CV 24 V

Gen. 2

EASYLINE 24 V C-L GEN. 2

187000, 187001, 187002, 187003, 187004

Typical Applications

Built-in in luminaires for 24 V systems

- Retail lighting
- Residential lighting
- Furniture lighting

EasyLine 24 V C-L Gen.2

- **VERY LOW RIPPLE CURRENT: < 3%**
- **WITH INTEGRATED CORD GRIP FOR INDEPENDENT OPERATION**
- **SELV**
- **SUITABLE FOR BUILT-IN INTO FURNITURE**
- **LONG SERVICE LIFE: UP TO 60,000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**

5 YEARS GUARANTEE

LIGHTING SOLUTIONS

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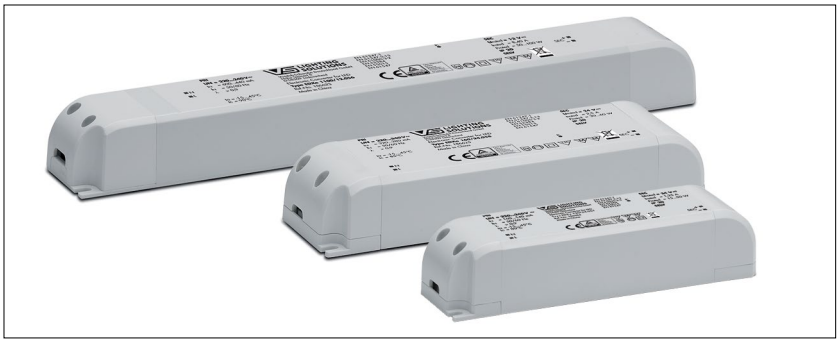
EasyLine 24 V C-L Gen.2



Product features
- Compact casing shape
- For use in applications with medium and high capacity range of up to 30, 60, 75, 120 and 180 W

Electrical features
- Mains voltage: 220–240 V ±10%
- Mains frequency: 50–60 Hz
- Screw terminals: 0.75–1.5 mm² or 0.5–2.5 mm² (187004)
- Power factor at full load: > 0.95 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
- SVM: < 0.4
- PstLM: < 1

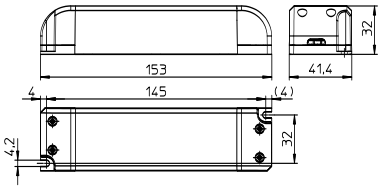
IP20 · SELV · 110 · OVERLOAD PROTECTION · 0% NO LOAD OPERATION

Service Lifetime 60 000 hours · Guarantee 5 years

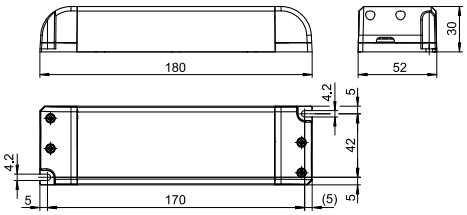
Applied standards
- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 61000-3-2
- EN 62384
- EN 55015

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).
  We will be happy to send you these conditions upon request.

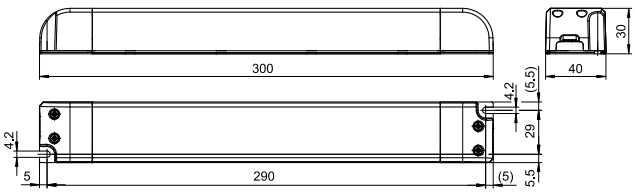
Dimensions
- Casing: K53
- Ref. No.: 187000
- Length: 153 mm
- Width: 41 mm
- Height: 32 mm



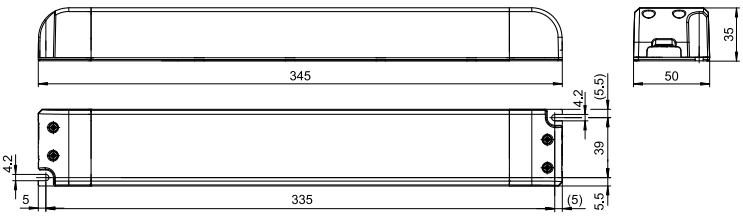
- Casing: K55.1
- Ref. No.: 187001, 187002
- Length: 180 mm
- Width: 52 mm
- Height: 30 mm



- Casing: K60
- Ref. No.: 187003
- Length: 300 mm
- Width: 40 mm
- Height: 30 mm



- Casing: K61
- Ref. No.: 187004
- Length: 345 mm
- Width: 50 mm
- Height: 35 mm



Packaging units

Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
187000	20	100	121
187001	20	100	300
187002	20	100	300
187003	20	56	420
187004	12	77	650

