

# CC COMPACT DIP SWITCH



## EASYLINE DIP SWITCH C GEN.2

**187419, 187420, 187421, 187422, 187423, 187424**

### Typical Applications

Built-in in compact luminaires for

- Shop lighting
- Office lighting
- Residential lighting
- Downlights



### EasyLine DIP switch C-R1

- **SELECTABLE OUTPUT CURRENT VIA DIP SWITCH**
- **VARIOUS CORD GRIPS CAN BE FITTED**
- **SELV**
- **LONG SERVICE LIFE: UP TO 100.000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**



## EasyLine DIP switch C Gen.2

### Product features

- Compact casing shape

### Functions

- Selectable current output by dip-switch

### Electrical features

- Mains voltage: 220–240 V ±10%
- Mains frequency: 50–60 Hz
- Push-in terminals:  
rigid 0.5–1.5 mm<sup>2</sup>  
strand 0.75–1.5 mm<sup>2</sup>
- Power factor at full load: > 0.95
- Open circuit voltage (U<sub>max.</sub>): 60 V
- Secondary side switching of LED modules is not allowed.

### Safety features

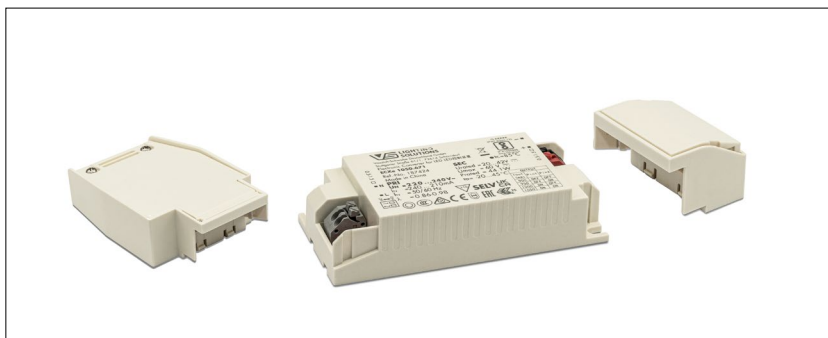
- Protection against transient main peaks up to 1 kV (between L and N)
- Electronic short-circuit protection
- Overload protection
- Degree of protection: IP20
- Protection class II
- SELV
- SVM: < 0.4
- PstLM: < 1

### Packaging units

Ref. No.	Packaging unit		Weight g
	Pieces per box	Boxes per pallet	
187419	20	200	57
187420	20	200	57
187421	20	200	81
187422	20	200	85
187423	20	200	130
187424	20	200	135

### Product guarantee

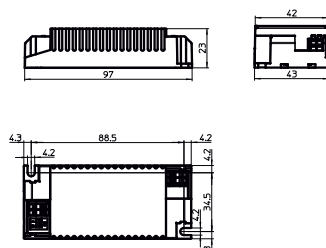
- 5 years  
for operation at recommended operation temperature (see table for expected service life time on the next page)
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage (www.vossloh-schwabe.com).  
We will be happy to send you these conditions upon request.



### Dimensions

Ref. No.	Casing	Length mm	Width mm	Height mm
ALL	K107	97	43	23

### K107



### Cord grip "sl" (screwless) for K107

Available for independent operation

1 Cord-Grip contains one upper and one lower part

Available separately

2 cord grips per LED driver required

Permitted diameter of the cable mantle: 3-7mm

2x0.75-1.5mm<sup>2</sup> PVC cable

Packaging unit: 20 pcs.

**Ref. No.: 187450** (1 pcs Cord Grip sl for K107)

### Cord grip "ws" (with screw) for K107

Available for independent operation

Available separately

2 cord grips per LED driver required

Permitted diameter of the cable mantle: 3-9mm

2x0.75-1.5mm<sup>2</sup> PVC cable

Packaging unit: 20 pcs.

