

CC COMPACT DIP SWITCH



EASYLINE DIP SWITCH C GEN.2

187419, 187420, 187421, 187422, 187423, 187424, 187474

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 $\pm 10\%$
- Mains frequency: 50–60 Hz
- Push-in terminals:
rigid 0.5–1.5 mm²
strand 0.75–1.5 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 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		
	Pieces per box	Boxes per pallet	Weight g
187419	20	200	57
187420	20	200	57
187421	20	200	81
187422	20	200	85
187423	20	200	130
187424	20	200	135
187474	20	198	160

Product guarantee

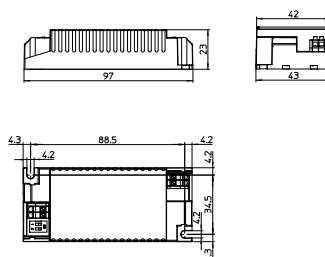
- 5 years
for operation at recommended operation temperature (see table for expected service life time on the next page)
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage (www.vossloh-schwabe.com).
We will be happy to send you these conditions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



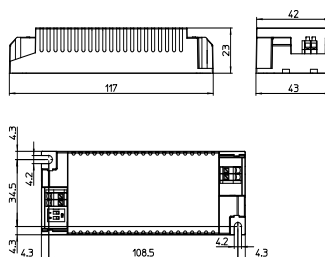
Dimensions

Ref. No.	Casing	Length mm	Width mm	Height mm
187419, 187420, 187421, 187422, 187423, 187424	K107	97	43	23
187474	K110	117	42	23

K107



K110



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.

Cord grip "sl" (screwless) for K107/K110

Available for independent operation

1 Cord-Grip contains one upper and one lower part

Available separately

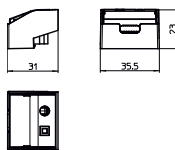
2 cord grips per LED driver required

Permitted diameter of the cable mantle: 3-7mm

2x0.75-1.5mm² PVC cable

Packaging unit: 20 pcs.

Ref. No.: 187450 (1 pcs Cord Grip sl for K107/K110)



Cord grip "ws" (with screw) for K107/K110

Available for independent operation

Available separately

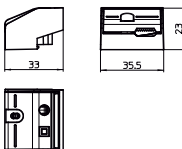
2 cord grips per LED driver required

Permitted diameter of the cable mantle: 3-9mm

2x0.75-1.5mm² PVC cable

Packaging unit: 20 pcs.

Ref. No.: 187451 (1 pcs Cord Grip sl for K107/K110)



Cord grip "LILLO" for K107/K110

Available for independent operation

Available separately

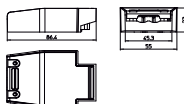
Permitted diameter of the cable mantle: 5-12mm

3x0.75-2.5mm² PVC cable, "E" terminal for protective earth

Only for looping wiring, two cables

Packaging unit: 20 pcs.

Ref.-No.: 187453 (1 pcs LILLO(3pin) for K107/K110)



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 / μ 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	187419	220–240	80-65	15 / 244	350/600/550/700	6-20	14	83	<5
17	ECXe 400.667	187420	220–240	95-80	15 / 246	250/300/350/400	20-42	14	87	<5
25	ECXe 600.668	187421	220–240	140-120	15 / 250	450/500/550/600	20-42	9	88	<5
33	ECXe 800.669	187422	220–240	180-160	20 / 266	650/700/750/800	20-42	8	89	<5
40	ECXe 800.670	187423	220-240	215-180	23 / 260	500/600/700/800	30-50	8	89	<5
44	ECXe 1050.671	187424	220-240	240-210	18 / 275	900/950/1000/1050	20-42	9	89	<5
59	ECXe 1400.692	187474	220-240	300-250	29 / 300	1100/1200/1300/1400	20-42	15	92	<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, 187474									85	

Expected service life time

at operation temperatures at t_c point

Operation current	Ref. No.							
	187419	187420		187421, 187422, 187424		187423, 187474		
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

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

Product labels

VSL LIGHTING SOLUTIONS **S727 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
ECXe 700.666
 Ref.-No. 187419
 Made in China
SEC $t_c = 75^\circ\text{C}$
 Urated = 6...20V
 Umax = 60V
 Prated = 14W
 ta = -20...45°C
PRI **UN** = 220...240V~
 In = 80...65mA
 fn = 50/60 Hz
 λ = -0.50-0.96
SELV UK
 OUTPUT

