

LED MODULES ReadyLine COB-E

BUILT-IN MODULE
230 V



LED MODULES ReadyLine COB-E

EDC_47C_xxW_xxx_230V

EDC_57C_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
EDC_57C: Ø 57 x 7.6 mm / Ø 18 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

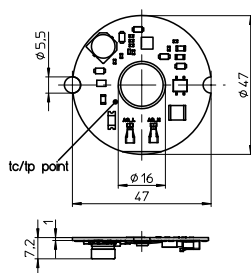
Electrical Characteristics

at $t_p = 55\text{ °C}$

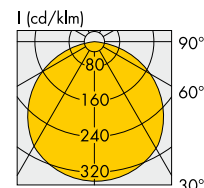
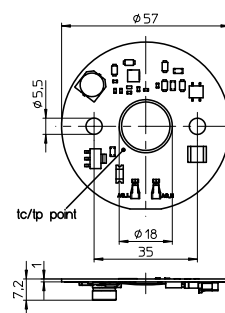
Type	Typ. supply voltage AC V	Operation frequency Hz	Inrush current mA	Typ. power consumption at 230 V (W)	Total harmonic distortion (THD) %	SVM	Pstlm	Percent flicker %
EDC_47C_4W_xxx_230V	230	50/60	20	4	≤30	<0,1	<0,4	<5
EDC_47C_6W_xxx_230V	230	50/60	30	6	≤30	<0,1	<0,4	<5
EDC_47C_8W_xxx_230V	230	50/60	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_57C_8W_xxx_230V	230	50/60	40	8	≤30	<0,1	<0,4	<5
EDC_57C_10W_xxx_230V	230	50/60	50	10	≤30	<0,1	<0,4	<5
EDC_57C_12W_xxx_230V	230	50/60	60	12	≤30	<0,1	<0,4	<5
EDC_57C_15W_xxx_230V	230	50/60	75	15	≤30	<0,1	<0,4	<5



EDC_47C



EDC_57C



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
EDC_57C_8W_xxx_230V	8	220	240	-30	+85	115	-40	+85
EDC_57C_10W_xxx_230V	10	220	240	-30	+85	115	-40	+85
EDC_57C_12W_xxx_230V	12	220	240	-30	+85	115	-40	+85
EDC_57C_15W_xxx_230V	15	220	240	-30	+85	115	-40	+85

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.
	EDC_47C				EDC_57C			
L90/B10	20,000	20,000	20,000	15,000	20,000	20,000	20,000	10,000
L80/B10	40,000	35,000	30,000	25,000	40,000	35,000	30,000	25,000
L70/B10	50,000	50,000	45,000	45,000	50,000	50,000	45,000	45,000

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

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

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
EDC_57C									
8	EDC_57C_8W_827_230V	on request	warm white	2700	835	104	795	99	80
	EDC_57C_8W_830_230V	on request	warm white	3000	905	113	865	108	80
	EDC_57C_8W_840_230V	on request	neutral white	4000	940	118	900	113	80
	EDC_57C_8W_927_230V	on request	warm white	2700	715	89	685	86	90
	EDC_57C_8W_930_230V	on request	warm white	3000	780	98	745	93	90
	EDC_57C_8W_940_230V	on request	neutral white	4000	810	101	775	97	90
10	EDC_57C_10W_827_230V	on request	warm white	2700	1040	104	995	100	80
	EDC_57C_10W_830_230V	on request	warm white	3000	1135	114	1085	109	80
	EDC_57C_10W_840_230V	on request	neutral white	4000	1180	118	1125	113	80
	EDC_57C_10W_927_230V	571937	warm white	2700	895	90	855	86	90
	EDC_57C_10W_930_230V	571938	warm white	3000	975	98	930	93	90
	EDC_57C_10W_940_230V	571939	neutral white	4000	1015	102	970	97	90
12	EDC_57C_12W_827_230V	on request	warm white	2700	1195	100	1140	95	80
	EDC_57C_12W_830_230V	on request	warm white	3000	1300	108	1240	103	80
	EDC_57C_12W_840_230V	on request	neutral white	4000	1350	113	1290	108	80
	EDC_57C_12W_927_230V	571940	warm white	2700	1025	85	980	82	90
	EDC_57C_12W_930_230V	571941	warm white	3000	1115	93	1065	89	90
	EDC_57C_12W_940_230V	571942	neutral white	4000	1160	97	1110	93	90
15	EDC_57C_15W_827_230V	on request	warm white	2700	1535	102	1470	98	80
	EDC_57C_15W_830_230V	on request	warm white	3000	1670	111	1595	106	80
	EDC_57C_15W_840_230V	on request	neutral white	4000	1740	116	1660	111	80
	EDC_57C_15W_927_230V	571943	warm white	2700	1320	88	1260	84	90
	EDC_57C_15W_930_230V	571944	warm white	3000	1440	96	1375	92	90
	EDC_57C_15W_940_230V	571945	neutral white	4000	1495	100	1425	95	90

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

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

EDC_47C versions on request: minimum order quantity: 540 pcs. - EDC_57C versions on request: minimum order quantity: 500 pcs.