**Ref. No.: 187451** (1 pcs Cord Grip ws for K107)

### Cord grip "LLO" for K107

Available for independent operation

Available separately

Permitted diameter of the cable mantle: 5-12mm

3x0.75-2.5mm<sup>2</sup> PVC cable, "E" terminal for protective earth

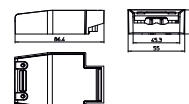
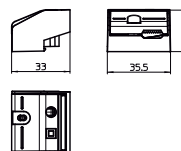
Only for looping wiring, two cables

Packaging unit: 20 pcs.

**Ref.-No.: 187453** (1 pcs LLO(3pin) for K107)

### Applied standards

- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 61000-3-2/EN 61000-3-3
- EN 62384
- EN 55015
- EN 61000-4-2/EN 61000-4-5



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 DIP switch C Gen.2

## 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%; for 14W $\pm$ 7,5%)	Voltage output DC (V)	THD at full load % (230 V)	Efficiency at full load % (230 V)	Ripple 100 Hz %
14	ECXe 700.666	<b>187419</b>	220–240	80-65	15 / 244	350/500/550/700	6-20	8	83	<5
17	ECXe 400.667	<b>187420</b>	220–240	95-80	15 / 246	250/300/350/400	20-42	9	87	<5
25	ECXe 600.668	<b>187421</b>	220–240	140-120	15 / 250	450/500/550/600	20-42	9	88	<5
33	ECXe 800.669	<b>187422</b>	220–240	180-160	20 / 266	650/700/750/800	20-42	8	89	<5
40	ECXe 800.670	<b>187423</b>	220-240	215-180	23 / 260	500/600/700/800	30-50	8	89	<5
44	ECXe 1050.671	<b>187424</b>	220-240	240-210	18 / 275	900/950/1000/1050	20-42	9	89	<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 °C	Degree of protection
	°C min.	°C max.	% min.	% max.	°C min.	°C max.	% min.	% max.		
187419	-20	+45	10	95	-40	+80	5	95	75	IP20
187420									70	
187421, 187422, 187424									80	
187423									85	

## Expected service life time

at operation temperatures at  $t_c$  point

Operation current	Ref. No.	187419	187420	187421, 187422, 187424	187423			
All	65 °C*	75 °C	60 °C*	70 °C	70 °C*	80 °C	75 °C*	85 °C
hrs.	100.000	50.000	100.000	50.000	100.000	50.000	100.000	50.000

\* recommended operation temperature

## Product labels

**VS LIGHTING SOLUTIONS** 5727 Q IS 15885 (Part 2/Sec 13)  
 Vossloh-Schwabe Deutschland GmbH  
 Stuttgarter Straße 61/1, 73614 Schorndorf  
 Electronic Converter for LED LED控制装置  
 only BIS R-XXXXXX www.vsl.com.cn

**ECXe 700.666** SEC  $t_c=75^\circ\text{C}$   
 Ref.No. 187419 Urated = 6...20V  $\ddot{\sim}$   $\Delta$  0.5/1.5/0  
 Made in China Umax = 60 V  $\ddot{\sim}$   $\Delta$  0.5/1.5/0  
**PRI** UN = 220...240V- Prated = 14W  
 In = 80...65mA  $\Delta$  0.5/1.5/0  
 fn = 50/60 Hz  $\Delta$  0.5/1.5/0  
 $\lambda$  = 0.50-0.96 SELV UK CA EAC 25

OUTPUT	Iout (mA)	Pin1	Pin2
350	OFF	OFF	OFF
500	OFF	ON	OFF
550	ON	OFF	ON
700	ON	ON	ON

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**ECXe 400.667** SEC  $t_c=70^\circ\text{C}$   
 Ref.No. 187420 Urated = 20...42V  $\ddot{\sim}$   $\Delta$  0.5/1.5/0  
 Made in China Umax = 60 V  $\ddot{\sim}$   $\Delta$  0.5/1.5/0  
**PRI** UN = 220...240V- Prated = 16.8W  
 In = 95...80mA  $\Delta$  0.5/1.5/0  
 fn = 50/60 Hz  $\Delta$  0.5/1.5/0  
 $\lambda$  = 0.65-0.96 SELV UK CA EAC 25