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

VSL LIGHTING SOLUTIONS **S727 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
ECXe 400.667
 Ref.-No. 187420
 Made in China
SEC $t_c = 70^\circ\text{C}$
 Urated = 20...42V
 Umax = 60V
 Prated = 16.8W
 ta = -20...45°C
PRI **UN** = 220...240V~
 In = 95...80mA
 fn = 50/60 Hz
 λ = -0.65-0.96
SELV UK
 OUTPUT

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

VSL LIGHTING SOLUTIONS **S727 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
ECXe 600.668
 Ref.-No. 187421
 Made in China
SEC $t_c = 80^\circ\text{C}$
 Urated = 20...42V
 Umax = 60V
 Prated = 25.2W
 ta = -20...45°C
PRI **UN** = 220...240V~
 In = 140...120mA
 fn = 50/60 Hz
 λ = -0.78-0.95
SELV UK
 OUTPUT

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

VSL LIGHTING SOLUTIONS **S727 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
ECXe 800.669
 Ref.-No. 187422
 Made in China
SEC $t_c = 80^\circ\text{C}$
 Urated = 20...42V
 Umax = 60V
 Prated = 33.6W
 ta = -20...45°C
PRI **UN** = 220...240V~
 In = 180...160mA
 fn = 50/60 Hz
 λ = -0.81-0.97
SELV UK
 OUTPUT

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

VSL LIGHTING SOLUTIONS **S727 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
ECXe 800.670
 Ref.-No. 187423
 Made in China
SEC $t_c = 80^\circ\text{C}$
 Urated = 30...50V
 Umax = 60V
 Prated = 40W
 ta = -20...45°C
PRI **UN** = 220...240V~
 In = 215...180mA
 fn = 50/60 Hz
 λ = -0.83-0.97
SELV UK
 OUTPUT

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

VSL LIGHTING SOLUTIONS **S727 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
ECXe 1050.671
 Ref.-No. 187424
 Made in China
SEC $t_c = 85^\circ\text{C}$
 Urated = 20...42V
 Umax = 60V
 Prated = 44.1W
 ta = -20...45°C
PRI **UN** = 220...240V~
 In = 240...210mA
 fn = 50/60 Hz
 λ = -0.86-0.98
SELV UK
 OUTPUT

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

VSL LIGHTING SOLUTIONS **S727 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
ECXe 1400.692
 Ref.-No. 187474
 Made in China
SEC $t_c = 85^\circ\text{C}$
 Urated = 20...42V
 Umax = 60V
 Prated = 59W
 ta = -20...45°C
PRI **UN** = 220...240V~
 In = 300...250mA
 fn = 50/60 Hz
 λ = -0.90-0.99
SELV UK
 OUTPUT

Iout (mA)	Pin1	Pin2
1100	OFF	OFF
1200	OFF	ON
1300	ON	OFF
1400	ON	ON

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

DIP switch settings

187419 / ECXe 700.666					
Pin		Output	Current	Voltage	Factory-
1	2	W	mA	V	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	V	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	V	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		

