

# CV EASYLINE 24 V L-S



## EASYLINE 24 V L-S

**187609, 187610, 187611, 187612, 187613**

### Typical Applications

Built-in in luminaires for 24 V systems

- Retail lighting
- Residential lighting
- Furniture lighting



### EasyLine 24 V L-S

- **VERY LOW RIPPLE CURRENT: < 2%**
- **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 24 V L-S

### Product features

- Slim and flat casing design
- For use in applications with medium and high capacity range of up to 30, 60, 100, 150 and 240 W

### Electrical features

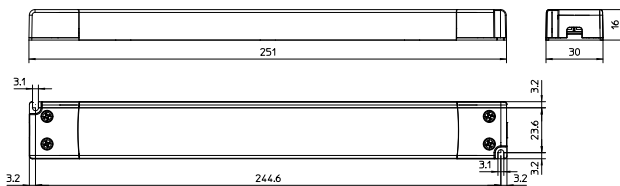
- Mains voltage: 220–240 V ±10%
- Mains frequency: 50–60 Hz
- Screw terminals:  
Input terminal: 0.75–1.5 mm<sup>2</sup> (All types)  
Output terminal: 0.5–1.5 mm<sup>2</sup> (30/60/100W)  
0.75–2.5 mm<sup>2</sup> (150/240W)
- Power factor at full load: > 0.95 C

### Safety features

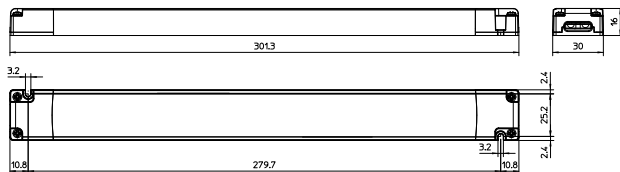
- Electronic short-circuit protection
- Overload protection: reversible
- Protection against "no load" operation
- Overtemperature protection
- Degree of protection: IP20
- Protection class II
- SELV
- SVM: < 0.4
- PstLM: < 1

### Dimensions

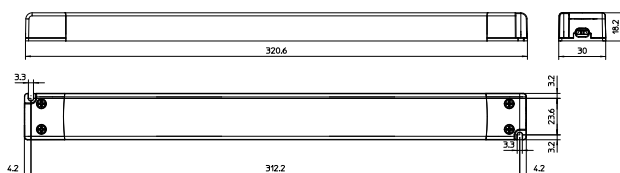
- Casing: K117
- Ref. No.: 187609, 187610, 187611
- Length: 251 mm
- Width: 30 mm
- Height: 16 mm



- Casing: K118
- Ref. No.: 187612
- Length: 301 mm
- Width: 30 mm
- Height: 16 mm



- Casing: K119
- Ref. No.: 187613
- Length: 321 mm
- Width: 30 mm
- Height: 18 mm



### Applied standards

- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 61000-3-2
- 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.

### Packaging units

Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
187609	50	80	116
187610	50	80	173
187611	50	80	146
187612	50	60	222
187613	50	60	285

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



## 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 ( $\pm$ 5%)	THD at full load % (230 V)	Efficiency at full load % (230 V)	Ripple 100 Hz %
30	EDXe 130/24.109	<b>187609</b>	220–240	162–148	30 / 160	0–1250	24	5	86	$\leq$ 2
60	EDXe 160/24.110	<b>187610</b>	220–240	309–285	30 / 365	0–2500	24	9	90	$\leq$ 2
100	EDXe 1100/24.111	<b>187611</b>	220–240	307–277	65 / 220	0–4170	24	8	93	$\leq$ 2
150	EDXe 1150/24.112	<b>187612</b>	220–240	734–673	80 / 240	0–6250	24	4	94	$\leq$ 2
240	EDXe 1240/24.113	<b>187613</b>	220–240	1156–1059	80 / 400	0–10000	24	3	95	$\leq$ 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.		
187609	–20	+45	5	85	–30	+80	5	85	+80	IP20
187610									+85	
187611									+90	
187612									+90	
187613									+90	

## Expected service life time

at operation temperatures at  $t_c$  point

Operation current	Ref. No.					
	187609	187610	187611, 187612, 187613			
All	80 °C	70 °C	85 °C	75 °C	90 °C*	80 °C
hrs.	30.000	50.000	30.000	50.000	30.000	50.000