OUTPUT	Iout (mA)	Pin1	Pin2
250	OFF	OFF	OFF
300	OFF	ON	OFF
350	ON	OFF	ON
400	ON	ON	ON

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**ECXe 600.668** SEC  $t_c=80^\circ\text{C}$   
 Ref.No. 187421 Urated = 20...42V  $\ddot{\sim}$   $\Delta$  0.5/1.5/0  
 Made in China Umax = 60 V  $\ddot{\sim}$   $\Delta$  0.5/1.5/0  
**PRI** UN = 220...240V- Prated = 25.2W  
 In = 140...120mA  $\Delta$  0.5/1.5/0  
 fn = 50/60 Hz  $\Delta$  0.5/1.5/0  
 $\lambda$  = 0.78-0.95 SELV UK CA EAC 25

OUTPUT	Iout (mA)	Pin1	Pin2
450	OFF	OFF	OFF
500	OFF	ON	OFF
550	ON	OFF	ON
600	ON	ON	ON

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 Stuttgarter Straße 61/1, 73614 Schorndorf  
 Electronic Converter for LED LED控制装置  
 only BIS R-XXXXXX www.vsl.com.cn

**ECXe 800.669** SEC  $t_c=80^\circ\text{C}$   
 Ref.No. 187422 Urated = 20...42V  $\ddot{\sim}$   $\Delta$  0.5/1.5/0  
 Made in China Umax = 60 V  $\ddot{\sim}$   $\Delta$  0.5/1.5/0  
**PRI** UN = 220...240V- Prated = 33.6W  
 In = 180...160mA  $\Delta$  0.5/1.5/0  
 fn = 50/60 Hz  $\Delta$  0.5/1.5/0  
 $\lambda$  = 0.81-0.97 SELV UK CA EAC 25

OUTPUT	Iout (mA)	Pin1	Pin2
650	OFF	OFF	OFF
700	OFF	ON	OFF
750	ON	OFF	ON
800	ON	ON	ON

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**ECXe 800.670** SEC  $t_c=80^\circ\text{C}$   
 Ref.No. 187423 Urated = 30...50V  $\ddot{\sim}$   $\Delta$  0.5/1.5/0  
 Made in China Umax = 60 V  $\ddot{\sim}$   $\Delta$  0.5/1.5/0  
**PRI** UN = 220...240V- Prated = 40W  
 In = 215...180mA  $\Delta$  0.5/1.5/0  
 fn = 50/60 Hz  $\Delta$  0.5/1.5/0  
 $\lambda$  = 0.83-0.97 SELV UK CA EAC 25

OUTPUT	Iout (mA)	Pin1	Pin2
500	OFF	OFF	OFF
600	OFF	ON	OFF
700	ON	OFF	ON
800	ON	ON	ON

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**ECXe 1050.671** SEC  $t_c=85^\circ\text{C}$   
 Ref.No. 187424 Urated = 20...42V  $\ddot{\sim}$   $\Delta$  0.5/1.5/0  
 Made in China Umax = 60 V  $\ddot{\sim}$   $\Delta$  0.5/1.5/0  
**PRI** UN = 220...240V- Prated = 44.1W  
 In = 240...210mA  $\Delta$  0.5/1.5/0  
 fn = 50/60 Hz  $\Delta$  0.5/1.5/0  
 $\lambda$  = 0.86-0.98 SELV UK CA EAC 25

OUTPUT	Iout (mA)	Pin1	Pin2
900	OFF	OFF	OFF
950	OFF	ON	OFF
1000	ON	OFF	ON
1050	ON	ON	ON

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# LED Drivers – EasyLine DIP switch C Gen.2

