

## EasyLine Simple Fix R-R3

### Product features

- Round casing shape

### Functions

- Different wattages available

### Electrical features

- Mains voltage: 220–240 V  $\pm 10\%$
- Mains frequency: 50–60 Hz
- Pre-assembled connection leads primary and secondary side:

Ref. No	Leads (mm <sup>2</sup> )	Length (mm)
All types	2x0,5	155 $\pm 5$

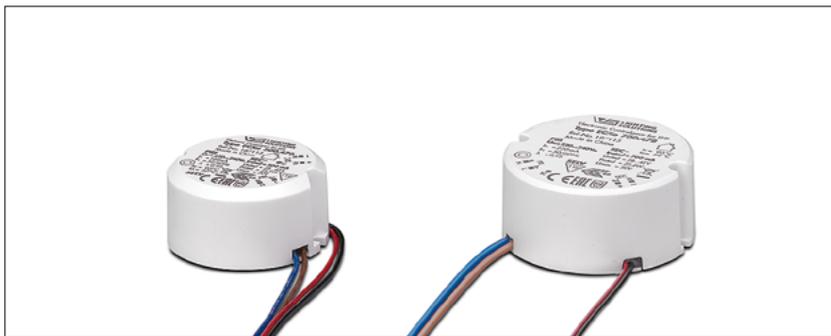
- Power factor at full load:  $> 0,55-0,90$
- Open circuit voltage ( $U_{max.}$ ): 50 V
- Secondary side switching of LED modules is not allowed.

### Safety features

- Protection against transient main peaks up to 1 kV (between L and N)
- Electronic short-circuit protection
- Overload protection
- Protection against "no load" operation
- Degree of protection: IP20
- Protection class II
- SELV

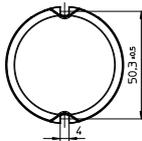
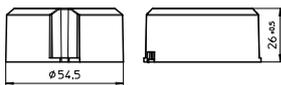
### Packaging units

Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
187113	60	45	95
187114	60	45	95
187115	60	30	155

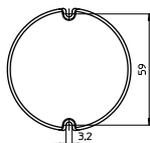


### Dimensions

- Casing: K89
- Ref. No.: 187113, 187114
- Diameter: 54,5 mm
- Height: 26 mm



- Casing: K90
- Ref. No.: 187115
- Diameter: 65 mm
- Height: 28 mm



### Applied standards

- EN 61000-3-2 Class C
- EN 61000-3-3
- EN 61000-4-5 –1000 V
- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 62384
- EN 55015



### 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 Simple Fix R-R3

## 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 DC (V)	Efficiency at full load % (230 V)	Ripple 100 Hz %
22	ECXe500.476	<b>187113</b>	220–240	144–91	25 / 180	500	28–43	> 87	< 3
25	ECXe600.477	<b>187114</b>	220–240	171–107	25 / 180	600	28–42	> 87	< 3
30	ECXe700.478	<b>187115</b>	220–240	198–124	20 / 150	700	28–42	> 89	< 3

## 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.		
187113, 187114, 187115	-20	+60	20	90	-25	+60	20	90	+90	IP20

## Expected service life time

at operation temperatures at  $t_c$  point

Operation current	Ref. No.		
	187113, 187114, 187115		
All	70 °C*	80 °C	90 °C
hrs.	100,000	60,000	30,000

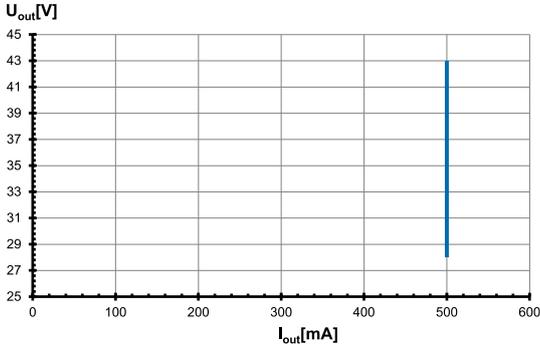
\* recommended operation temperature

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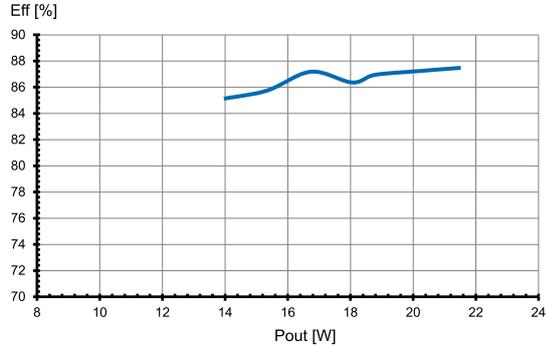
# LED Drivers – EasyLine Simple Fix R-R3

