

# LED FlatPanel ComfortLine

ULTRA FLAT LIGHT PANEL



## LED FlatPanel ComfortLine

### LED Recessed Mounted FlatPanels

The use of state-of-the-art LED technology in conventional office and hall illumination provides a lot of advantages like an optimal light distribution and an increased lifetime all at an affordable price. LED FlatPanels are fully compatible with existing conventional lighting infrastructure, and are the perfect choice for both new and replacement markets.

#### ■ FlatPanel

- With external connected LED driver or without operating device
- High efficiency of up to 141 lm/W
- Flat design for easy installation in low false ceiling
- High colour rendering index CRI:  $\geq 80$



### LED FlatPanel ComfortLine

- **LONG SERVICE LIFE TIME: 60,000 h (L80/B10)**
- **100% INSTANT LIGHT**
- **WITH OR WITHOUT LED DRIVER**
- **STANDARD, IP54, UGR<19 AND TP $\alpha$  VERSION**
- **NARROW COLOUR TOLERANCES:  
3 STEP MacAdam**
- **5 YEARS GUARANTEE**
- **ENEC AND DEKRA APPROVED**



## LED FlatPanel ComfortLine

### Built-in LED light panel

Dimensions:

- FPC-6060: 595x595x12.2 mm
- FPC-6262: 620x620x12.2 mm

Frame colour: white (RAL 9003)

Light diffuser material: PMMA / PC (TPa)

Degree of protection FlatPanel: IP40/IP54

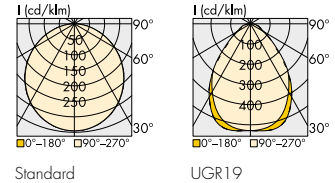
Degree of protection LED driver: IP20

Impact rating: IK03/IK06 (IP54)

Colour accuracy initially: typ. 3 SDCM

Incl. safety rope

Minimum order quantity: 48 pcs.



### With external LED driver 186894

For mains voltage: 220–240 V, 50–60 Hz

Flicker: < 5%

Power factor: > 0.95

THD (at 230 V): < 20%

### Applied standards

- EN 60598-1:2015
- EN 60598-2-2:1989
- EN 60598-2-2:2012
- EN 62471:2008
- EN 62493:2010
- EN 55015:2013
- EN 61000-3-2:2014
- EN 61000-3-3:2013
- EN 61547:2009
- IEC TR 62778:2014 (RG1)

### Maximum ratings

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

Values are only for the FlatPanel.

Type	Max. operating current mA	Typ. voltage DC V	Allowed operating temperature = $t_a$		Allowed storage temperature = $t_a$	
			min. °C	max. °C	min. °C	max. °C
All types	1200	25–30	–10	+40	–20	+60

### Operating life

Lumen maintenance	$t_a = 25\text{ °C}$ hrs.	$t_a = 40\text{ °C}$ hrs.
L70/B10	65,000	55,000
L80/B10	60,000	50,000

### Lumen per operating current (without LED driver)

Example for FPC-6262 at 4000 K

Operating current (mA)	Standard			UGR<19		
	W	lm	lm/W	W	lm	lm/W
1200	32	4320	135	32	4200	131
1050	29	3950	136	29	3850	133
900	26	3600	138	26	3480	134
800	24	3400	142	24	3250	135
700	22	3200	145	22	3000	136

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

## LED FlatPanel ComfortLine

### Standard version – with external connected LED driver

Type	Ref. No.		Colour	Correlated colour temp. K	Typ. power consumption* W	Luminous flux* and efficiency				Typ. UGR 4H-8H	Beam angle °	Typ. CRI R <sub>a</sub>	Energy efficiency
	With LED driver (IP20)	IP40				IP54	typ. lm	lm/W	max. lm				
<b>595x595 mm</b>													
FPC-6060-36-830-/IP54	<b>569234</b>	<b>on request</b>	warm white	3000	36	4200	117	4400	122	22	120	80	A+
FPC-6060-36-840-/IP54	<b>569235</b>	<b>on request</b>	neutral white	4000	36	4320	120	4520	126	22	120	80	A+
<b>620x620 mm</b>													
FPC-6262-36-830-/IP54	<b>569238</b>	<b>on request</b>	warm white	3000	36	4200	117	4400	122	22	120	80	A+
FPC-6262-36-840-/IP54	<b>569239</b>	<b>on request</b>	neutral white	4000	36	4320	120	4520	126	22	120	80	A+

\* Production tolerance of luminous flux and power consumption: ±10% | IP54 version on request; higher minimum order quantity.