\* recommended operation temperature

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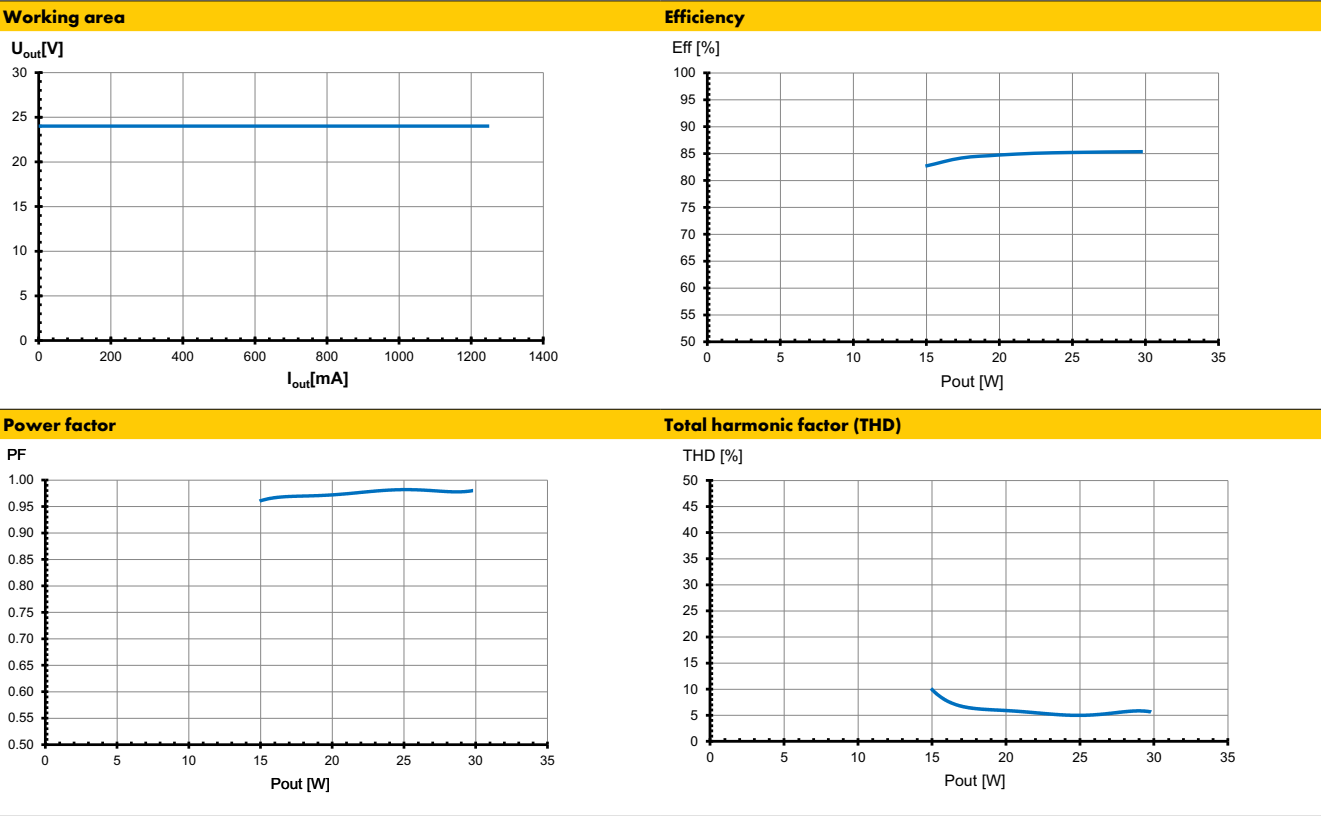
Product labels