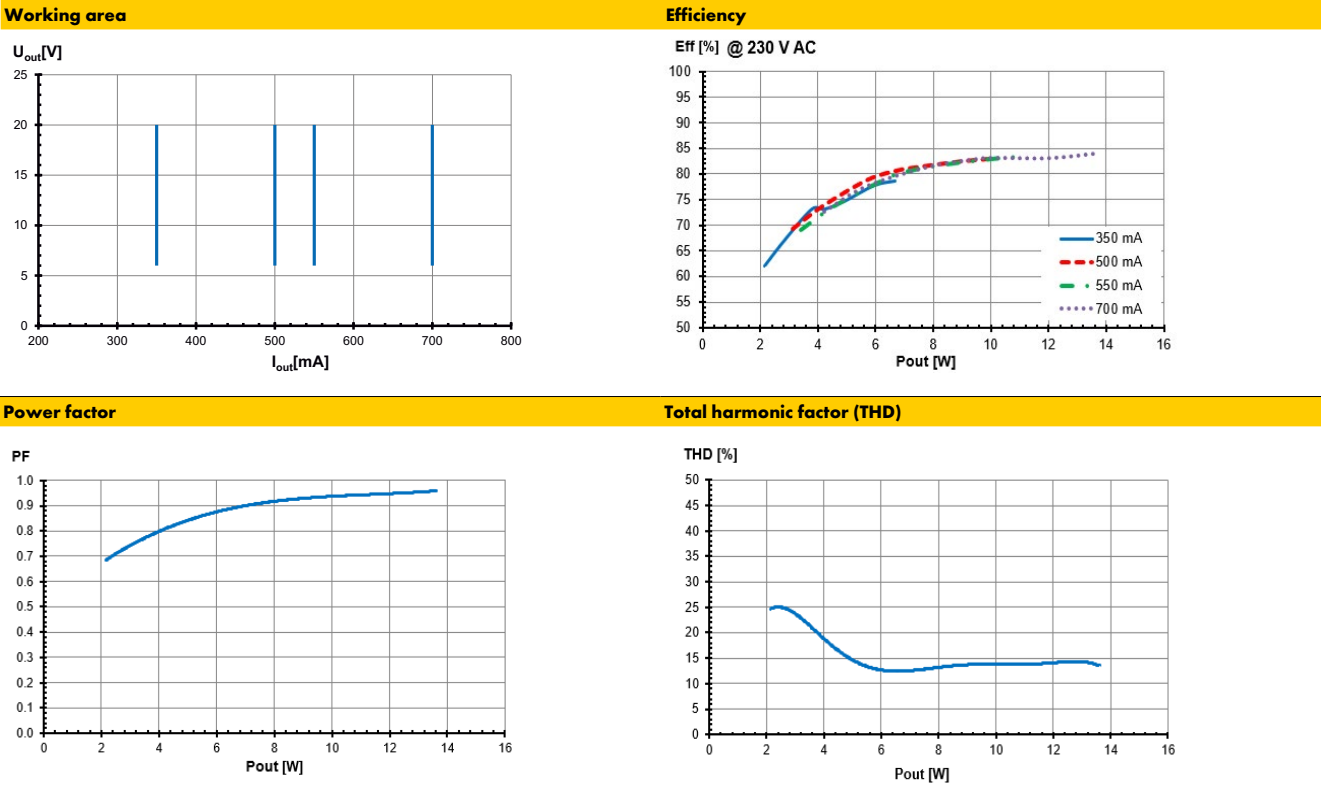
187422/ ECXe 800.669					
Pin		Output	Current	Voltage	Factory-
1	2	W	mA	V	settings (mA)
OFF	OFF	27,3	650	20-42	650
OFF	ON	29,4	700		
ON	OFF	31,5	750		
ON	ON	33,6	800		

187423/ ECXe 800.670					
Pin		Output	Current	Voltage	Factory-
1	2	W	mA	V	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	V	settings (mA)
OFF	OFF	37,8	900	20-42	900
OFF	ON	39,9	950		
ON	OFF	42	1000		
ON	ON	44,1	1050		