## DIP switch settings

### 187419 / ECXe 700.666

Pin	Output	Current	Voltage	Factory-
1	2	W	mA	settings (mA)
OFF	OFF	7	350	6-20 350
OFF	ON	10	500	
ON	OFF	11	550	
ON	ON	14	700	

### 187420 / ECXe 400.667

Pin	Output	Current	Voltage	Factory-
1	2	W	mA	settings (mA)
OFF	OFF	10,5	250	20-42 250
OFF	ON	12,6	300	
ON	OFF	14,7	350	
ON	ON	16,8	400	

### 187421 / ECXe 600.668

Pin	Output	Current	Voltage	Factory-
1	2	W	mA	settings (mA)
OFF	OFF	18,9	450	20-42 450
OFF	ON	21,0	500	
ON	OFF	23,1	550	
ON	ON	25,2	600	

### 187422 / ECXe 800.669

Pin	Output	Current	Voltage	Factory-
1	2	W	mA	settings (mA)
OFF	OFF	27,3	650	20-42 650
OFF	ON	29,4	700	
ON	OFF	31,5	750	
ON	ON	33,6	800	

### 187423 / ECXe 800.670

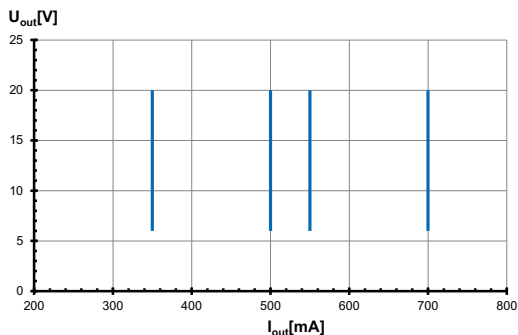
Pin	Output	Current	Voltage	Factory-
1	2	W	mA	settings (mA)
OFF	OFF	25	500	30-50 500
OFF	ON	30	600	
ON	OFF	35	700	
ON	ON	40	800	

### 187424 / ECXe 800.671

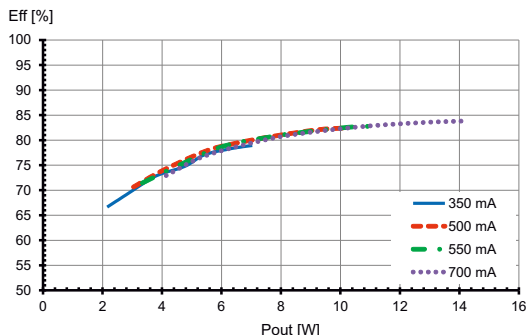
Pin	Output	Current	Voltage	Factory-
1	2	W	mA	settings (mA)
OFF	OFF	37,8	900	20-42 900
OFF	ON	39,9	950	
ON	OFF	42	1000	
ON	ON	44,1	1050	