N L	<b>PRI</b> U <sub>in</sub> =220...240V~ I <sub>n</sub> =0,17A f <sub>n</sub> =50/60Hz λ:0,05C-0,95	<b>VS LIGHTING SOLUTIONS</b> Vossloh-Schwabe Deutschland GmbH Stuttgarter Straße 61/1, 73614 Schorndorf Constant Voltage LED driver	<b>Type EDXe130/24.109</b> Ref-No. 187609 I <sub>a</sub> =-20...45°C I <sub>c</sub> =80°C Made In China	<b>SEC</b> U <sub>out</sub> =24VDC I <sub>out</sub> =1,25A P <sub>total</sub> =30W  EN 61347-1 EN 61347-2-13 EN 62384 EN 55015 EN 61547		<b>SEC</b> + -
N L	<b>PRI</b> U <sub>in</sub> =220...240V~ I <sub>n</sub> =0,27A f <sub>n</sub> =50/60Hz λ:0,05C-0,95	<b>VS LIGHTING SOLUTIONS</b> Vossloh-Schwabe Deutschland GmbH Stuttgarter Straße 61/1, 73614 Schorndorf Constant Voltage LED driver	<b>Type EDXe1 60/24.1 10</b> Ref-No. 187610 I <sub>a</sub> =-20...45°C I <sub>c</sub> =85°C Made In China	<b>SEC</b> U <sub>out</sub> =24VDC I <sub>out</sub> =2,5A P <sub>total</sub> =60W  EN 61347-1 EN 61347-2-13 EN 62384 EN 55015 EN 61547		<b>SEC</b> + -
N L	<b>PRI</b> U <sub>in</sub> =220...240V~ I <sub>n</sub> =0,5A f <sub>n</sub> =50/60Hz λ:0,05C-0,95	<b>VS LIGHTING SOLUTIONS</b> Vossloh-Schwabe Deutschland GmbH Stuttgarter Straße 61/1, 73614 Schorndorf Constant Voltage LED driver	<b>Type EDXe1 100/24.1 11</b> Ref-No. 187611 I <sub>a</sub> =-20...45°C I <sub>c</sub> =90°C Made In China	<b>SEC</b> U <sub>out</sub> =24VDC I <sub>out</sub> =4,17A P <sub>total</sub> =100W  EN 61347-1 EN 61347-2-13 EN 62384 EN 55015 EN 61547		<b>SEC</b> + -
N L	<b>PRI</b> U <sub>in</sub> =220...240V~ I <sub>n</sub> =0,8A f <sub>n</sub> =50/60Hz λ:0,05C-0,95	<b>VS LIGHTING SOLUTIONS</b> Vossloh-Schwabe Deutschland GmbH Stuttgarter Straße 61/1, 73614 Schorndorf Constant Voltage LED driver	<b>Type EDXe1 150/24.1 12</b> Ref-No. 187612 I <sub>a</sub> =-20...45°C I <sub>c</sub> =90°C Made In China	<b>SEC</b> U <sub>out</sub> =24VDC I <sub>out</sub> =6,25A P <sub>total</sub> =150W  EN 61347-1 EN 61347-2-13 EN 62384 EN 55015 EN 61547		<b>SEC</b> + -
N L	<b>PRI</b> U <sub>in</sub> =220...240V~ I <sub>n</sub> =1,16A f <sub>n</sub> =50/60Hz λ:0,05C-0,95	<b>VS LIGHTING SOLUTIONS</b> Vossloh-Schwabe Deutschland GmbH Stuttgarter Straße 61/1, 73614 Schorndorf Constant Voltage LED driver	<b>Type EDXe1240/24.113</b> Ref-No. 187613 I <sub>a</sub> =-20...45°C I <sub>c</sub> =90°C Made In China	<b>SEC</b> U <sub>out</sub> =24VDC I <sub>out</sub> =10A P <sub>total</sub> =240W  EN 61347-1 EN 61347-2-13 EN 62384 EN 55015 EN 61547		<b>SEC</b> + -