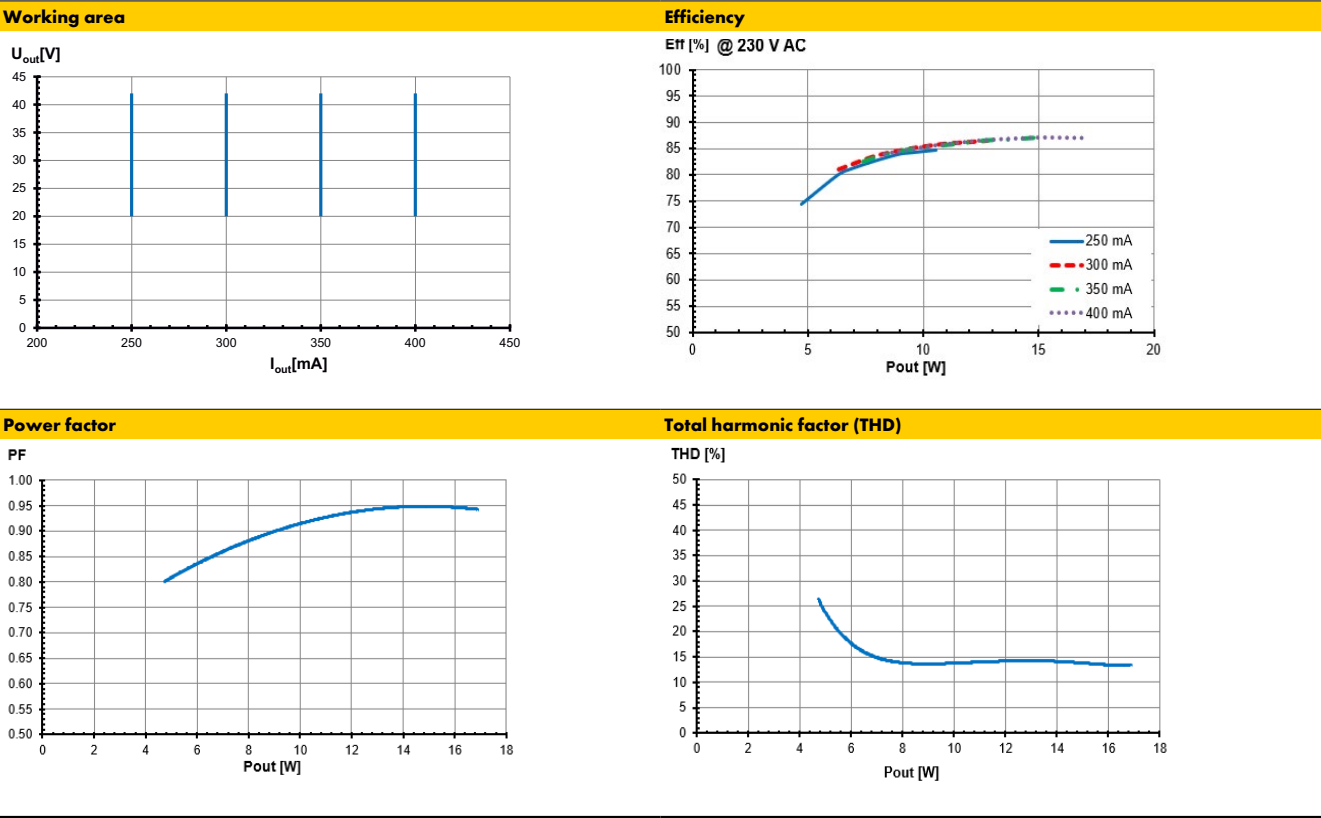
187474/ ECXe 1400.692					
Pin		Output	Current	Voltage	Factory-
1	2	W	mA	V	settings (mA)
OFF	OFF	46,2	1100	20-42	1100
OFF	ON	50,4	1200		
ON	OFF	54,6	1300		
ON	ON	58,8	1400		

