

# CV 12 V



## EASYLINE 12 V C-L

**186621, 186622, 186623**

### Typical Applications

Built-in in luminaires for 12 V systems

- Hospitality lighting
- Residential lighting
- Furniture lighting
- Signage lighting

### EasyLine 12 V C-L

- **VERY LOW RIPPLE CURRENT: < 5%**
- **WITH INTEGRATED CORD GRIP FOR INDEPENDENT OPERATION**
- **SELV**
- **SUITABLE FOR BUILT-IN INTO FURNITURE**
- **LONG SERVICE LIFE: UP TO 50,000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**



## EasyLine 12 V C-L

### Product features

- Linear casing shape
- For use in applications with medium and high capacity range from 60 to 100 W

### Electrical features

- Mains voltage: 220–240 V  $\pm 10\%$
- Mains frequency: 50–60 Hz
- Screw terminals: 0.75–1.5 mm<sup>2</sup>
- Power factor at full load:  $> 0.9$  C

### Safety features

- Protection against transient main peaks
- Electronic short-circuit protection
- Overload protection: reversible
- Protection against "no load" operation
- Degree of protection: IP20
- Protection class II
- SELV

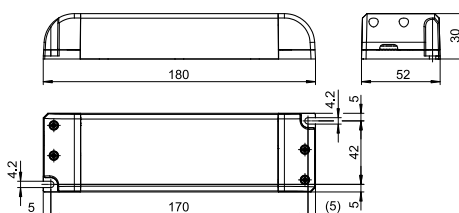
### Packaging units

Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
186621	20	100	305
186622	20	100	350
186623	20	70	400



### Dimensions

- Casing: K55.1
- Ref. No.: 186621, 186622
- Length: 180 mm
- Width: 52 mm
- Height: 30 mm

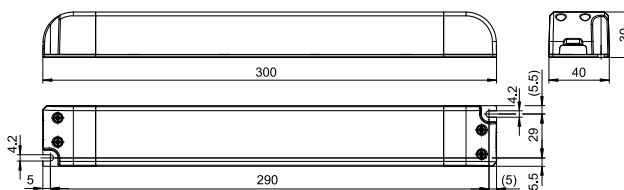


### Applied standards

- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 61000-3-2
- EN 62384
- EN 55015



- Casing: K60
- Ref. No.: 186623
- Length: 300 mm
- Width: 40 mm
- Height: 30 mm



### Product guarantee

- 5 years for operation at recommended operation temperature (see table for expected service life time on the next page)
- 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.

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

# LED Drivers – EasyLine 12 V C-L

## Electrical characteristics

Max. output W	Type	Ref. No.	Voltage 50–60 Hz V	Mains current mA	Inrush current A / $\mu$ s	Current output DC mA ( $\pm$ 5%)	Voltage output V ( $\pm$ 5%)	THD at full load % [230 V]	Efficiency at full load % [230 V]	Ripple 100 Hz %
60	EDXe 160/12.054	<b>186621</b>	220–240	320–285	38 / 214	0–5000	12	< 5	> 87	$\leq$ 3
75	EDXe 175/12.055	<b>186622</b>	220–240	390–350	35 / 230	0–6250	12	< 6	> 88	$\leq$ 5
100	EDXe 1100/12.056	<b>186623</b>	220–240	530–485	37 / 220	0–8400	12	< 6	> 88	$\leq$ 1

## Maximum ratings

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

Ref. No.	Ambient temperature range		Operation humidity range		Storage temperature range		Storage humidity range		Max. operation temperature at $t_c$ point °C	Degree of protection
	°C min.	°C max.	% min.	% max.	°C min.	°C max.	% min.	% max.		
186621	-15	+45	5	60	-40	+85	5	95	+90	IP20
186622									+85	
186623									+90	

## Expected service life time

at operation temperatures at  $t_c$  point

Operation current	Ref. No. 186622		Ref. No. 186621, 186623	
	All	75 °C*	85 °C	80 °C*
hrs.	50,000	30,000	50,000	30,000

\* recommended operation temperature

## Product labels

**PRI**  
UN = 220...240V~  
In = 320, 285 mA  
fn = 50/60 Hz  
 $\lambda$  = 0,95  
■ N  
■ L

**Vossloh-Schwabe Deutschland GmbH**  
Hohe Steinert 8  
D38509 Lüdenscheid  
Electronic Converter for LED  
**Type EDXe 160/12.054**  
Ref.-No. 186621  
Made in PRC