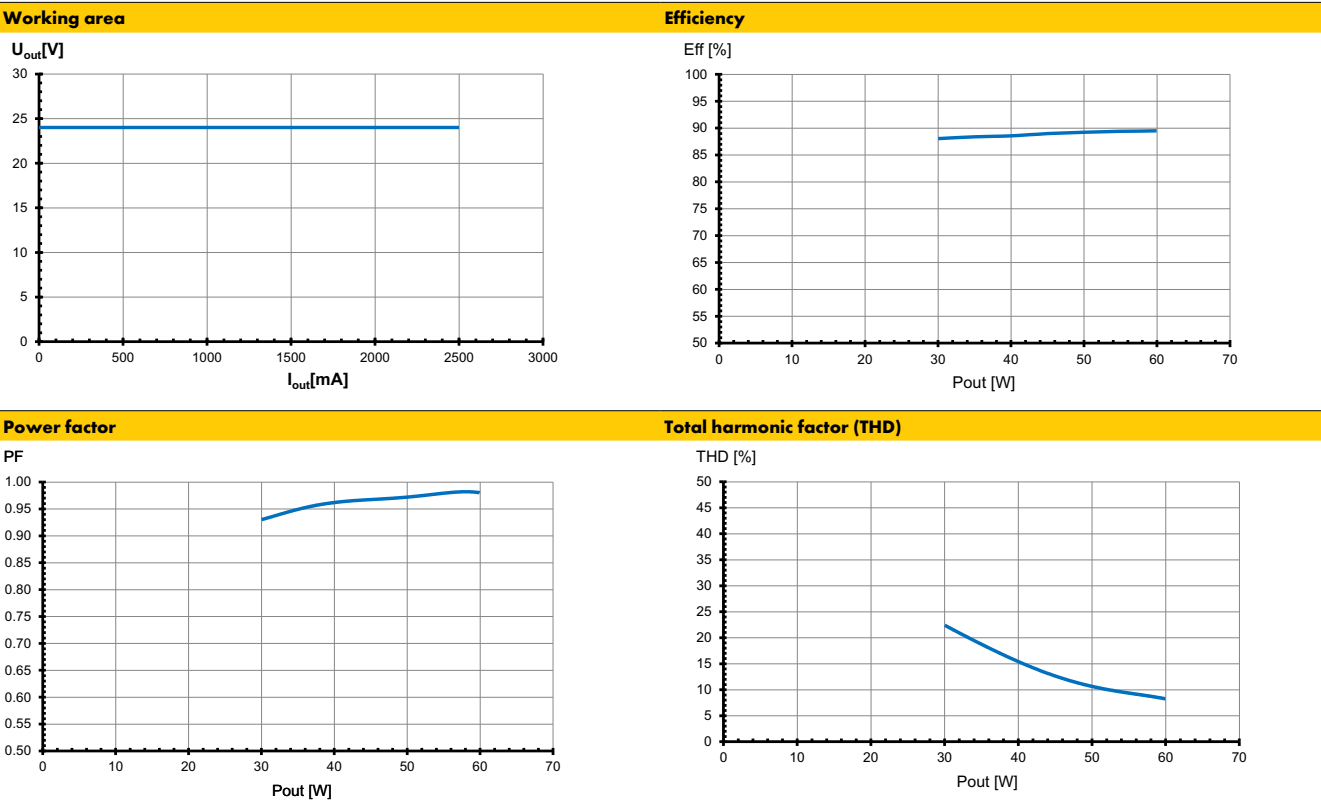
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Typ. performance graphs for 187609 / EDXe 130/24.109



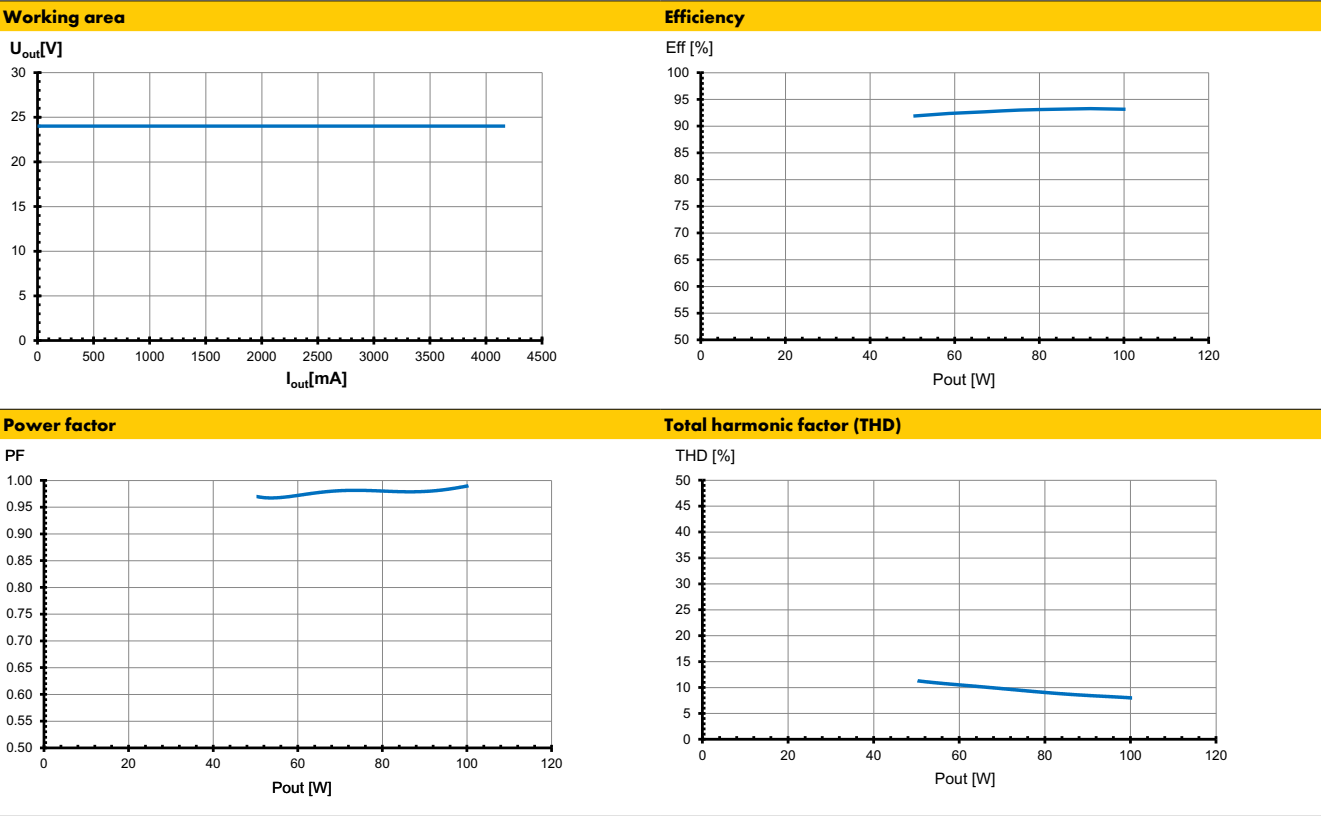
Typ. performance graphs for 187610 / Type EDXe 160/24.110