Typ. performance graphs for 187419 / Type ECXe 700.666

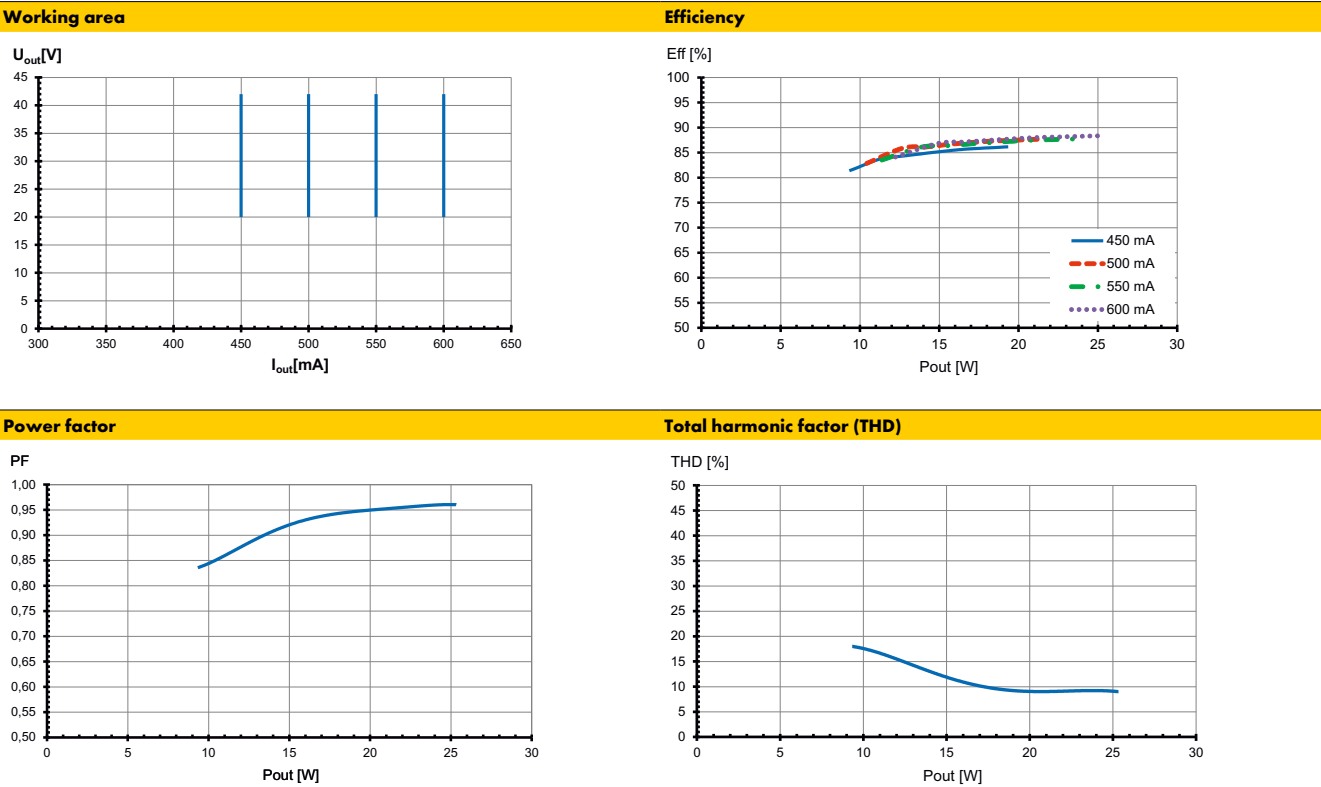


The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Typ. performance graphs for 187420 / Type ECXe 400.667