EN 61347-1  
EN 61347-2:13  
EN 61000-3-2  
EN 62384  
EN 55015  
EN 61547

**SEC**  
U<sub>rated</sub> = 12 V~  
I<sub>rated</sub> = 5,00 A  
P<sub>rated</sub> = 60 W  
**IP 20**  
**SELV**

ta = -15...45°C  
tc = 90°C

**PRI**  
UN = 220...240V~  
In = 390, 350 mA  
fn = 50/60 Hz  
 $\lambda$  = 0,95  
■ N  
■ L

**Vossloh-Schwabe Deutschland GmbH**  
Hohe Steinert 8  
D38509 Lüdenscheid  
Electronic Converter for LED  
**Type EDXe 175/12.055**  
Ref.-No. 186622  
Made in PRC

EN 61347-1  
EN 61347-2:13  
EN 61000-3-2  
EN 62384  
EN 55015  
EN 61547

**SEC**  
U<sub>rated</sub> = 12 V~  
I<sub>rated</sub> = 6,25 A  
P<sub>rated</sub> = 75 W  
**IP 20**  
**SELV**

ta = -15...45°C  
tc = 85°C

**PRI**  
UN = 220...240V~  
In = 530...485 mA  
fn = 50/60 Hz  
 $\lambda$  = 0,95  
■ N  
■ L

**Vossloh-Schwabe Deutschland GmbH**  
Hohe Steinert 8  
D38509 Lüdenscheid  
Electronic Converter for LED  
**Type EDXe 1100/12.056**  
Ref.-No. 186623  
Made in PRC

EN 61347-1  
EN 61347-2:13  
EN 61000-3-2  
EN 62384  
EN 55015  
EN 61547

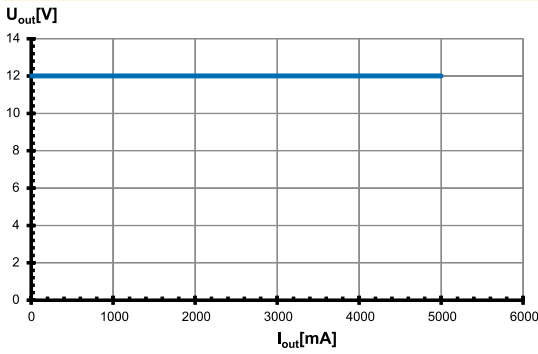
**SEC**  
U<sub>rated</sub> = 12 V~  
I<sub>rated</sub> = 8,40 A  
P<sub>rated</sub> = 100 W  
**IP 20**  
**SELV**

ta = -15...45°C  
tc = 90°C

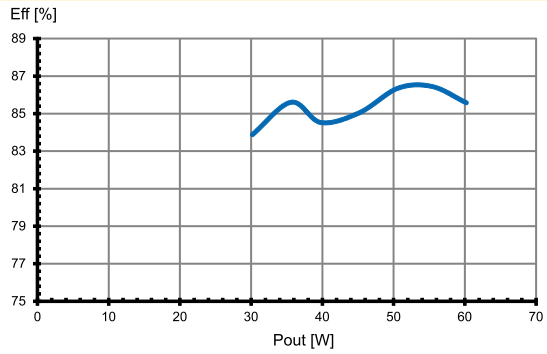
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## Typ. performance graphs for 186621 / Type EDXe 160/12.054