## Typ. performance graphs for 187419 / Type ECXe 700.666

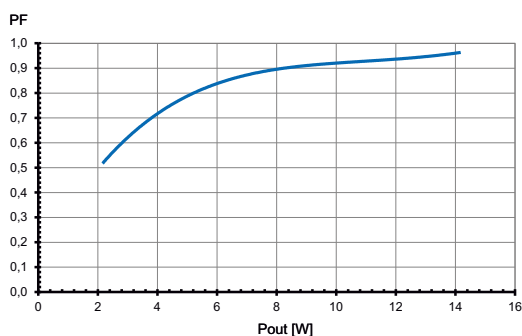
### Working area



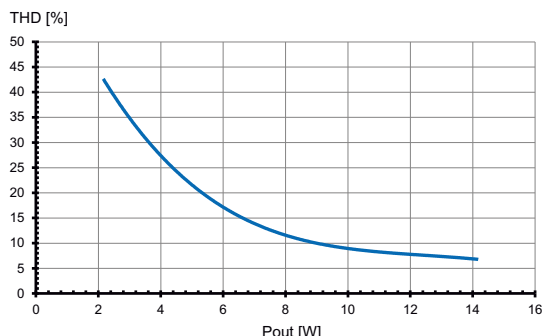
### Efficiency



### Power factor



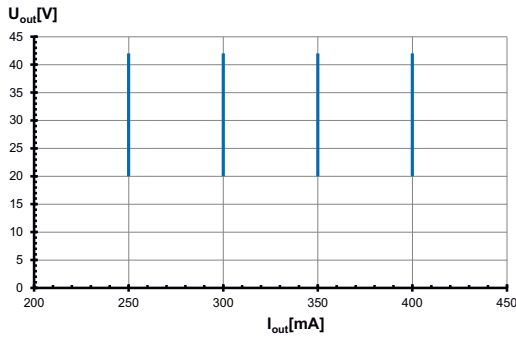
### Total harmonic factor (THD)



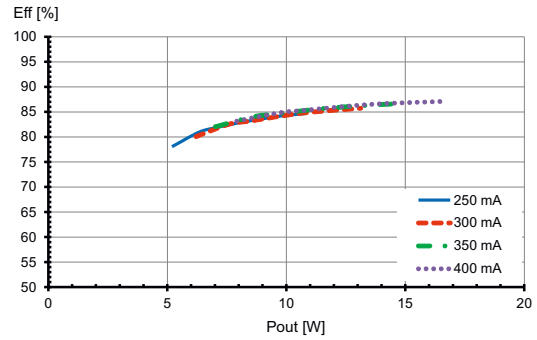
The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

