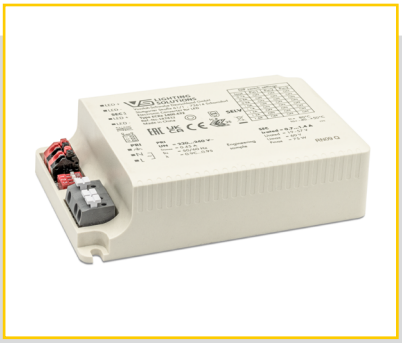
CC COMPACT DIP SWITCH



EASYLINE DIP SWITCH S

187431, 187432, 187436

Typical Applications

Built-in in outdoor luminaires

- Street lighting
- Industry lighting

EasyLine DIP switch S

- **SELECTABLE OUTPUT CURRENT VIA DIP SWITCH**
- **VERY LOW RIPPLE CURRENT: < 5 %**
- **SURGE PROTECTION: UP TO 6 KV**
- **SELV**
- **LONG SERVICE LIFE: UP TO 100,000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**

5 YEARS GUARANTEE

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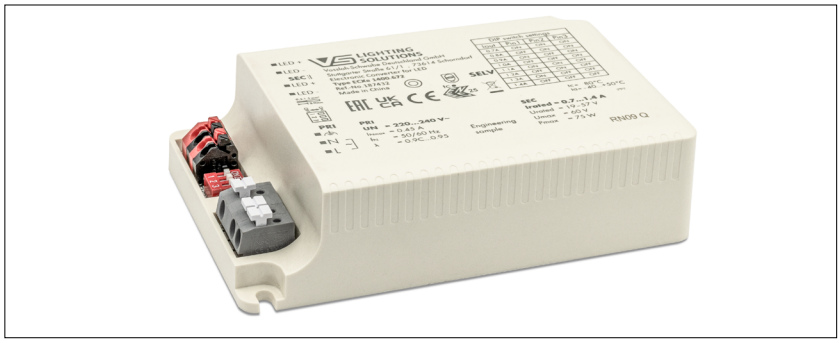
EasyLine DIP switch S



Product features
- Compact casing shape

Functions
- Selectable current output by DIP switch
- Easy parallel connection of modules enables because of two output terminals, (internally parallel connection)

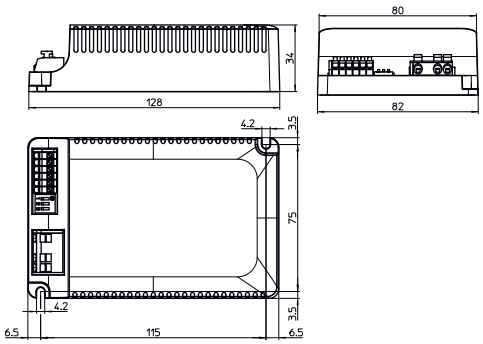
Electrical features
- Mains voltage: 220–240 V ±10%
- Mains frequency: 50–60 Hz
- Input terminal: 0.5–2.5 mm² / Output terminal: 0.2–1.5 mm²
- Power factor at full load: > 0.95
- Open circuit voltage ($U_{max.}$): 60 V
- Secondary side switching of LED modules is not allowed.

Safety features
- Protection against transient main peaks up to 4 kV (between L and N) and up to 6 kV (between L/N–PE)
- Electronic short-circuit protection
- Overload protection
- Overtemperature protection
- Protection against "no load" operation
- Degree of protection: IP20
- Protection class I and II
- SELV

Packaging units

Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
187431	20	68	170
187436	20	68	195
187432	10	128	435

Dimensions
- Casing: K106
- Length: 128 mm
- Width: 82 mm
- Width: 34 mm



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

Applied standards
- EN 61347-1
- EN 61347-2-13
- EN 62493
- EN 61547
- EN 61000-3-2
- EN 61000-3-3
- EN 62384
- EN 55015

Approvals

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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)	THD at full load % (230 V)	Efficiency at full load % (230 V)	Ripple 100 Hz %
40	ECXe 700.671	**187431**	220–240	206–189	32 / 304	350–700	19–57	7	> 88	< 5
60	ECXe 1050.673	**187436**	220–240	305–279	28 / 352	700–1050	19–57	6	> 90	< 5
75	ECXe 1400.672	**187432**	220–240	383–351	30 / 360	700–1400	19–57	5	> 90	< 5