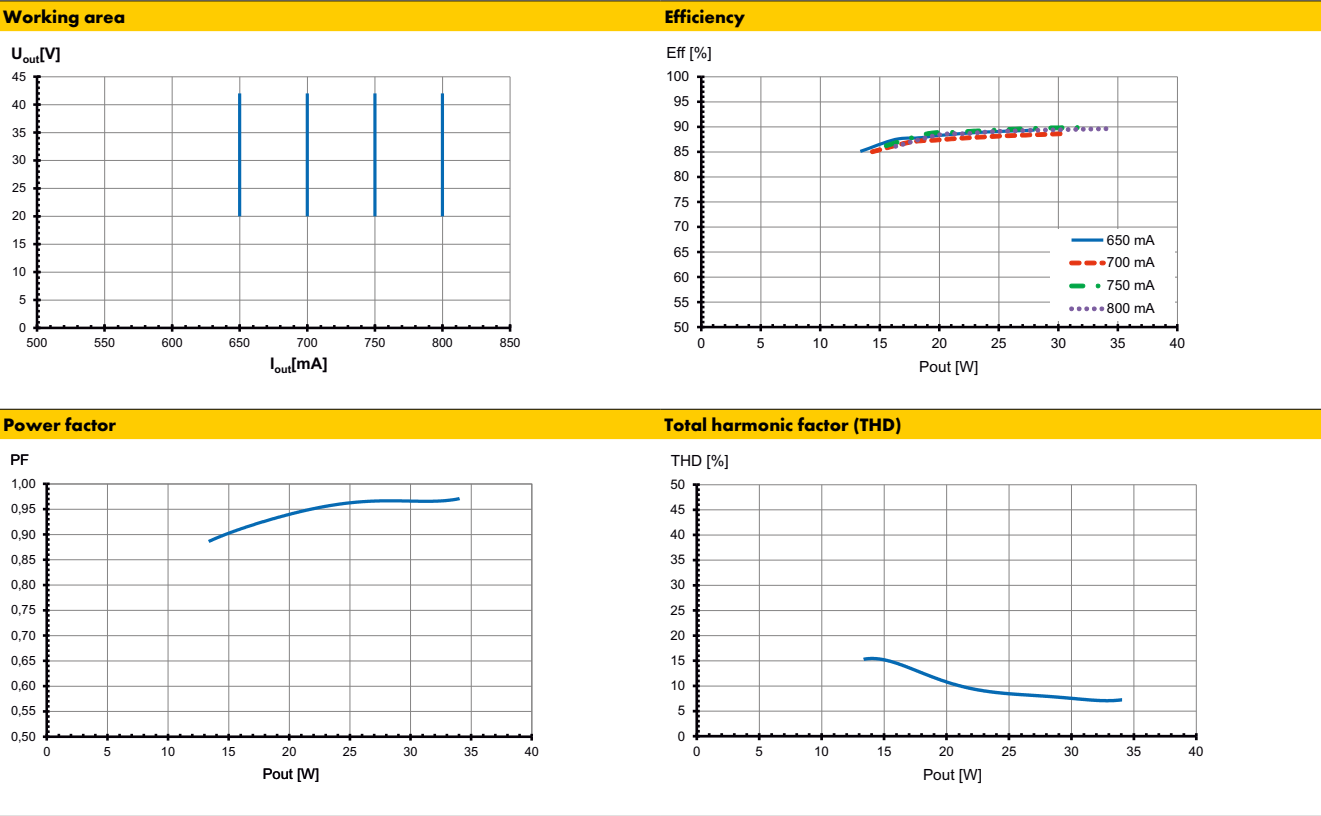


Typ. performance graphs for 187421 / Type ECXe 600.668

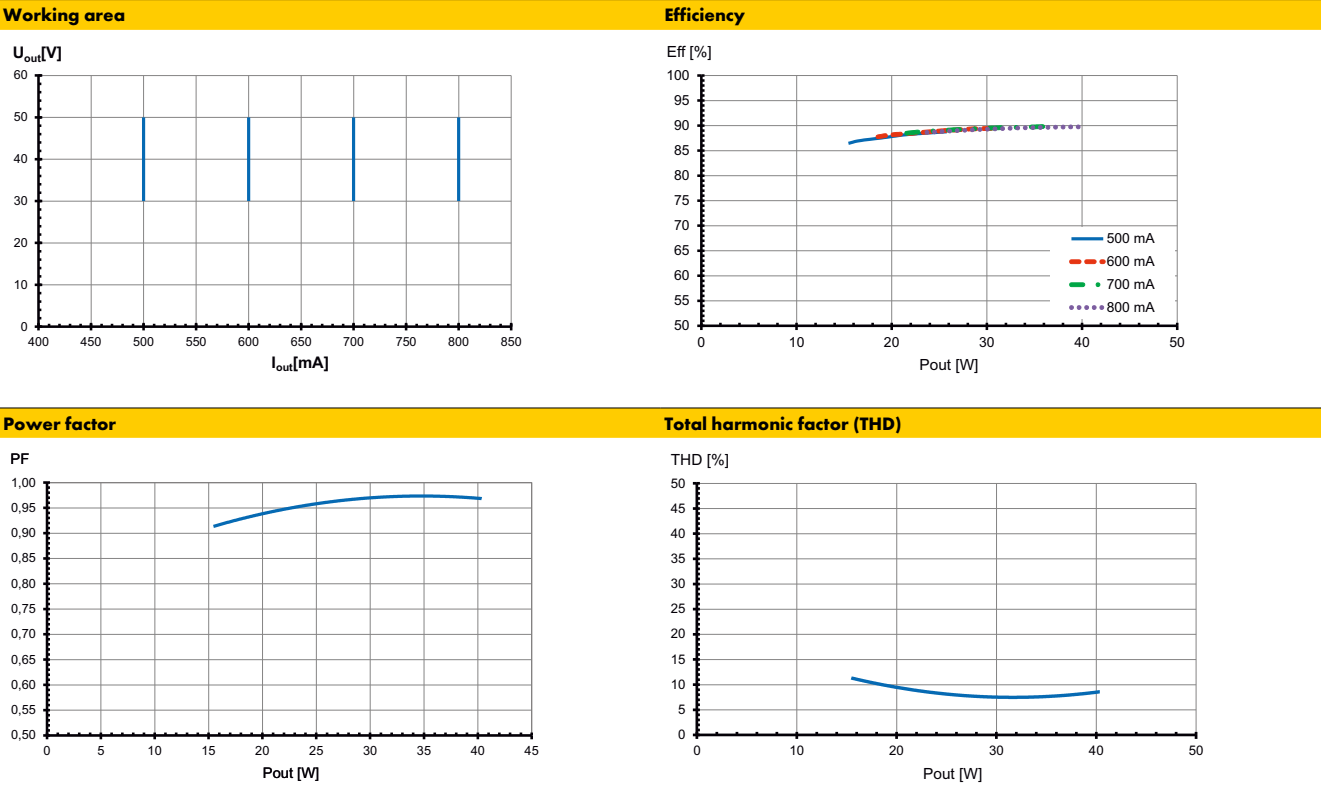


The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Typ. performance graphs for 187422 / Typ ECXe 800.669