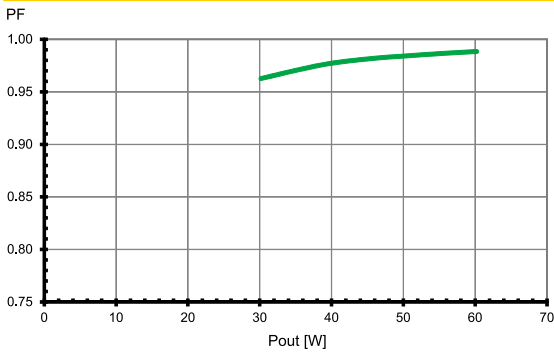
### Working area



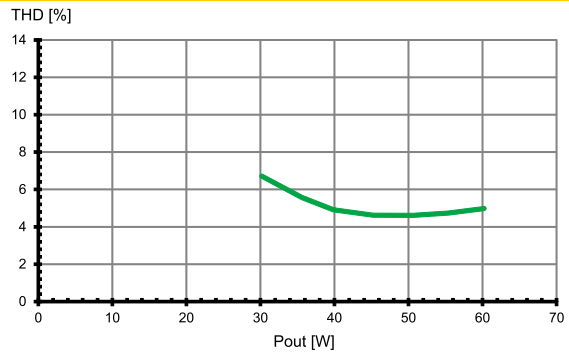
### Efficiency



### Power factor

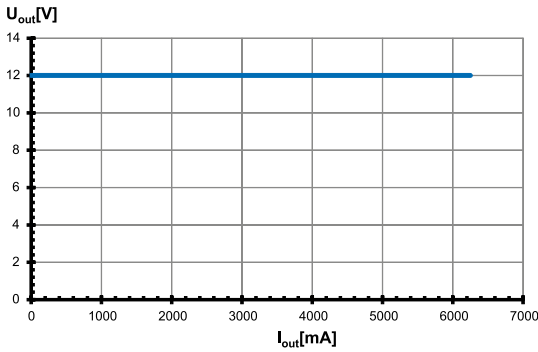


### Total harmonic factor (THD)

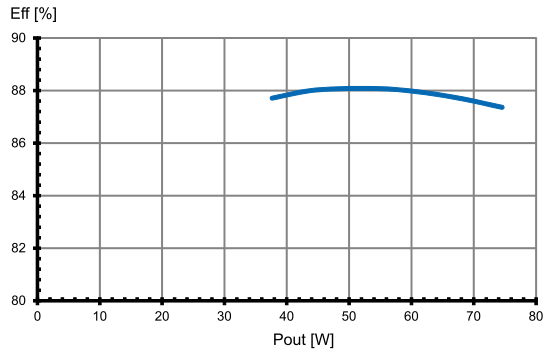


## Typ. performance graphs for 186622 / Type EDXe 175/12.055

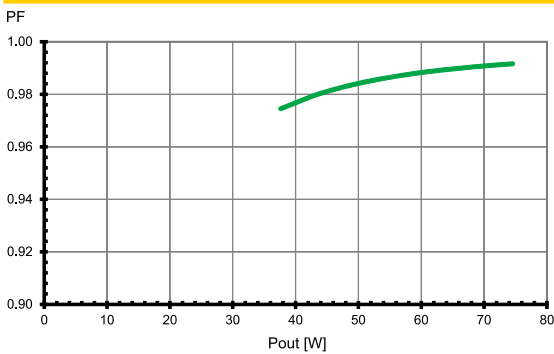
### Working area



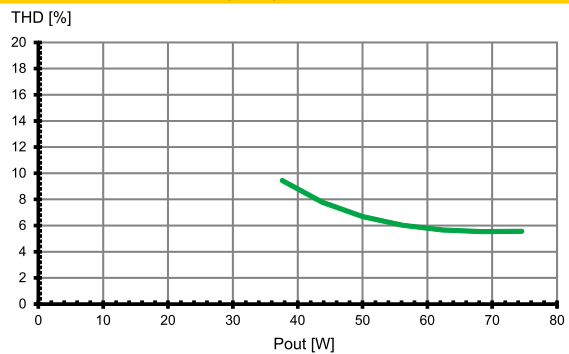
### Efficiency



### Power factor



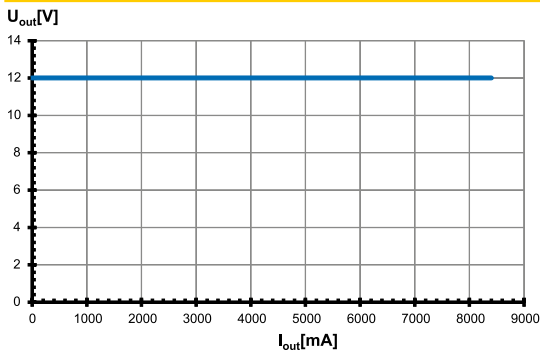
### Total harmonic factor (THD)



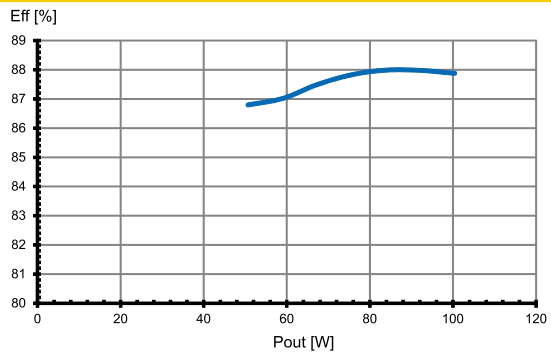
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## Typ. performance graphs for 186623 / Type EDXe 1100/12.056