## Typ. performance graphs for 187113 / Type ECXe 500.476

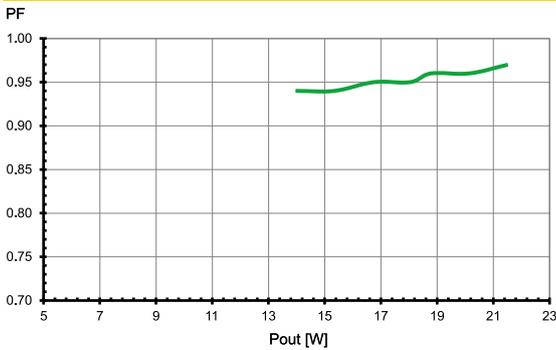
### Working area



### Efficiency

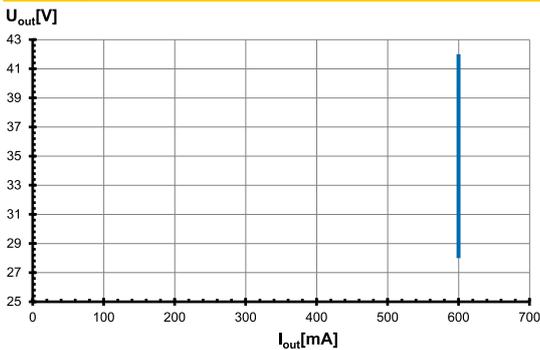


### Power factor

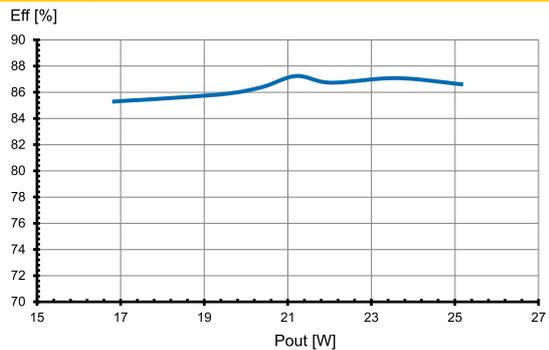


## Typ. performance graphs for 187114 / Type ECXe 600.477

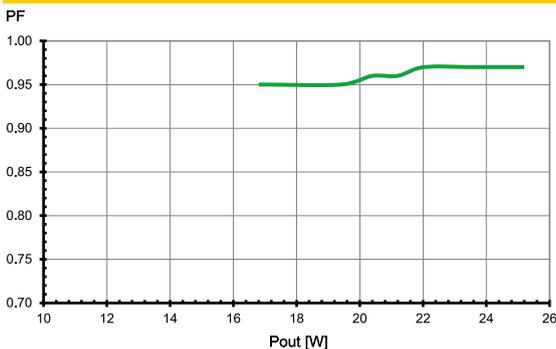
### Working area



### Efficiency



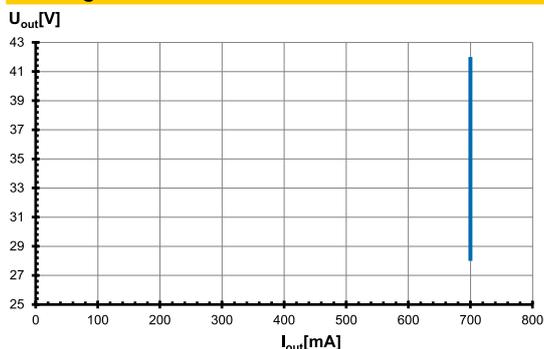
### Power factor



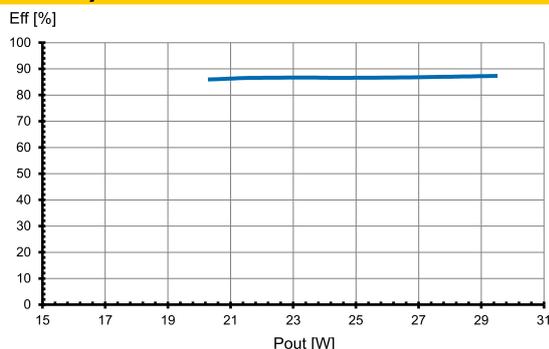
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## Typ. performance graphs for 187115 / Type ECXe 700.478

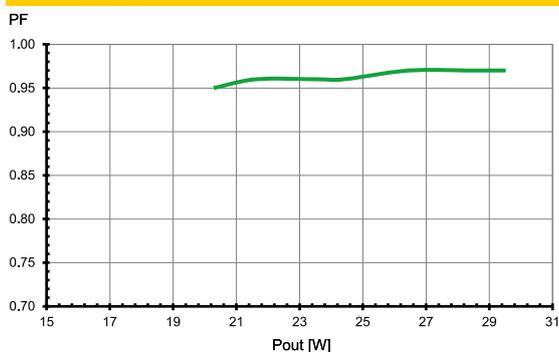
### Working area



### Efficiency



### Power factor



## Safety functions

- Transient mains peaks protection:
  - Values are in compliance with EN 61547 (interference immunity).
  - Surges between L-N: up to 1 kV
  - Surges between L/N-PE: up to 2 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 (< 60 V DC).
  - Please check before switch-on mains power supply that the selected LED load is suitable (see Electrical Characteristics on data sheet).
- 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.

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## 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: Independent application: Drivers are allowed to use for independent applications
- Mounting location: LED drivers are designed for integration into luminaires or comparable devices. 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

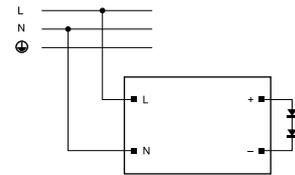
### Electrical installation

- Pre-assembled connection leads primary and secondary side:

Ref. No	Leads (mm <sup>2</sup> )	Length (mm)
All types	2x0,5	155 ±5

- 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
- Through-wiring: Is not allowed.

- Polarity: Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- 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.
- 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	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
ECXe 500.476	<b>187113</b>	24	30	36	30	37	45
ECXe 600.477	<b>187114</b>	24	30	36	30	37	45
ECXe 700.478	<b>187115</b>	16	20	24	20	25	30

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