 | 365 | 91 | 350 | 88 | 80 |
| | EDC_47C_4W_830_230V | on request | warm white | 3000 | 400 | 100 | 380 | 95 | 80 |
| | EDC_47C_4W_840_230V | on request | neutral white | 4000 | 415 | 104 | 395 | 99 | 80 |
| | EDC_47C_4W_927_230V | 571928 | warm white | 2700 | 315 | 79 | 300 | 75 | 90 |
| | EDC_47C_4W_930_230V | 571929 | warm white | 3000 | 345 | 86 | 330 | 83 | 90 |
| | EDC_47C_4W_940_230V | 571930 | neutral white | 4000 | 355 | 89 | 340 | 85 | 90 |
| 6 | EDC_47C_6W_827_230V | on request | warm white | 2700 | 550 | 92 | 525 | 88 | 80 |
| | EDC_47C_6W_830_230V | on request | warm white | 3000 | 600 | 100 | 570 | 95 | 80 |
| | EDC_47C_6W_840_230V | on request | neutral white | 4000 | 625 | 104 | 600 | 100 | 80 |
| | EDC_47C_6W_927_230V | 572219 | warm white | 2700 | 475 | 79 | 450 | 75 | 90 |
| | EDC_47C_6W_930_230V | 572220 | warm white | 3000 | 515 | 86 | 490 | 82 | 90 |
| | EDC_47C_6W_940_230V | on request | neutral white | 4000 | 535 | 89 | 510 | 85 | 90 |
| 8 | EDC_47C_8W_827_230V | on request | warm white | 2700 | 770 | 96 | 740 | 93 | 80 |
| | EDC_47C_8W_830_230V | on request | warm white | 3000 | 840 | 105 | 800 | 100 | 80 |
| | EDC_47C_8W_840_230V | on request | neutral white | 4000 | 875 | 109 | 835 | 104 | 80 |
| | EDC_47C_8W_927_230V | 571931 | warm white | 2700 | 665 | 83 | 635 | 79 | 90 |
| | EDC_47C_8W_930_230V | 571932 | warm white | 3000 | 720 | 90 | 690 | 86 | 90 |
| | EDC_47C_8W_940_230V | 571933 | neutral white | 4000 | 750 | 94 | 715 | 89 | 90 |
| 10 | EDC_47C_10W_827_230V | on request | warm white | 2700 | 965 | 97 | 920 | 92 | 80 |
| | EDC_47C_10W_830_230V | on request | warm white | 3000 | 1050 | 105 | 1000 | 100 | 80 |
| | EDC_47C_10W_840_230V | on request | neutral white | 4000 | 1090 | 109 | 1040 | 104 | 80 |
| | EDC_47C_10W_927_230V | 571934 | warm white | 2700 | 830 | 83 | 790 | 79 | 90 |
| | EDC_47C_10W_930_230V | 571935 | warm white | 3000 | 900 | 90 | 860 | 86 | 90 |
| | EDC_47C_10W_940_230V | 571936 | neutral white | 4000 | 940 | 94 | 895 | 90 | 90 |

* Production tolerance of luminous flux and efficiency: $\pm 10\%$ | CRI ± 3

Other colour temperature on request (3500K/5000K/5700K)

EDC_47C versions on request: minimum order quantity: 540 pcs.

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Accessories for LED Modules ReadyLine COB

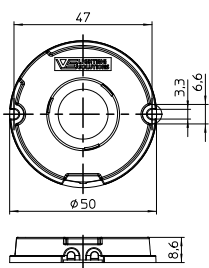


Holders

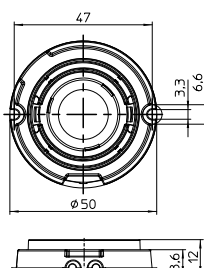
Material: PBT V2, white

| Type | Ref. No. | Dimensions (ØxH) mm | Pack. unit pcs. |
|----------------------------|---------------|---------------------|-----------------|
| EDC_47C_Holder | 571946 | 50x8.6 | 200 |
| EDC_47C_Holder_PLUS/EVOLVE | 571947 | 50x12 | 200 |
| EDC_47C_Holder_EVO | 571948 | 50x10.6 | 200 |
| LES protection cover | 606378 | 23.5x0.75 | 200 |

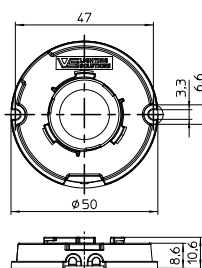
EDC_47C_Holder



EDC_47C_Holder_PLUS/EVOLVE



EDC_47C_Holder_EVO

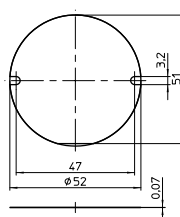


Thermal pads

Thermal conductivity λ : 2 W/mK

| Type | Ref. No. | Dimensions (ØxH) mm | Pack. unit pcs. | No. of adhesive side(s) |
|------|---------------|---------------------|-----------------|-------------------------|
| 47C | 572150 | 52 x 0.07 | 100 | 1 |

47C



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Reflectors PLUS

Technical notes

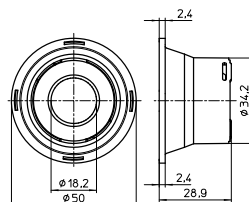
For click-in fixation on holders 571947

Diameter: 50 mm

Material: PC

Operating temperature: -25 to 90 °C

Storage temperature: -40 to 90 °C



| Ref. No. | For LED modules | Beam angle (°) | Cover | Optical efficiency (%) | Weight g |
|----------|-----------------|----------------|--------|------------------------|----------|
| 603688 | EDC_47C | 26 | Diffus | 65 | 10 |
| 604920 | EDC_47C | 36 | Diffus | 70 | 10 |