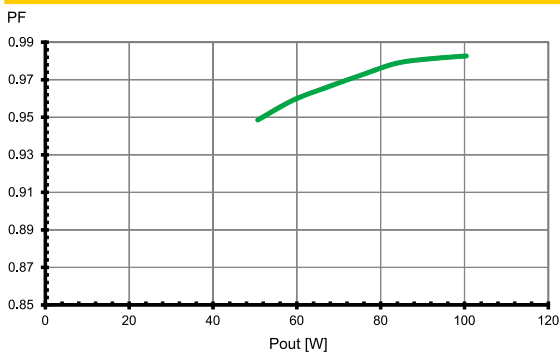
### Working area



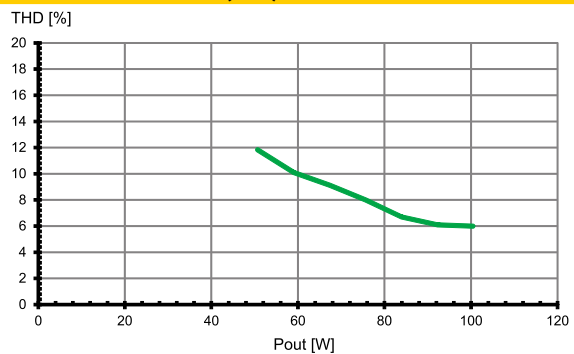
### Efficiency



### Power factor



### Total harmonic factor (THD)



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## Safety functions

- Transient mains peaks protection:  
Values are in compliance with EN 61547  
(interference immunity).  
Surges between L-N: up to 1 kV
- Short-circuit protection:  
The control gear is protected against  
permanent short-circuit with automatic restart  
function.
- Overload protection: The control gear only works in range of rated  
output power and voltage problemfree.  
Please check that the selected LED load is  
suitable (see Electrical Characteristics on  
this data sheet).
- No load operation: The control gear is protected against no load  
operation (open load).
- If any of the above mentioned safety functions will be triggered,  
disconnect the control gear from the power supply then find and  
eliminate the cause of the problem.

## Assembly and Safety Information

Installation must be carried out under observation of the relevant regulations and standards. Installation must be carried out in a voltage-free state (i.e. disconnection from the mains). The following advices must be observed; non-observance can result in the destruction of the LED drivers, fire and/or other hazards.

### Mandatory regulations

- DIN VDE 0100
- EN 60598-1

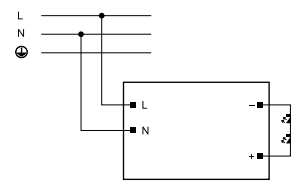
### Mechanical mounting

- Mounting position: Drivers are suitable for independent operation.
- Mounting location: Independent LED drivers do not need to be integrated into a casing.  
Installation in outdoor luminaires: degree of protection for luminaire with water protection rate  $\geq 4$  (e.g. IP54 required).
- Degree of protection: IP20
- Clearance: Min. 0.10 m from walls, ceilings and insulation
- Surface: Solid and plane surface for optimum heat dissipation required.
- Heat transfer: If the driver is destined for installation in a luminaire, sufficient heat transfer must be ensured between the driver and the luminaire casing.  
LED drivers should be mounted with the greatest possible clearance to heat sources. During operation, the temperature measure at the driver's  $t_c$  point must not exceed the specified maximum value.
- Fastening: Using M4 screws in the designated holes
- Tightening torque: 0.2 Nm

### Electrical installation

- Connection terminals: Screw terminals for rigid or flexible conductors with a section 0.75–1.5 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.
- Polarity: Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- Through-wiring: Is not allowed
- Secondary load: The sum of forward voltages of LED loads is within the tolerances which are mentioned in the Electrical Characteristics on the data sheet.

- 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	Ref. No.	Automatic cut-out type and possible no. of VS drivers pcs.					
Automatic cut-out type		B 10 A	B 13 A	B 16 A	C 10 A	C 13 A	C 16 A
EDXe 160/12.054	<b>186621</b>	10	13	16	16	26	26
EDXe 175/12.055	<b>186622</b>	10	13	16	16	21	26
EDXe 1100/12.056	<b>186623</b>	9	12	15	16	21	26

- 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.

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