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Electrical characteristics

Max. output W	Type	**Ref. No.**	Voltage 50–60 Hz V	Mains current mA	Inrush current A / µs	Current output DC mA (± 5%)	Voltage output DC V (± 5%)	THD at full load % (230 V)	Efficiency at full load % (230 V)	Ripple 100 Hz %
30	EDXe 130/24.090	**187000**	220–240	160-145	16 / 264	0–1250	24	8	88	≤ 3
60	EDXe 160/24.091	**187001**	220–240	310–280	27 / 300	0–2500	24	8	89	≤ 3
75	EDXe 175/24.092	**187002**	220–240	390–355	29 / 250	0–3125	24	7	90	≤ 3
120	EDXe 1120/24.093	**187003**	220–240	602–530	38/365	0–5000	24	6	93	≤ 3
180	EDXe 1180/24.094	**187004**	220–240	900–800	28 / 137	0–7500	24	6	94	≤ 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	Degree of protection
	°C min.	°C max.	% min.	% max.	°C min.	°C max.	% min.	% max.	°C	
187000	–20	+45	20	90	–40	+80	10	90	+80	IP20
187001	–20	+45							+85	
187002	–20	+45							+85	
187003	–20	+45							+85	
187004	–20	+50							+85	

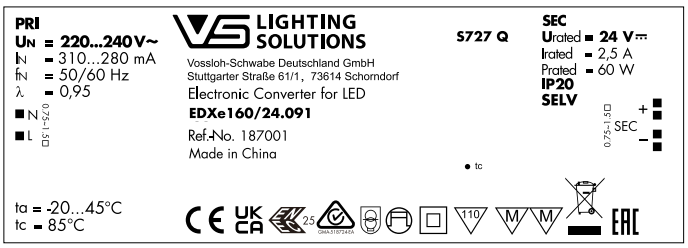
Product labels

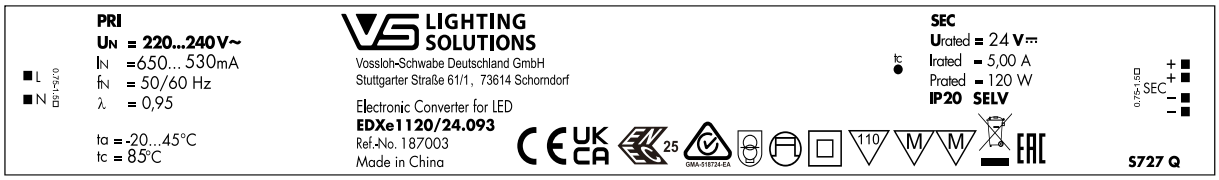
Expected service life time

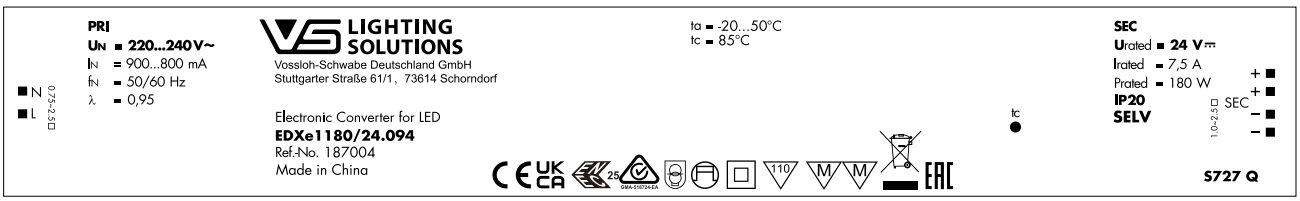
at operation temperatures at t_c point

Operation current	Ref. No. 187000		187001, 187002 187003, 187004	
All	70 °C*	80 °C	75 °C*	85 °C
hrs.	60,000	30,000	60,000	30,000

