

CC LINEAR DIP SWITCH



EASYLINE DIP SWITCH L-LV

187547, 187548, 187549, 187550

Typical Applications

Built-in in linear luminaires for

- Office lighting
- Industry Lighting



EasyLine DIP switch L-LV

- **SELECTABLE OUTPUT CURRENT VIA DIP SWITCH**
- **VERY LOW RIPPLE CURRENT: < 3%**
- **ENEC APPROVED**
- **LONG SERVICE LIFE:
UP TO 100,000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**



EasyLine DIP switch L-LV

Product features

- Linear casing shape

Functions

- Selectable current output via DIP switch

Electrical features

- Mains voltage: 220–240 V $\pm 10\%$
- Mains frequency: 50–60 Hz
- DC operation: 176–280 V
- Push-in terminals: 0.5–1.5 mm²
- Power factor at full load: 0.95
- Max. working voltage (U_{OUT}): 60 V
- Secondary side switching of LED modules is not allowed.

Safety features

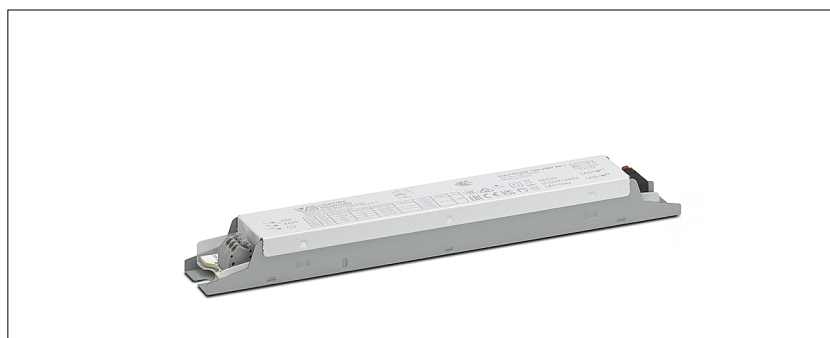
- Protection against transient main peaks up to 2 kV (between L and N) and up to 2 kV (between L, N and PE)
- Electronic short-circuit protection
- Overload protection
- Protection against "no load" operation
- Degree of protection: IP20
- Protection class I

Packaging units

Ref. No.	Packaging unit		
	Pieces per box	Pieces per pallet	Weight g
187547	60	3000	118
187548	60	3000	130
187549	60	3000	139
187550	64	2560	187

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

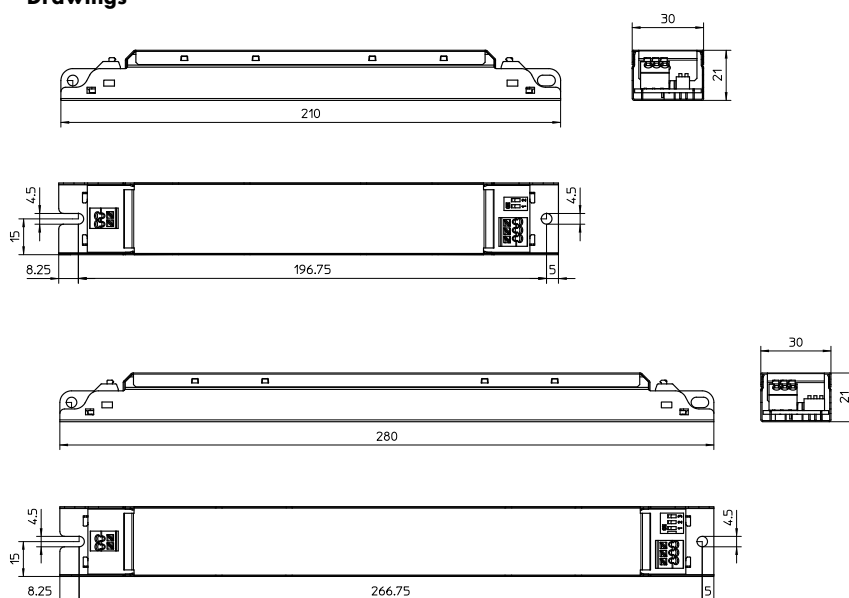
- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 61000-3-2
- EN 62384
- EN 55015



Dimensions

Ref. No.	Casing	Length mm	Width mm	Height mm
187547	M6	210	30	21
187548				
187549				
187550	M7	280	30	21