Maximum ratings

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

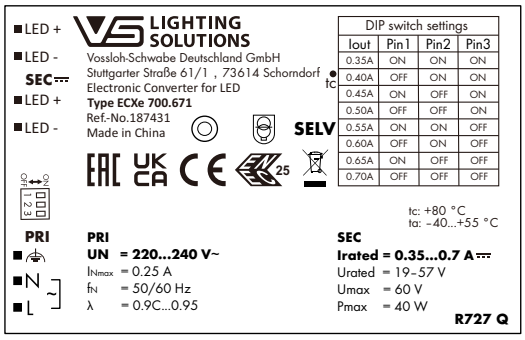
Ref. No.	Ambient temperature range		Operation humidity range		Storage temperature range		Storage humidity range		Max. operation temperature at t_c point	Degree of protection
	°C min.	°C max.	% min.	% max.	°C min.	°C max.	% min.	% max.	°C	
187431	–40	+55	5	90	–40	+80	5	90	+80	IP20
187436	–40	+50								
187432	–40	+50								

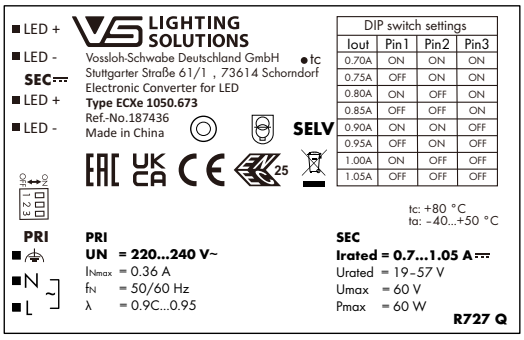
Expected service life time

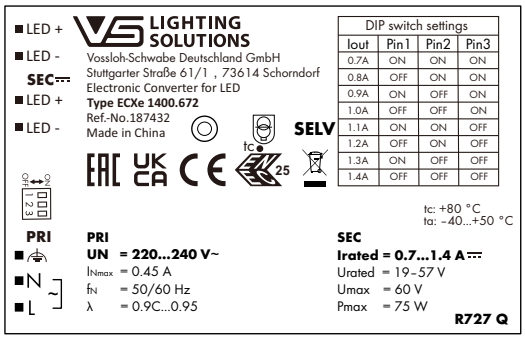
at operation temperatures at t_c point

Operation current	Ref. No. all types	
All	70 °C	80 °C
hrs.	100,000	50,000

Product label







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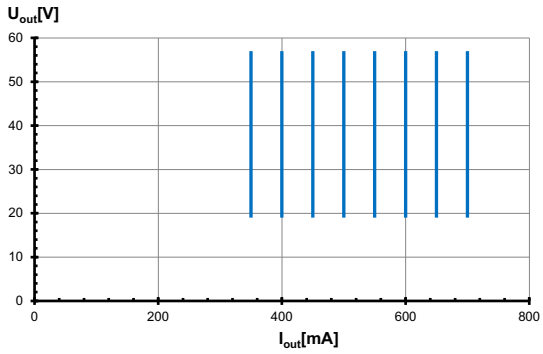
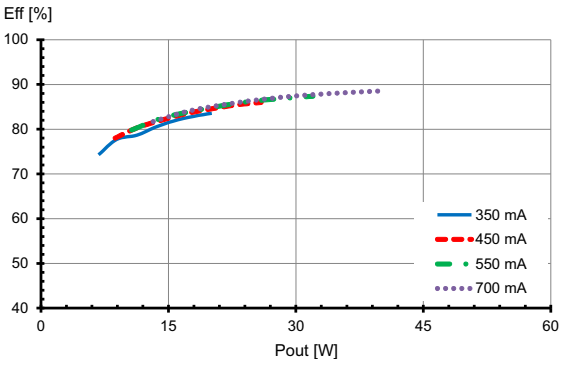
Typ. performance graphs for 187431 / Type ECXe 700.671