## Typ. performance graphs for 187420 / Type ECXe 400.667

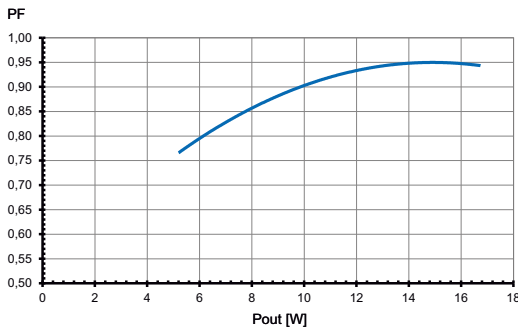
### Working area



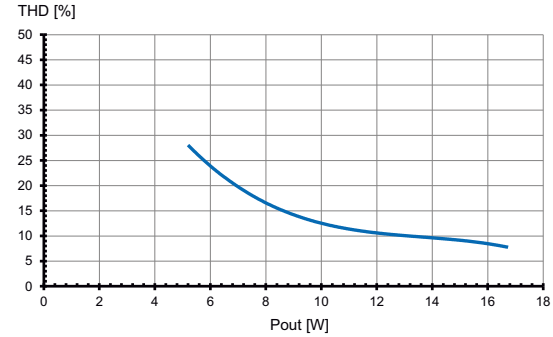
### Efficiency



### Power factor

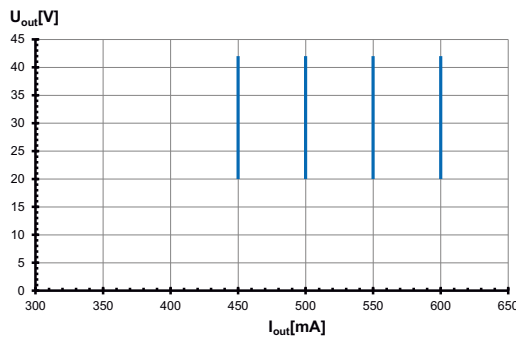


### Total harmonic factor (THD)

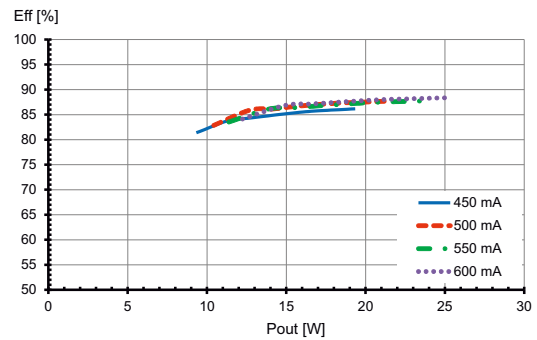


## Typ. performance graphs for 187421 / Type ECXe 600.668

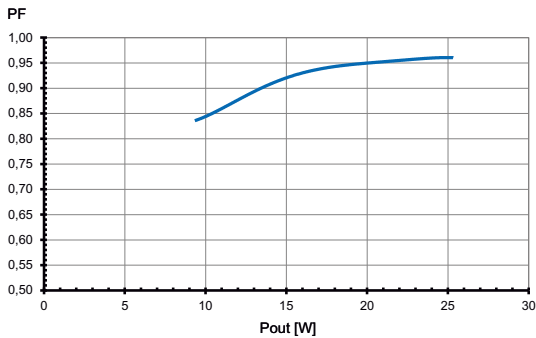
### Working area



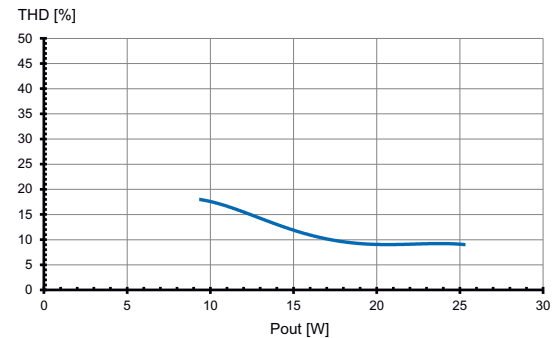
### Efficiency



### Power factor



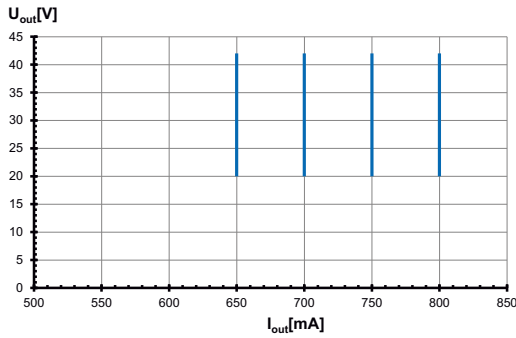
### Total harmonic factor (THD)



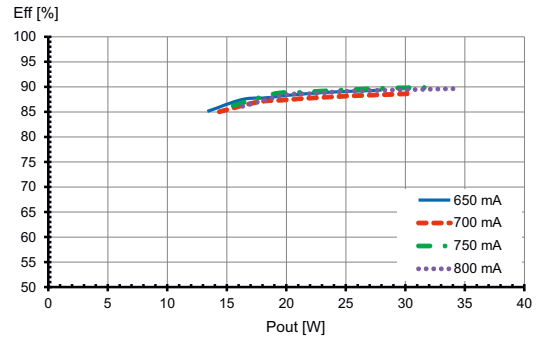
The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