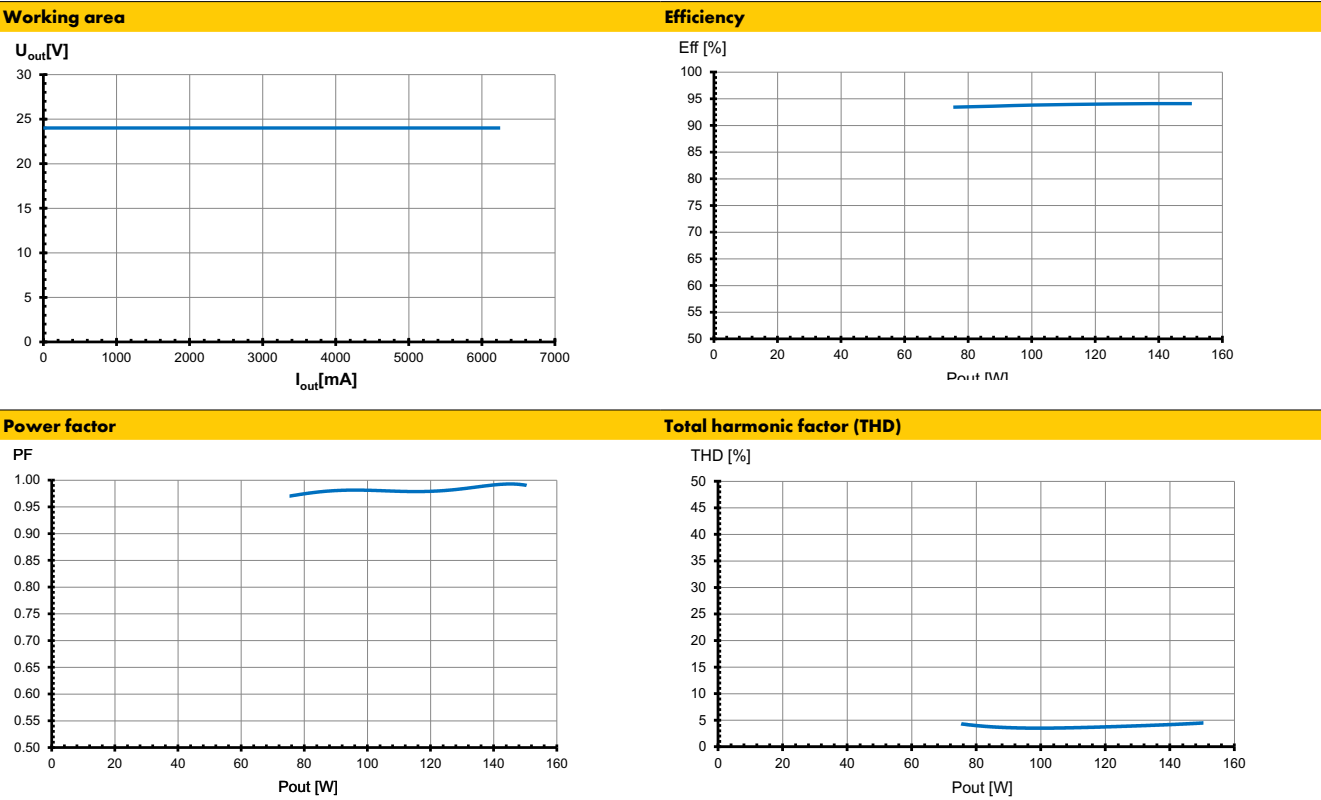
The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.