Lenses Evolve 50

Technical notes

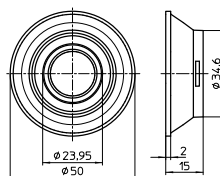
For click-in fixation on holders 571947

Diameter: 50 mm

Material: PC

Operating temperature: -25 to 90 °C

Storage temperature: -40 to 90 °C



| Ref. No. | For LED modules | Beam angle (°) | Cover | Optical efficiency (%) | Weight g |
|----------|-----------------|----------------|-------|------------------------|----------|
| 603674 | EDC_47C | 26 | — | 60 | 15 |
| 604879 | EDC_47C | 40 | — | 65 | 15 |

Reflectors EVO

Exchangeable aluminum reflectors

Technical notes

Reflectors for bayonet fixation on holder 571948

made of aluminium

Surface: anodised

Weight: 17/27 g (D75/D90)

Packaging unit: 18 pcs.

| Ref. No. | Beam characteristic | Beam angle (°) EDC_47 | Optical efficiency |
|----------|---------------------|-----------------------|--------------------|
|----------|---------------------|-----------------------|--------------------|

Reflector D75 - H = 40

| | | | |
|--------|------------|----|----|
| 557152 | narrow | 16 | 85 |
| 557153 | medium | 14 | 85 |
| 557154 | wide | 34 | 85 |
| 562157 | extra wide | 62 | 85 |

Reflector D90 - H = 50

| | | | |
|--------|------------|----|----|
| 557359 | narrow | 18 | 85 |
| 557360 | medium | 24 | 85 |
| 557361 | wide | 34 | 85 |
| 563446 | extra wide | 46 | 90 |

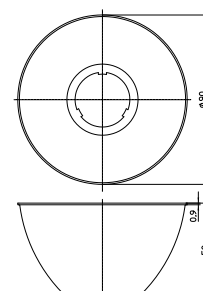
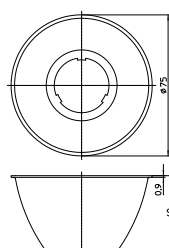
It's possible to use all the reflectors on the same holder.



D75



D90



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ReadyLine COB-E 230 V Gen. 3 – For Direct Connection to Mains Voltage

Selection of automatic cut-outs

| Type | Automatic cut-out type and possible no. of VS modules / (pcs.) | | | | | |
|----------------------|--|--------|--------|--------|--------|--------|
| | B 10 A | B 16 A | B 20 A | C 10 A | C 16 A | C 20 A |
| EDC_47C_4W_xxx_230V | 588 | 941 | 1176 | 588 | 941 | 1176 |
| EDC_47C_6W_xxx_230V | 384 | 615 | 769 | 384 | 615 | 769 |
| EDC_47C_8W_xxx_230V | 285 | 457 | 571 | 285 | 457 | 571 |
| EDC_47C_10W_xxx_230V | 232 | 372 | 465 | 232 | 372 | 465 |

Logistics information

| Type | Packaging dimensions LxVxH (mm) | Packaging unit/ minimum order quantity | | | Weight per pack. unit g |
|---------------------|---------------------------------|--|-----------|-----------|-------------------------|
| | | pcs. | pcs./tray | trays/box | |
| EDC_47C_xW_xxx_230V | 225x215x250 | 180 | 9 | 20 | 2,100 |
| Holder for EDC_47 | 390x190x105 | 200 | – | – | 1,400 |
| Tape for EDC_47 | – | 100 | – | – | – |
| Reflector EVO 75 | 118x118x160 | 18 | – | – | 360 |
| Reflector EVO 90 | 118x118x160 | 18 | – | – | 540 |
| Reflector PLUS | 370x290x35 | 30 | – | – | 700 |
| Lens Evolve | 370x290x35 | 30 | – | – | 850 |

EPREL Information

| Light Source | | |
|-----------------|----------------|----------|
| Type | EPREL Reg. No. | EE Class |
| EDC_47C_4W_927 | 1122128 | G |
| EDC_47C_4W_930 | 1122752 | G |
| EDC_47C_4W_940 | 1123037 | F |
| EDC_47C_6W_927 | 1123130 | G |
| EDC_47C_6W_930 | 1123141 | G |
| EDC_47C_8W_927 | 1125386 | G |
| EDC_47C_8W_930 | 1125499 | F |
| EDC_47C_8W_940 | 1125848 | F |
| EDC_47C_10W_927 | 1125947 | G |
| EDC_47C_10W_930 | 1126025 | F |
| EDC_47C_10W_940 | 1126101 | F |

Production Code

| EDC | XX | X | XXW | X | XX | XXX |
|------|-----|---|-----|------|----|-----|
| 47 C | 4W | 8 | 27 | 230V | | |
| 57 C | 6W | 9 | 30 | | | |
| | 8W | | 35 | | | |
| | 10W | | 40 | | | |
| | 12W | | 50 | | | |
| | 15W | | 57 | | | |

Type Shape CRI Mains voltage
Dimension Power Colour

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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. 572150) and the holders (Ref. No. 571946, 571947, 571948)
- 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 mm²Strip 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 countersunk 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 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

Usage and maintenance of reflectors EVO

If necessary clean reflectors with mild soap, water and soft cloth. Never use any commercial cleaning solvents on reflectors, like alcohol. Please handle or install reflectors with wearing gloves, skin oils may damage reflector or its optical characteristic.

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