## Typ. performance graphs for 187422 / Typ ECXe 800.669

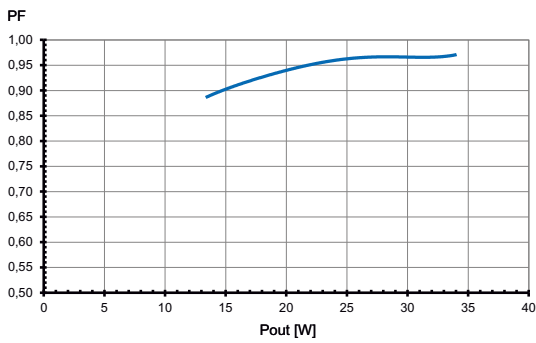
### Working area



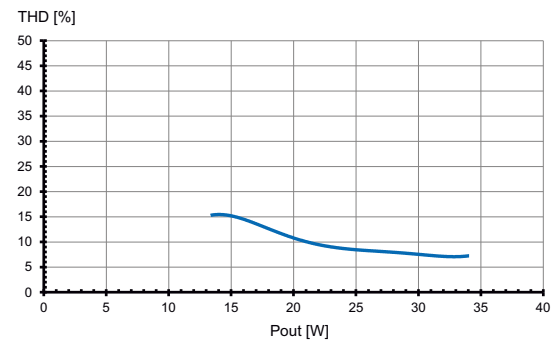
### Efficiency



### Power factor

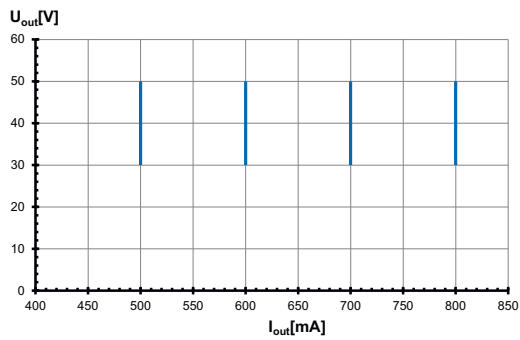


### Total harmonic factor (THD)

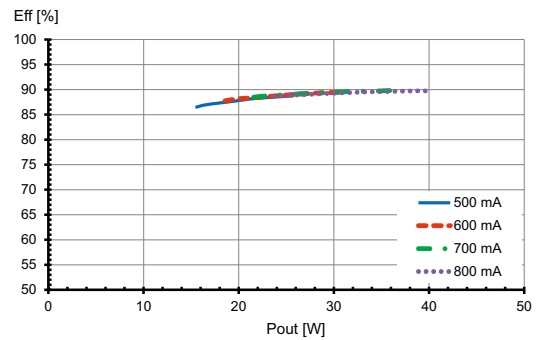


## Typ. performance graphs for 187423 / Typ ECXe 800.670

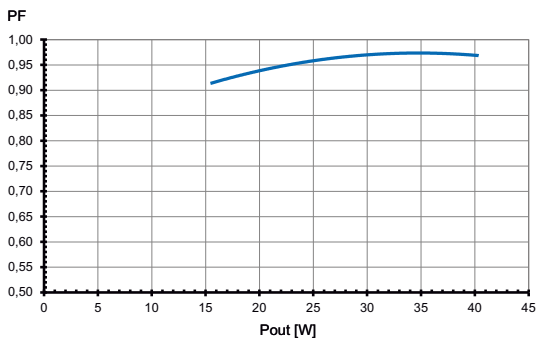
### Working area



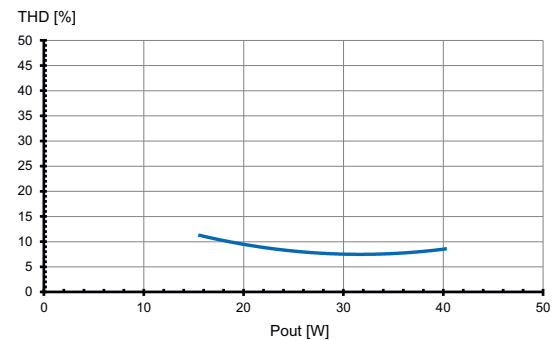
### Efficiency



### Power factor



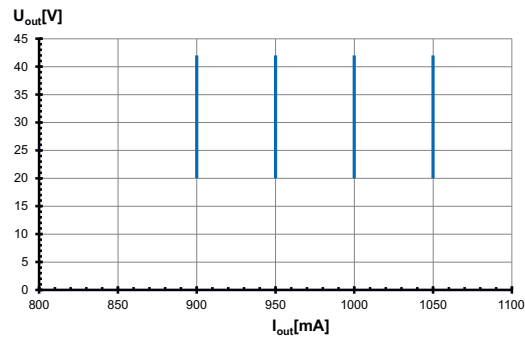
### Total harmonic factor (THD)