* recommended operation temperature







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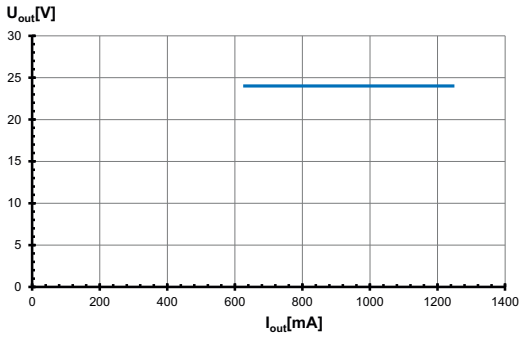
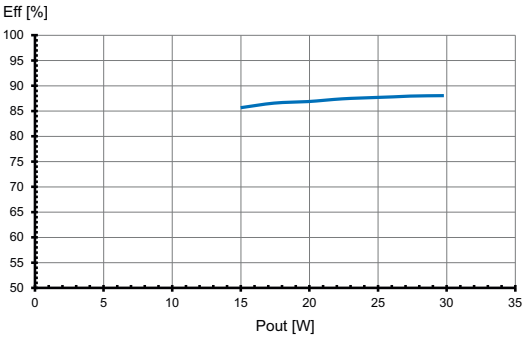
Typ. performance graphs for 187000 / EDXe 130/24.090

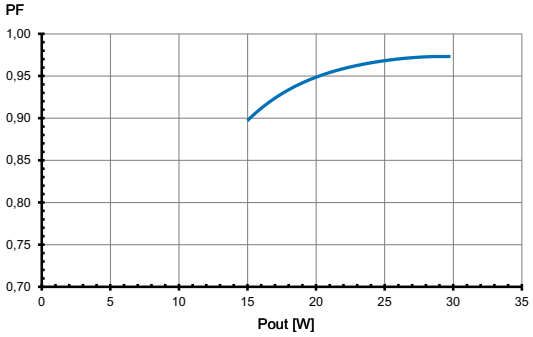
Working area



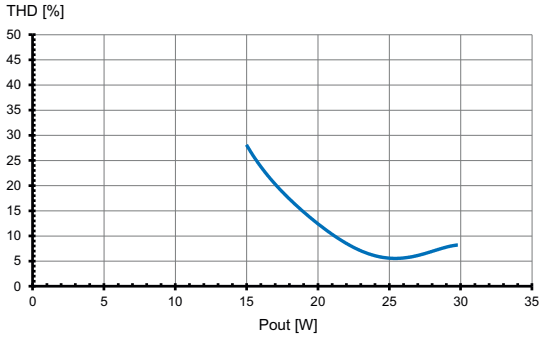
Efficiency



Power factor

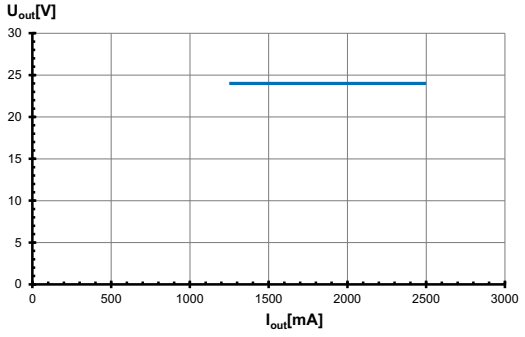


Total harmonic factor (THD)

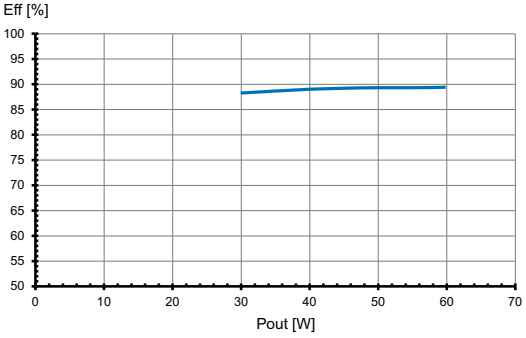


Typ. performance graphs for 187001 / Type EDXe 160/24.091

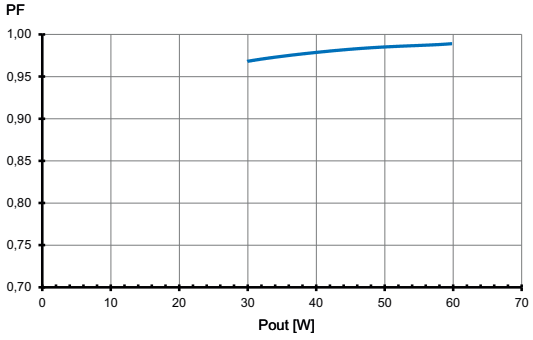
Working area



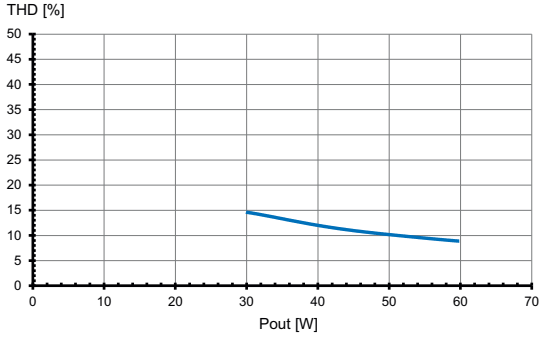
Efficiency



Power factor



Total harmonic factor (THD)