### UGR19 version – with external connected LED driver

Low glare, especially suitable for office illumination

Type	Ref. No.		Colour	Correlated colour temp. K	Typ. power consumption* W	Luminous flux* and efficiency				Typ. UGR 4H-8H	Beam angle °	Typ. CRI R <sub>a</sub>	Energy efficiency
	With LED driver (IP20)	IP40				TPa**	typ. lm	lm/W	max. lm				
<b>595x595 mm</b>													
FPC-6060-36-830-U	<b>569236</b>	–	warm white	3000	36	4100	114	4300	119	19	90	80	A+
FPC-6060-36-840-U-/TPa	<b>569237</b>	<b>569972</b>	neutral white	4000	36	4200	117	4400	122	19	90	80	A+
<b>620x620 mm</b>													
FPC-6262-36-830-U	<b>569240</b>	–	warm white	3000	36	4100	114	4300	119	19	90	80	A+
FPC-6262-36-840-U	<b>569241</b>	–	neutral white	4000	36	4200	117	4400	122	19	90	80	A+

\* Production tolerance of luminous flux and power consumption: ±10% | \*\* Material TPa approved; BS 2782-0: 2004 (TÜV)/FlatPanel carries CE

### Standard version – without LED driver

Type	Ref. No.		Colour	Correlated colour temp. K	Typ. power consumption* W	Luminous flux* and efficiency at 1200 mA				Typ. UGR 4H-8H	Beam angle °	Typ. CRI R <sub>a</sub>	Energy efficiency
	Without LED driver	IP40				IP54	typ. lm	lm/W	max. lm				
<b>595x595 mm</b>													
FPC-6060-36-830-ND-/IP54	<b>570059</b>	<b>on requ.</b>	warm white	3000	32	4200	131	4400	138	22	120	80	A+
FPC-6060-36-840-ND-/IP54	<b>570060</b>	<b>on requ.</b>	neutral white	4000	32	4320	135	4520	141	22	120	80	A+
<b>620x620 mm</b>													
FPC-6262-36-830-ND-/IP54	<b>570063</b>	<b>on requ.</b>	warm white	3000	32	4200	131	4400	138	22	120	80	A+
FPC-6262-36-840-ND-/IP54	<b>570064</b>	<b>on requ.</b>	neutral white	4000	32	4320	135	4520	141	22	120	80	A+

\* Production tolerance of luminous flux and power consumption: ±10% | IP54 version on request; higher minimum order quantity.

### UGR19 version – without LED driver

Low glare, especially suitable for office illumination

Type	Ref. No.		Colour	Correlated colour temp. [K]	Typ. power consumption* W	Luminous flux* and efficiency at 1200 mA				Typ. UGR 4H-8H	Beam angle °	Typ. CRI R <sub>a</sub>	Energy efficiency
	Without LED driver	IP40				TPa**	typ. lm	lm/W	max. lm				
<b>595x595 mm</b>													
FPC-6060-36-830-U-ND	<b>570061</b>	–	warm white	3000	32	4100	128	4300	134	19	90	80	A+
FPC-6060-36-840-U-/TPa-ND	<b>570062</b>	<b>on requ.</b>	neutral white	4000	32	4200	131	4400	138	19	90	80	A+
<b>620x620 mm</b>													
FPC-6262-36-830-U-ND	<b>570065</b>	–	warm white	3000	32	4100	128	4300	134	19	90	80	A+
FPC-6262-36-840-U-ND	<b>570066</b>	–	neutral white	4000	32	4200	131	4400	138	19	90	80	A+

\* Production tolerance of luminous flux and power consumption: ±10% | \*\* Material TPa approved; BS 2782-0: 2004 (TÜV)/FlatPanel carries CE

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## LED constant-current drivers

You will find more information about our LED drivers on our website: [www.vossloh-schwabe.com](http://www.vossloh-schwabe.com)

Ref. No.	Current adjustment/ Dimming	Output current mA	Output voltage DC V	Max. output W	Casing	Dimensions LxWxH (mm)	Max. service lifetime/casing temperature hrs.	$t_c$ (°C)
<b>186921</b>	on/off	1050	21–42	44	K27	105x68x32	50,000	75
<b>186848*</b>	Terminal selection	800–900	25–43	39	K33.1	97x43x30	100,000	65
<b>186849*</b>	Terminal selection	950–1050	25–43	45	K33.1	97x43x30	100,000	65
<b>186650*</b>	Terminal selection	150–900	25–43	39	K33.1	97x43x30	100,000	70
<b>186664*</b>	Terminal selection	150–1050	25–43	45	K33.1	97x43x30	100,000	70
<b>186841**</b>	DIP switch	800–1050	25–42	38	K25	97x43x29,5	50,000	70
<b>186763</b>	DALI	300–1050	10–36	38	K33.3	146.5x43.2x30.1	100,000	75