Drawings



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 / 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 %
10.2	ECXe 350.722	187547	220–240	95–88	13.6 / 118	200	15–51	<8	>86.5	<3
12.8						250				
15.3						300				
17.9						350				
25.5	ECXe 650.723	187548	220–240	17–158	17.4 / 154	500	15–51	<4	>91	<1
28						550				
30.6						600				
33.2						650				
35.7	ECXe 1050.724	187549	220–240	203–197	16.8 / 162	700	15–51	<4	>91	<1
38.3						750				
40.8						800				
40.8						850				
41.4						900	15–48			
41.8						950	15–46			
40						1000	15–44			
39.9						1050	15–40			
58.7	ECXe 1500.725	187550	220–240	312–284	36.7 / 188	1150	15–51	<4	>91.5	<1
60						1200	15–50			
60						1250	15–48			
59.8						1300	15–46			
60.8						1350	15–45			
58.8						1400	15–44			
60.9						1450	15–42			
60						1500	15–40			

Maximum ratings

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

Ref. No.	Ambient temperature		Operation humidity		Storage temperature		Storage humidity		Max. operation temperature at t _c point °C	Degree of protection
	range		range		range		range			
	°C min.	°C max.	% min.	% max.	°C min.	°C max.	% min.	% max.		
187547	-20	+60	20	90	-25	+60	20	90	+80	IP20
187548									+85	IP20
187549									+80	IP20
187550									+90	IP20

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LED Drivers – EasyLine DIP switch L-LV

DIP switch settings

Pin 1	Pin 2	Operating current (mA)	
		187547	187548
OFF	OFF	200	500
ON	OFF	250	550
OFF	ON	300	600
ON	ON	350	650

Pin 1	Pin 2	Pin 3	Operating current (mA)	
			187549	187550
OFF	OFF	OFF	700	1150
ON	OFF	OFF	750	1200
OFF	ON	OFF	800	1250
ON	ON	OFF	850	1300
OFF	OFF	ON	900	1350
ON	OFF	ON	950	1400
OFF	ON	ON	1000	1450
ON	ON	ON	1050	1500

Operating Life

at operation temperatures at t_c point

Operation	Ref. No.							
current	187547	187548	187549	187550	187547	187548	187549	187550
All	80°C	70°C	85°C	75°C	80°C	70°C	90°C	80°C
hrs.	50,000	100,000	50,000	100,000	50,000	100,000	50,000	100,000

Product labels

**Vossloh-Schwabe Deutschland GmbH**
Stuttgarter Straße 61/1, 73614 Schorndorf
Electronic Controlgear for LED
Type ECXe 350.722
Ref.-No. 187547
Made in China

INPUT
UN= 220...240 V~
IN = 95...88 mA
fN = 50...60 Hz
 $\lambda = 0,75C...0,95$
0,5...1,5 μ

OUTPUT

Pin1	Pin2	Irated(mA)	Prated(W)	Urated(V)	Uout(V)
OFF	OFF	200	10,2	15...51	59
ON	OFF	250	12,8	15...51	
OFF	ON	300	15,3	15...51	
ON	ON	350	17,9	15...51	

 $t_c=80^\circ C$ $t_a=60^\circ C$

SELV
05
CE UK CA
110
EL
SEC
LED+
LED-
0,5...1,5 μ
DIP setting: 1 ON 2 OFF

**Vossloh-Schwabe Deutschland GmbH**
Stuttgarter Straße 61/1, 73614 Schorndorf
Electronic Controlgear for LED
Type ECXe 650.723
Ref.-No. 187548
Made in China

INPUT
UN= 220...240 V~
IN = 171...158 mA
fN = 50...60 Hz
 $\lambda = 0,8C...0,95$
0,5...1,5 μ

OUTPUT

Pin1	Pin2	Irated(mA)	Prated(W)	Urated(V)	Uout(V)
OFF	OFF	500	25,5	15...51	59
ON	OFF	550	28	15...51	
OFF	ON	600	30,6	15...51	
ON	ON	650	33,2	15...51	

 $t_c=85^\circ C$ $t_a=60^\circ C$

SELV
05
CE UK CA
110
EL
SEC
LED+
LED-
0,5...1,5 μ
DIP setting: 1 ON 2 OFF

**Vossloh-Schwabe Deutschland GmbH**
Stuttgarter Straße 61/1, 73614 Schorndorf
Electronic Controlgear for LED
Type ECXe 1050.724
Ref.-No. 187549
Made in China

INPUT
UN= 220...240 V~
IN = 203...197 mA
fN = 50...60 Hz
 $\lambda = 0,85C...0,95$
0,5...1,5 μ

OUTPUT

Pin1	Pin2	Pin3	Irated(mA)	Prated(W)	Urated(V)	Uout(V)
OFF	OFF	OFF	700	35,7	15...51	59
ON	OFF	OFF	750	38,3	15...51	
OFF	ON	OFF	800	40,8	15...51	
ON	ON	OFF	850	40,8	15...48	
OFF	OFF	ON	900	41,4	15...46	
ON	OFF	ON	950	41,8	15...44	
OFF	ON	ON	1000	40	15...40	
ON	ON	ON	1050	39,9	15...38	