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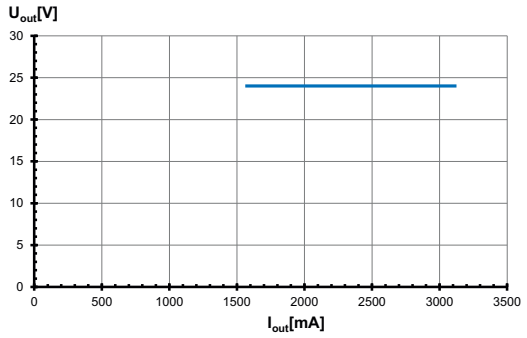
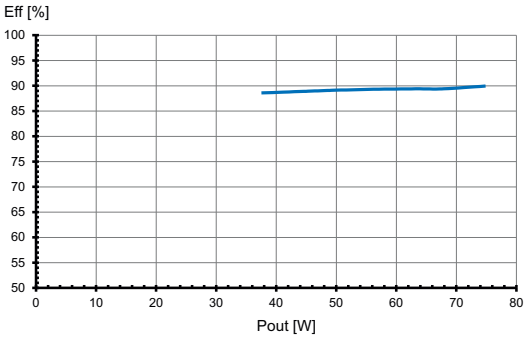
Typ. performance graphs for 187002 / Type EDXe 175/24.092

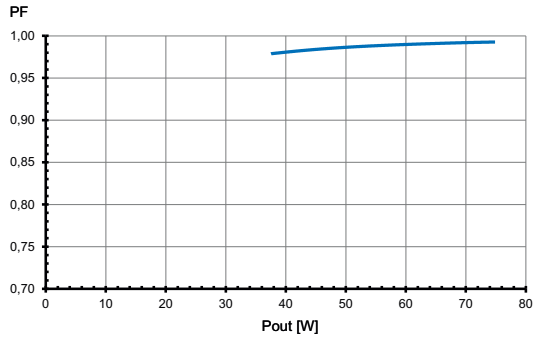
Working area



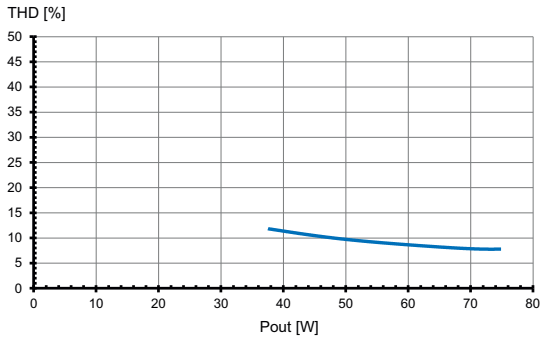
Efficiency



Power factor

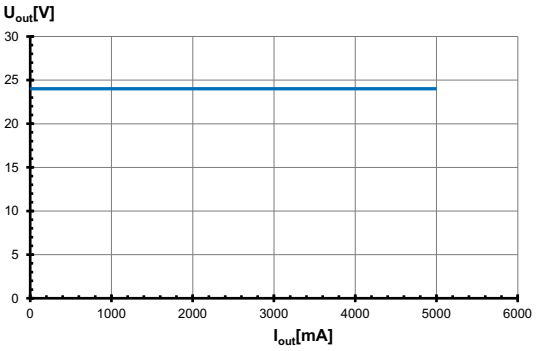


Total harmonic factor (THD)