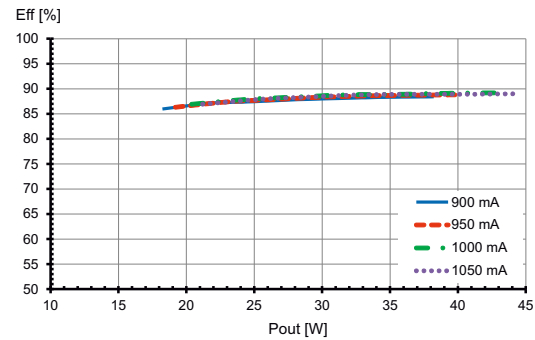
The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

## Typ. performance graphs 187424 / Type ECXe 800.671

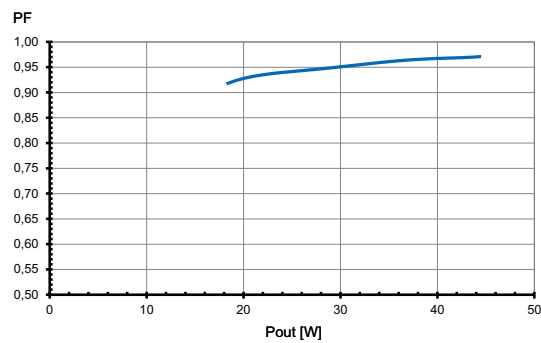
### Working area



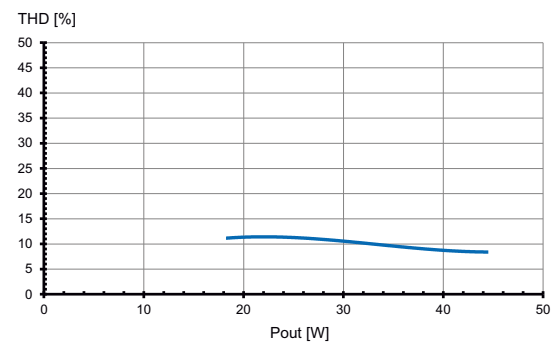
### Efficiency



### 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 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 (< 60 V DC).
  - Please check before switch-on mains power supply that the selected LED load is suitable (see Electrical Characteristics on data sheet).
- Overheating: The control gear has overheating protection.
  - In case of overheating the output current of the control gear will be reduced. After the temperature will drop below the critical temperature value, the output current rises again to the previously set value.
- 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

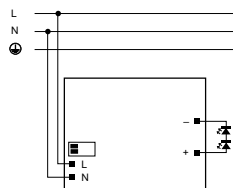
### Mechanical mounting

- Mounting position: Built-in: Any position inside a luminaire is allowed  
Independent application: Drivers are allowed to use for independent applications with separate cord grip.
- 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

- Connection terminals: Push-in terminals for rigid or flexible conductors with a section of  
built-in: 0,5-1,5mm<sup>2</sup> PVC cable  
independent: 0,75-1,5mm<sup>2</sup> PVC cable
- Stripped length: 7–8 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: 2 m

- 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 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.					
		B 10 A	B 13 A	B 16 A	C 10 A	C 13 A	C 16 A
<b>Automatic cut-out type</b>							
ECXe 700.666	<b>187419</b>	22	28	35	36	47	58
ECXe 400.667	<b>187420</b>	21	28	35	36	47	58
ECXe 600.668	<b>187421</b>	21	28	34	35	46	57
ECXe 800.669	<b>187422</b>	15	19	24	25	32	40
ECXe 800.670	<b>187423</b>	13	17	21	22	29	35
ECXe 1050.671	<b>187424</b>	16	21	25	27	35	43

- 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.

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