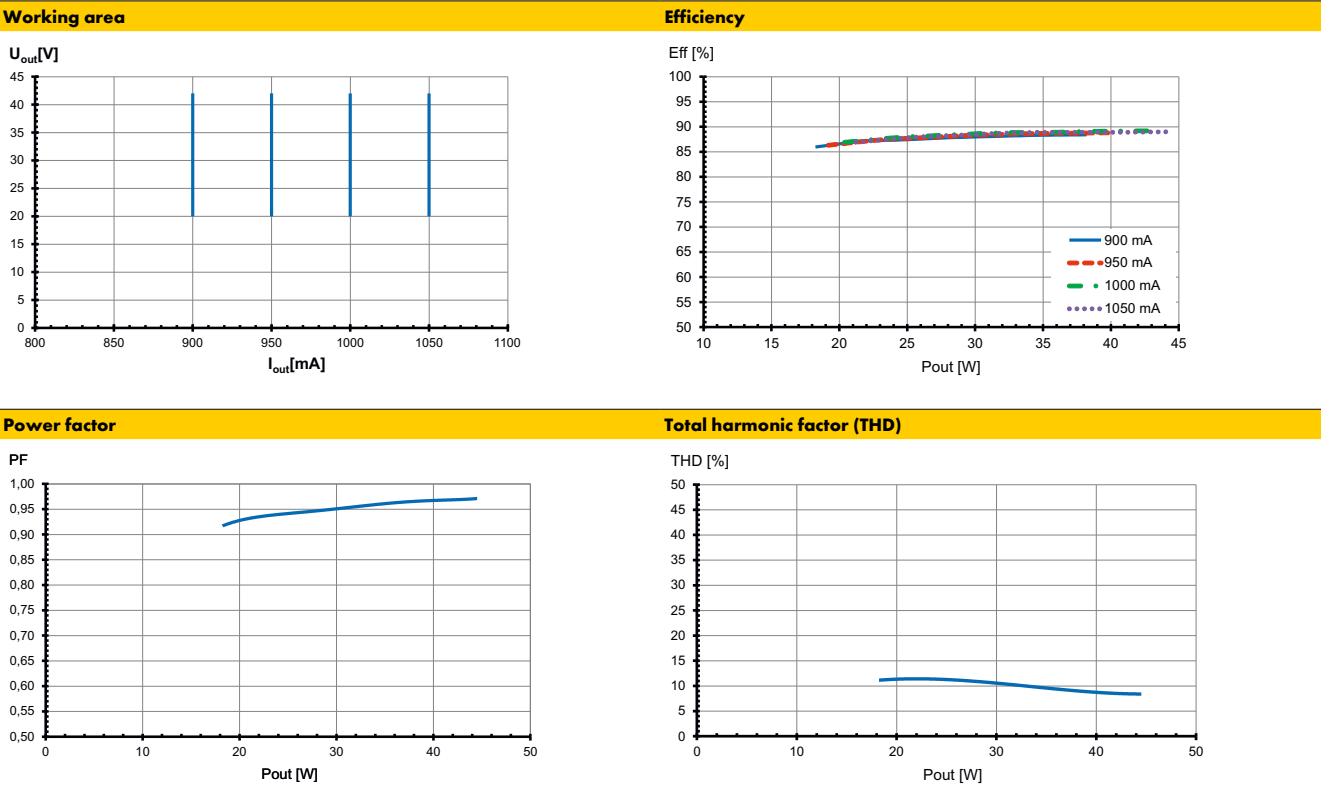


Typ. performance graphs for 187423 / Typ ECXe 800.670

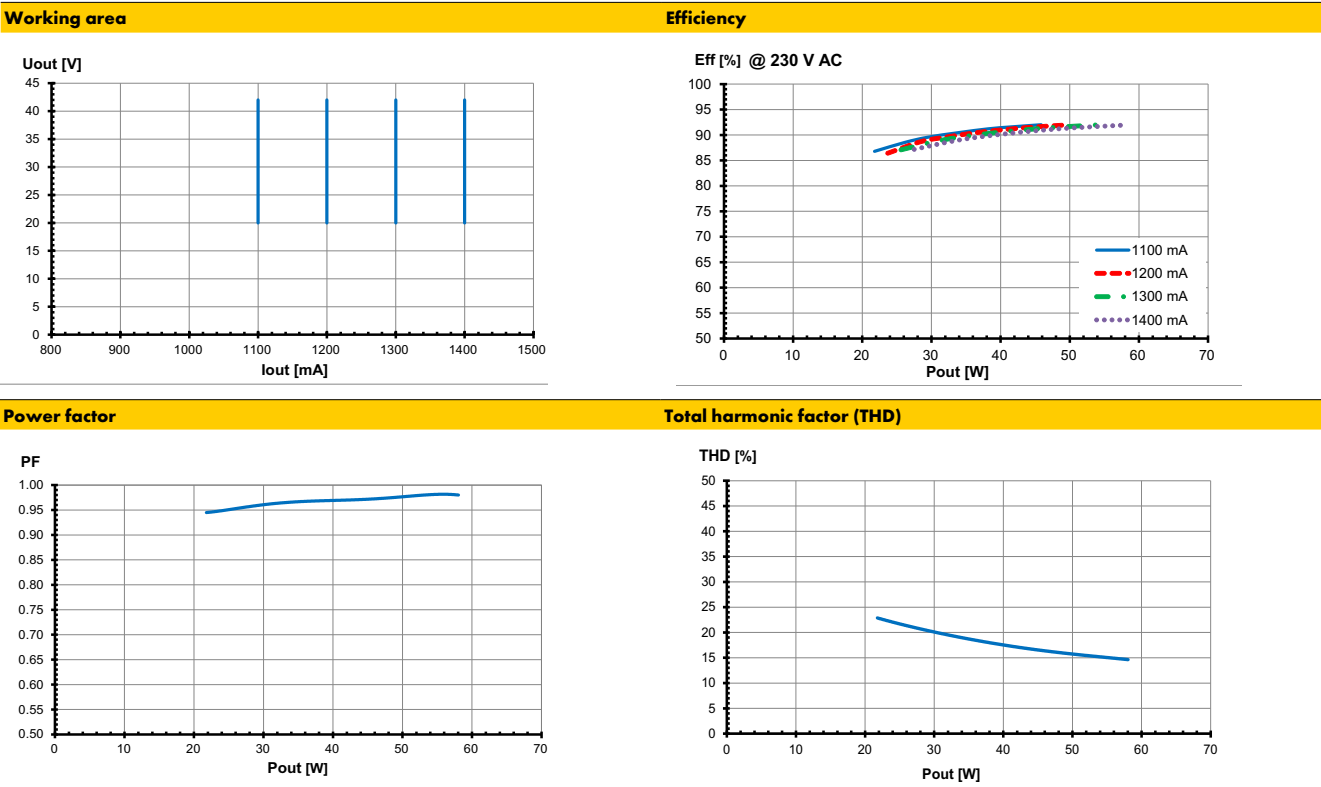


The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Typ. performance graphs 187424 / Type ECXe 800.671



Typ. performance graphs for 187474 / Type ECXe 1400.692



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

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
($< 60 \text{ V DC}$).
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.
- 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.

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

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

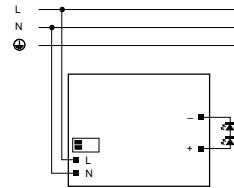
Mechanical mounting

- 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 ≥ 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: 0,5-1,5mm² PVC cable
independent: 0,75-1,5mm² 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 Ω (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
ECXe 700.666	187419	22	28	35	36	47	58
ECXe 400.667	187420	21	28	35	36	47	58
ECXe 600.668	187421	21	28	34	35	46	57
ECXe 800.669	187422	15	19	24	25	32	40
ECXe 800.670	187423	13	17	21	22	29	35
ECXe 1050.671	187424	16	21	25	27	35	43
ECXe 1400.692	187474	9	11	14	15	19	24

- 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.