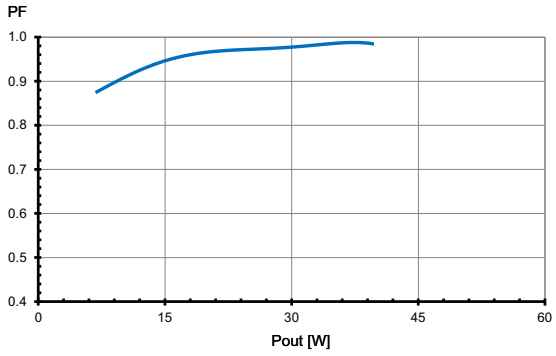
Working area



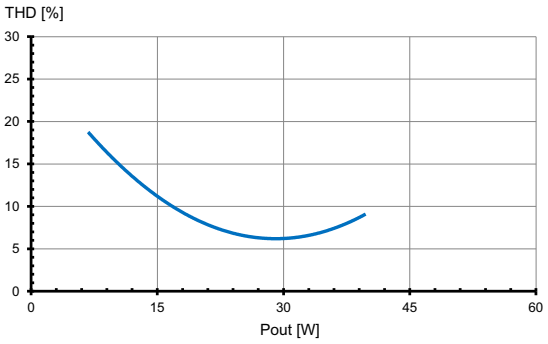
Efficiency



Power factor

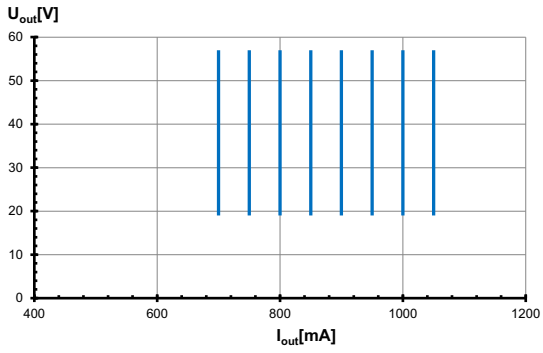


Total harmonic factor (THD)

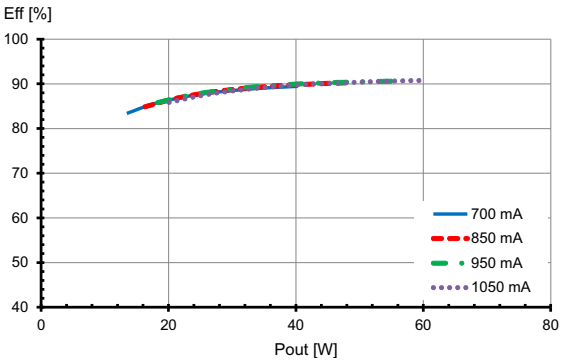


Typ. performance graphs for 187436 / Type ECXe 1050.673

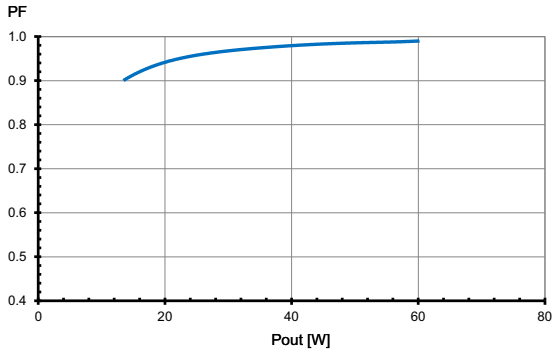
Working area



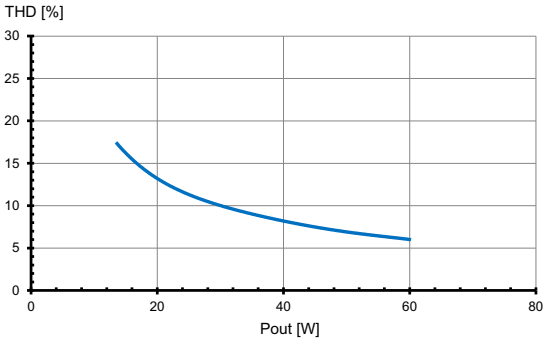
Efficiency



Power factor



Total harmonic factor (THD)