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Accessories for LED Modules ReadyLine COB

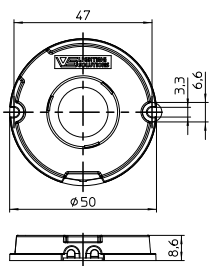


Holders

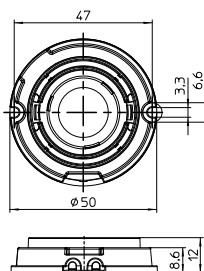
Material: PBT V2, white

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
EDC_57C_Holder	571949	60x8.6	200
EDC_57C_Holder_EVO	571950	60x10.6	200
LES protection cover	606378	23.5x0.75	200

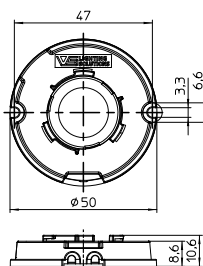
EDC_47C_Holder



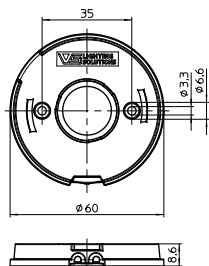
EDC_47C_Holder_PLUS/EVOLVE



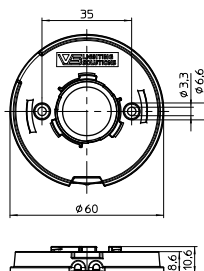
EDC_47C_Holder_EVO



EDC_57C_Holder



EDC_57C_Holder_EVO

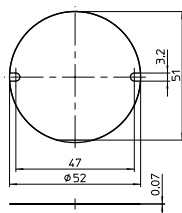


Thermal pads

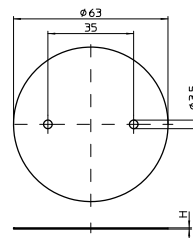
Thermal conductivity : 2 W/mK

Type	Ref. No.	Dimensions (ØxH) mm	Pack. unit pcs.	No. of adhesive side(s)
47C	572150	52 x 0,07	100	1
57C	559883	63 x 0,5	100	2
57C	572316	63 x 0,07	100	1

47C



57C

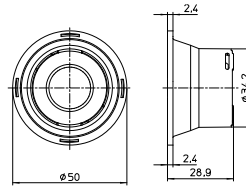


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Reflectors PLUS

Technical notes

for click in fixation on Holder 571947
 Diameter: 50 mm
 Material: PC
 Operating temperature: -25 to 90 °C
 Storage temperature: -40 to 90 °C

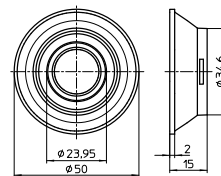


Ref. No.	For LED modules	Beam angle (°)	Cover	Optical efficiency (%)	Weight g
603688	EDC_47C	26	Diffus	65	10
604920	EDC_47C	36	Diffus	70	10

Lenses Evolve 50

Technical notes

For click-in fixation on holders Easy
 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 made of aluminium with bayonet fixation
 Surface: anodised
 Weight: 17/27 g (D75/D90)
 Packaging unit: 18 pcs.

Ref. No.	Beam characteristic	Beam angle (°) EDC_47	Beam angle (°) EDC_57	Optical efficiency
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Reflector D75 – H = 40

557152	narrow	16	18	85
557153	medium	14	20	85
557154	wide	34	38	85
562157	extra wide	62	65	85

Reflector D90 – H = 50

557359	narrow	18	18	85
557360	medium	24	26	85
557361	wide	34	38	85
563446	extra wide	46	52	90

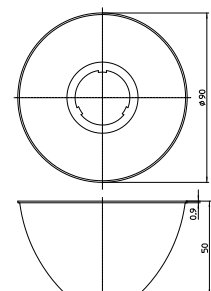
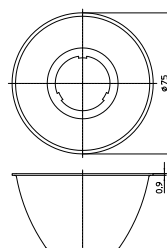
It's possible to use all the reflectors on the same holder.



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
EDC_57C - 8W_xxx_230V	285	457	571	285	457	571
EDC_57C - 10W_xxx_230V	232	372	465	232	372	465
EDC_57C - 12W_xxx_230V	192	307	384	192	307	384
EDC_57C - 15W_xxx_230V	153	246	307	153	246	307

Production Code

EDC		XX	X	XXW	X	XX	XXX			
Type	47 C	Shape	57 C	4W	Power	8	Colour	27	Mains voltage	230V
	6W			9		30				
				8W				35		
				10W				40		
				12W				50		
				15W				57		

Logistics information

Type	Packaging dimensions LxWxH (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
EDC_57C_xW_xxx_230V	225x215x250	100	5	20	1,900
Holder for EDC_47	390x190x105	200	-	-	1,400
Holder for EDC_57	390x190x105	200	-	-	1,650
Tape for EDC_47	-	100	-	-	-
Tape for EDC_57	-	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_6W_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

Light source		
Type	EPREL Reg. No.	EE Class
EDC_57C_10W_927	1146097	F
EDC_57C_10W_930	1146128	F
EDC_57C_10W_940	1146139	F
EDC_57C_12W_927	1146154	G
EDC_57C_12W_930	1146175	F
EDC_57C_12W_940	1146198	F
EDC_57C_15W_927	1146331	F
EDC_57C_15W_930	1146405	F
EDC_57C_15W_940	1146472	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. 572150, 559883, 572316) and the holders (Ref. No. 571946, 571947, 571948, 571949, 571950)
- 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 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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