Typ. performance graphs for 187611 / Type EDXe 1100/24.111



Typ. performance graphs for 187612 / Type EDXe 1150/24.112

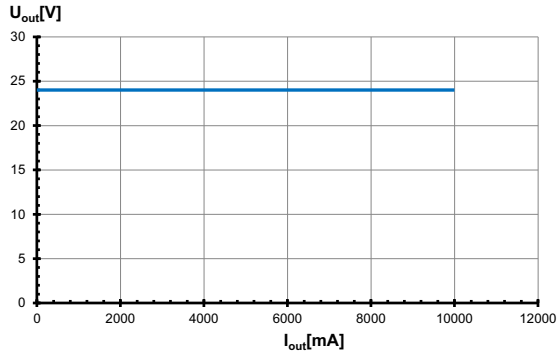


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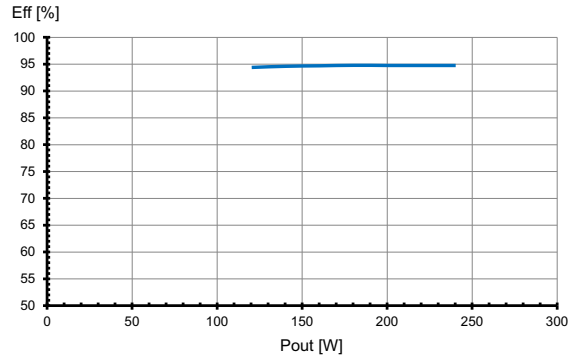


## Typ. performance graphs for 187613 / Type EDXe 1240/24.113

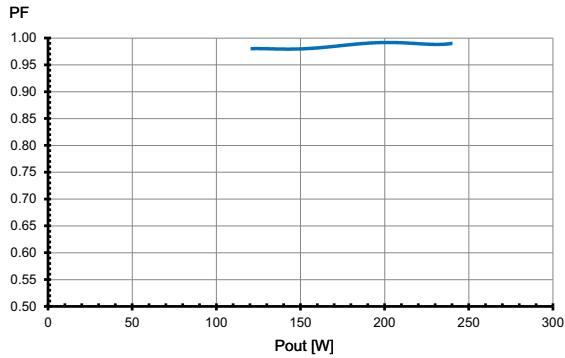
**Working area**



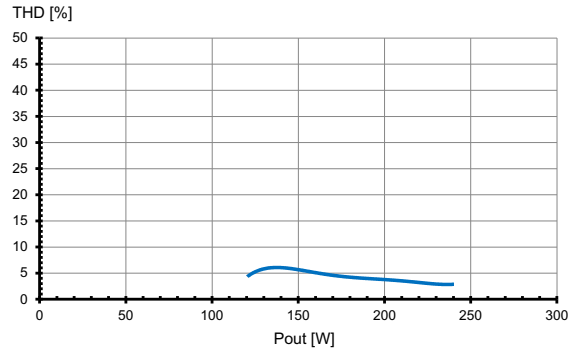
**Efficiency**



**Power factor**



**Total harmonic factor (THD)**



## Safety features

- 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 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.

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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

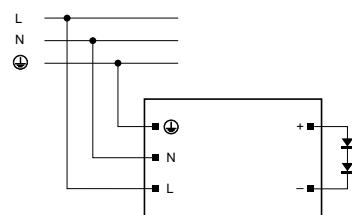
### Mechanical mounting

- Mounting position: 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: 0.10 m recommended 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.  
Input terminal: 0.75–1.5 mm<sup>2</sup> (All types)  
Output terminal: 0.5–1.5 mm<sup>2</sup> (30/60/100W)  
0.75–2.5 mm<sup>2</sup> (150/240W)
- 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 m $\Omega$  (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 130/24.109	<b>187609</b>	17	22	27	28	37	46
EDXe 160/24.110	<b>187610</b>	7	9	11	12	15	19
EDXe 1100/24.111	<b>187611</b>	5	7	9	9	12	15
EDXe 1150/24.112	<b>187612</b>	4	5	6	7	9	11
EDXe 1240/24.113	<b>187613</b>	2	3	3	4	5	6

- 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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