\* Cord grip 186690 for protection class II required | \*\* Cord grip 186845 for protection class II required

## LED FlatPanel ComfortLine – Accessories

### Assembly kit for suspension version

Consisting of

- 4 fixation brackets, incl. screws
- 6 screws M3, incl. pegs
- 4 steel cables with snap hooks
- 2 steel cables for suspension with adjustment element

Minimum order quantity: 1 pcs.

**Ref. No.: 565559**

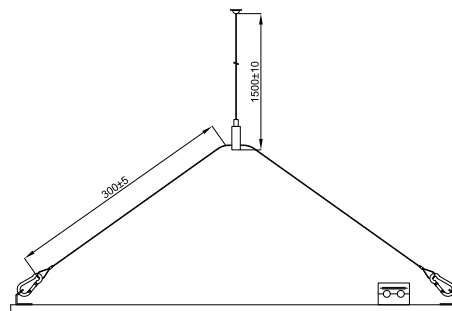


### Mounting clips

For ceiling with thickness: max. 20 mm

**Ref. No.: 567818** 4 steel clips

**Ref. No.: 567819** 6 steel clips



### Surface mounting frames

Material: aluminium

Colour: white (RAL 9003)

Magnetic catch

Minimum order quantity: 5 pcs.

Type: 6060

**Ref. No.: 567820** For LED FlatPanel 595x595x60 mm

Type: 6262

**Ref. No.: 567821** For LED FlatPanel 620x620x60 mm

Type: 12030

**Ref. No.: 567822** For LED FlatPanel 1195x295x56 mm



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## LED FlatPanel ComfortLine

### Logistic details

Type	Packaging white			Packaging brown			Minimum order quantity / Pieces per euro pallet
	Dimensions LxWxH (mm)	Pack. unit pcs.	Weight kg	Dimensions LxWxH (mm)	Pack. unit pcs.	Weight kg	
FPC-6060-xx	625x38x680	1	2.8	695x165x645	4	14.8	48
FPC-6262-xx	650x38x705	1	3.2	720x165x670	4	16.2	48
Surface mounting frame for FPC-6060-xx	610x62x610	1	2.2	625x335x625	5	12.0	5
Surface mounting frame for FPC-6262-xx	640x62x640	1	2.4	650x335x650	5	12.5	5

### Comparison with Compact Fluorescent Lamps

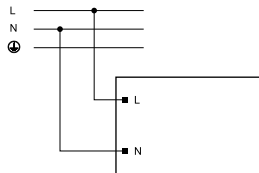


Type	LED	Fluorescent
Service lifetime	60,000 hrs.	10,000 hrs.
FlatPanel ComfortLine	36 W	4 x 18 W or 4 x 14 W

### Safety and assembly information for LED drivers

#### Electrical installation

- Connection terminals: Push-in terminals for rigid or flexible conductors with a section of 0.5–1.5 mm<sup>2</sup>
- Stripped length: 8.5–10 mm
- Wiring: The mains conductor within the luminaire must be kept short (to reduce the induction of interference).  
Mains and lamp conductors must be kept separate and if possible should not be laid in parallel to one another.  
Max. secondary side lead length: 0.8 m
- Polarity: Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- Through-wiring: Is not allowed.
- Parallel wiring: Parallel connection of LED loads is not allowed.
- Wiring diagram:



### Selection of automatic cut-outs for VS LED drivers

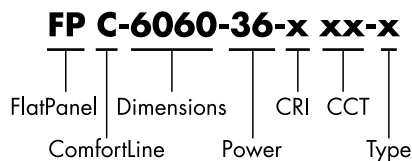
- Dimensioning automatic cut-outs  
High transient currents occur when an LED driver is switched on because the capacitors have to load. Ignition of LED modules occurs almost simultaneously. This also causes a simultaneous high demand for power. These high currents when the system is switched on put a strain on the automatic conductor cut-outs, which must be selected and dimensioned to suit.
- Release reaction  
The release reaction of the automatic conductor cut-outs comply with VDE 0641, part 11, for B, C characteristics. The values shown in the following tables are for guidance purposes only and are subject to system-dependent change.
- No. of LED drivers

The maximum number of VS LED drivers applies to cases where the devices are switched on simultaneously. Specifications apply to single-pole fuses. The number of permissible drivers must be reduced by 20% for multi-pole fuses. The considered circuit impedance equals 400 mΩ (approx. 20 m [2.5 mm<sup>2</sup>] of conductor from the power supply to the distributor and a further 15 m to the luminaire).