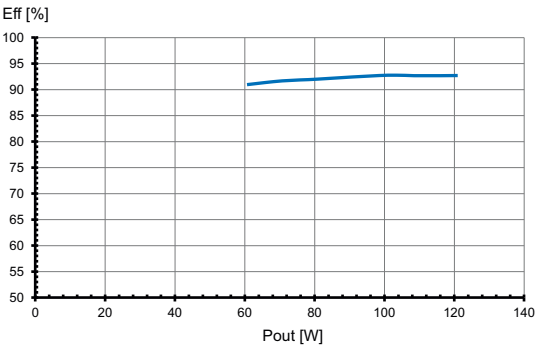


Typ. performance graphs for 187003 / Type EDXe 1120/24.093

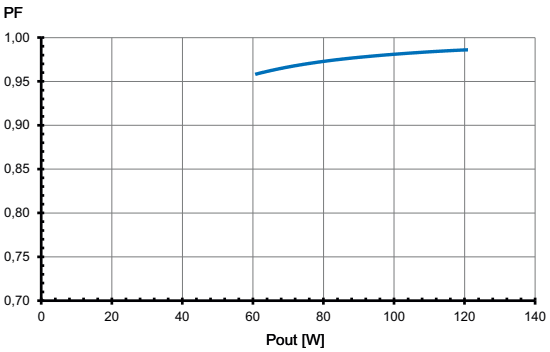
Working area



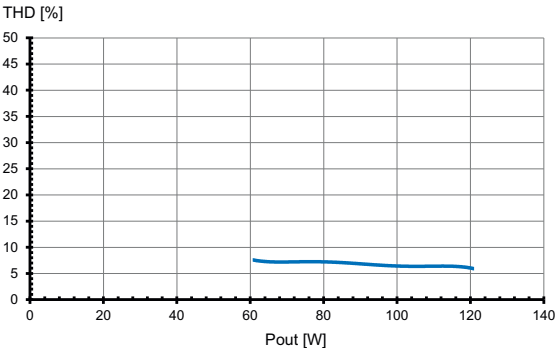
Efficiency



Power factor



Total harmonic factor (THD)



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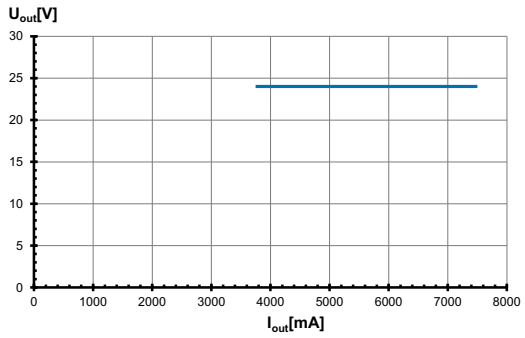
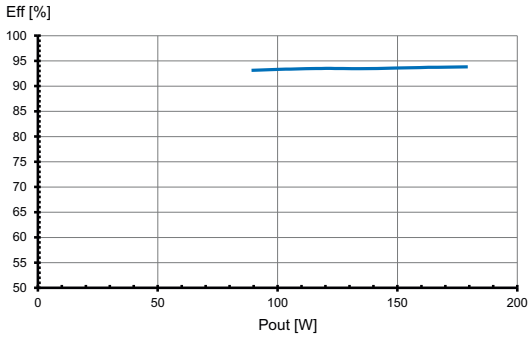
Typ. performance graphs for 187004 / Type EDXe 1180/24.094

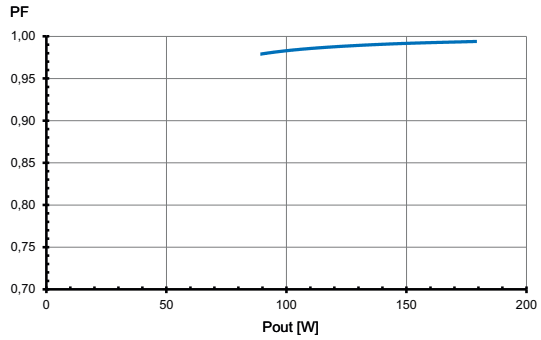
Working area



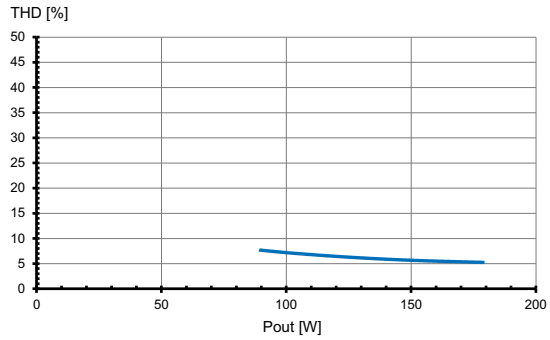
Efficiency



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 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.

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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

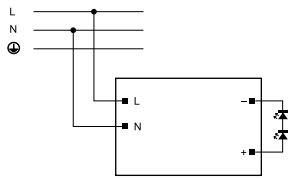
Mechanical mounting

- 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 ≥ 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 with a section of 0.75–2.5 mm² or 0.5–1.5 mm² (187004)
- 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 mm²] 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 130/24.090	**187000**	19	24	30	31	41	50
EDXe 160/24.091	**187001**	9	12	15	16	21	26
EDXe 175/24.092	**187002**	11	14	17	18	24	29
EDXe 1120/24.093	**187003**	5	7	9	9	12	15
EDXe 1180/24.094	**187004**	10	13	16	10	13	16

– 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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