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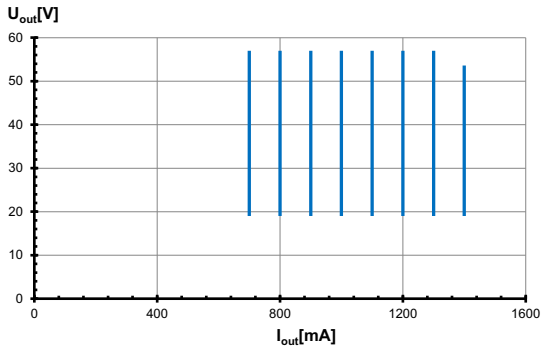
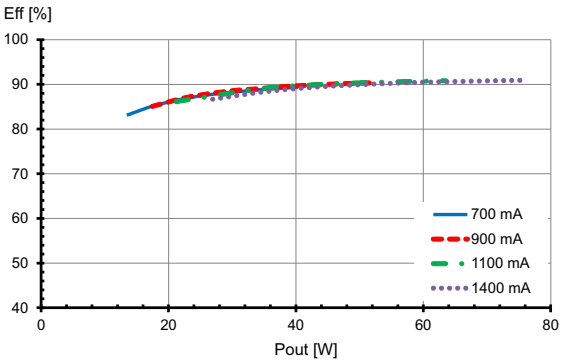
Typ. performance graphs for 187432 / Type ECXe 1400.672

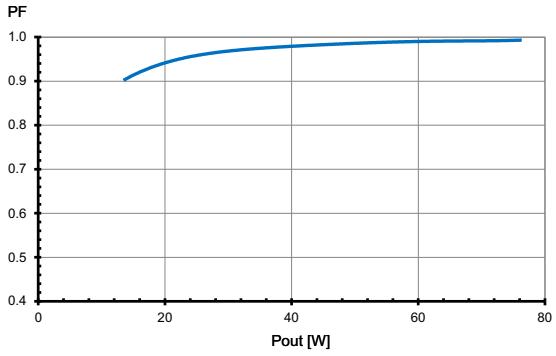
Working area



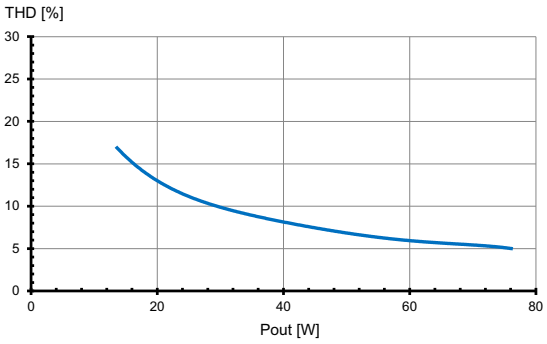
Efficiency



Power factor



Total harmonic factor (THD)



Safety functions

- Transient mains peaks protection:
  Values are in compliance with EN 61547 (interference immunity).
  Surges between L–N: up to 4 kV,
  Surges between L/N–PE: up to 6 kV
- Short-circuit protection: The control gear is protected against permanent short-circuit with shutdown and automatic restart function.
- Overload protection: The control gear is protected against overload with shutdown and automatic restart function.
- Overheating: The control gear has overheating protection. In case of overheating the control gear will reduce the power.
- No load operation: The control gear will supply continuous voltage in case of no load operation.
- 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

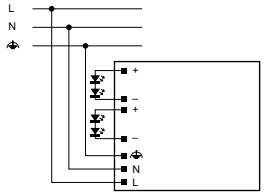
- DIN VDE 0100
- EN 60598-1

Mechanical mounting

- Mounting position: Built-in: Any position inside a luminaire is allowed.
- 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 ≥ 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

- Terminals: Push-in terminals for rigid or flexible conductors with a section of 0.5–2.5 mm² for the input terminals and 0.2–1.5 mm² for the output terminals
- Stripped length: 8–9 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.
- 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		B 10 A	B 13 A	B 16 A
ECXe 700.671	**187431**	8	10	13
ECXe 1050.673	**187436**	8	10	12
ECXe 1400.672	**187432**	7	9	11
Automatic cut-out type C		C 10 A	C 13 A	C 16 A
ECXe 700.671	**187431**	13	17	21
ECXe 1050.673	**187436**	13	17	21
ECXe 1400.672	**187432**	12	15	19

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

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