Type	Automatic cut-out type and possible no. of VS drivers					
Automatic cut-out type	B 10 A	B 13 A	B 16 A	C 10 A	C 13 A	C 16 A
FPC-xxxx-xxxxx	14	19	23	24	31	39

- To limit capacitive inrush currents the current carrying capacity of each circuit breaker (fuse) can be increased by a factor of 2.5 with the help of our ESB (Ref. No.: 149820, 149821, 149822) inrush current limiters.

### Product code description



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## Safety and Installation Instructions

### General safety and installation Instructions for luminaires

The following instructions must be observed. Non-observance can result in personal injury and damage to property or can damage both luminaires and control gear. In such cases, the manufacturer's warranty as well as liability will be invalidated.

#### General Instructions

- Please read these instructions prior to installation/commissioning and keep them safe for future use.
- Any improper use or modification will invalidate the manufacturer's warranty and liability as well as any warranty claims.
- The luminaire contains integrated and non-exchangeable LED light sources. The light source of this luminaire cannot be replaced. When the light source has reached the end of its service life, the entire luminaire must be replaced.
- Care must be taken to ensure the luminaire is operated only using the supplied Vossloh-Schwabe control gear and accessories or using an alternative brand of approved control gear.
- If the luminaire is marked with SELV, only control gear with SELV characteristics may be used.
- Children must be prevented from playing with or near the luminaire.

#### Installation and operating instructions

- Installation of this luminaire may be undertaken only by authorised and suitably trained staff in accordance with any country-specific regulations.
- Installation must be carried out only after disconnecting the device from mains voltage, i.e. in a voltage-free state.
- Depending on the site of operation, the degree of protection (IPxx) will have to be observed during installation.
- Please ensure that the correct supply voltage is applied by checking it against the voltage requirements of the luminaire and the driver.
- For the purpose of commissioning, please ensure the correct polarity of the connecting leads. Incorrect polarity can destroy the modules.
- For trouble-free operation, it is important to ensure that the permissible ambient temperature range ( $t_a$ ) as stipulated in the datasheet is not exceeded. Exposure to sunlight can increase the ambient temperature.
- Only ever operate the luminaire with all protective covers in place.
- Given functional problems, please contact your Vossloh-Schwabe representative. Should the power supply cable be damaged, please scrap the luminaire and/or contact your VS representative.
- On contact with moisture or condensation, any resulting corrosive damage will not be recognised as a product flaw or manufacturer's defect.
- Connecting luminaires (LED modules) to supply units that are already connected to the mains can result in long-term damage. Secondary switching is not permissible.
- Touchable luminaire parts can reach high temperatures (risk of burning/injury.)
- Highly flammable materials (e.g. cladding or insulation material) must be kept away from the luminaire.


- Please ensure protective ESD (electrostatic discharge) measures are taken when handling and installing the luminaire – see VS "ESD Protection" application notes.
- Measurement tolerances:
  - Luminous flux:  $\pm 10\%$
  - Power consumption / voltage:  $\pm 10\%$
  - Colour: max. 6 SDCM
- For square FlatPanels, light input is effected via two sides.

#### Cleaning instructions


- Depending on the conditions on site, the luminaire must be cleaned on a regular basis.
- Never use any flammable, abrasive, harsh or corrosive cleaning liquids.
- Prior to cleaning the luminaire, please ensure it is disconnected from the mains and is given time to cool down.
- Once it has cooled down, the luminaire can be cleaned with a damp cloth.
- Let the luminaire dry fully before switching it back on.


Answers to technical questions can be found on our website at [www.vossloh-schwabe.com](http://www.vossloh-schwabe.com) or ask your Vossloh-Schwabe representative.

#### Safety symbols


 Specifies the minimum clearance to flammable materials in the direction of radiation.

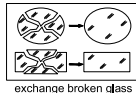
 Indoor operation

 Please ensure that the way the luminaire is positioned means there is no reason to expect anyone could look into it for a longer period of time with less clearance than stated in the datasheet.

 Caution: risk of electric shock.

 **ESD Schutzmaßnahmen einhalten / Comply with ESD protection measures** Caution: components with a risk of electrostatic charge.

 Luminaire/voltage supply unit must not be covered with any thermally insulating materials or similar.

 Any cover with damage must be replaced.  
exchange broken glass

#### 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.

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