 $t_c=80^\circ C$ $t_a=60^\circ C$

SELV
05
CE UK CA
110
EL
SEC
LED+
LED-
0,5...1,5 μ
DIP setting: 1 ON 2 OFF 3 OFF

**Vossloh-Schwabe Deutschland GmbH**
Stuttgarter Straße 61/1, 73614 Schorndorf
Electronic Controlgear for LED
Type ECXe 1500.725
Ref.-No. 187550
Made in China

INPUT
UN= 220...240 V~
IN = 312...284 mA
fN = 50...60 Hz
 $\lambda = 0,9C...0,95$
0,5...1,5 μ

$t_c=90^\circ C$ $t_a=60^\circ C$

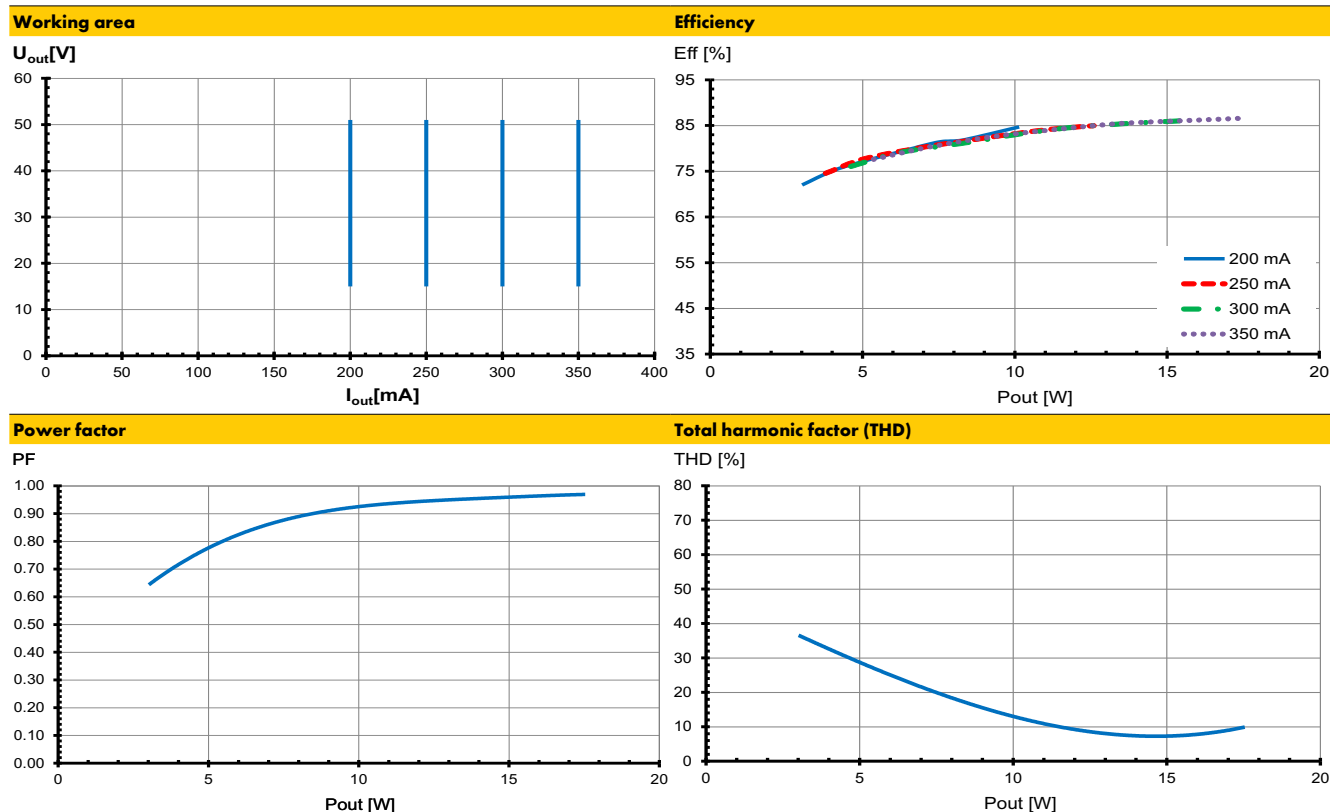
OUTPUT

Pin1	Pin2	Pin3	Irated(mA)	Prated(W)	Urated(V)	Uout(V)
OFF	OFF	OFF	1150	58,7	15...51	59
ON	OFF	OFF	1200	60	15...50	
OFF	ON	OFF	1250	60	15...48	
ON	ON	OFF	1300	59,8	15...46	
OFF	OFF	ON	1350	60,8	15...45	
ON	OFF	ON	1400	58,8	15...42	
OFF	ON	ON	1450	60,9	15...42	
ON	ON	ON	1500	60	15...40	

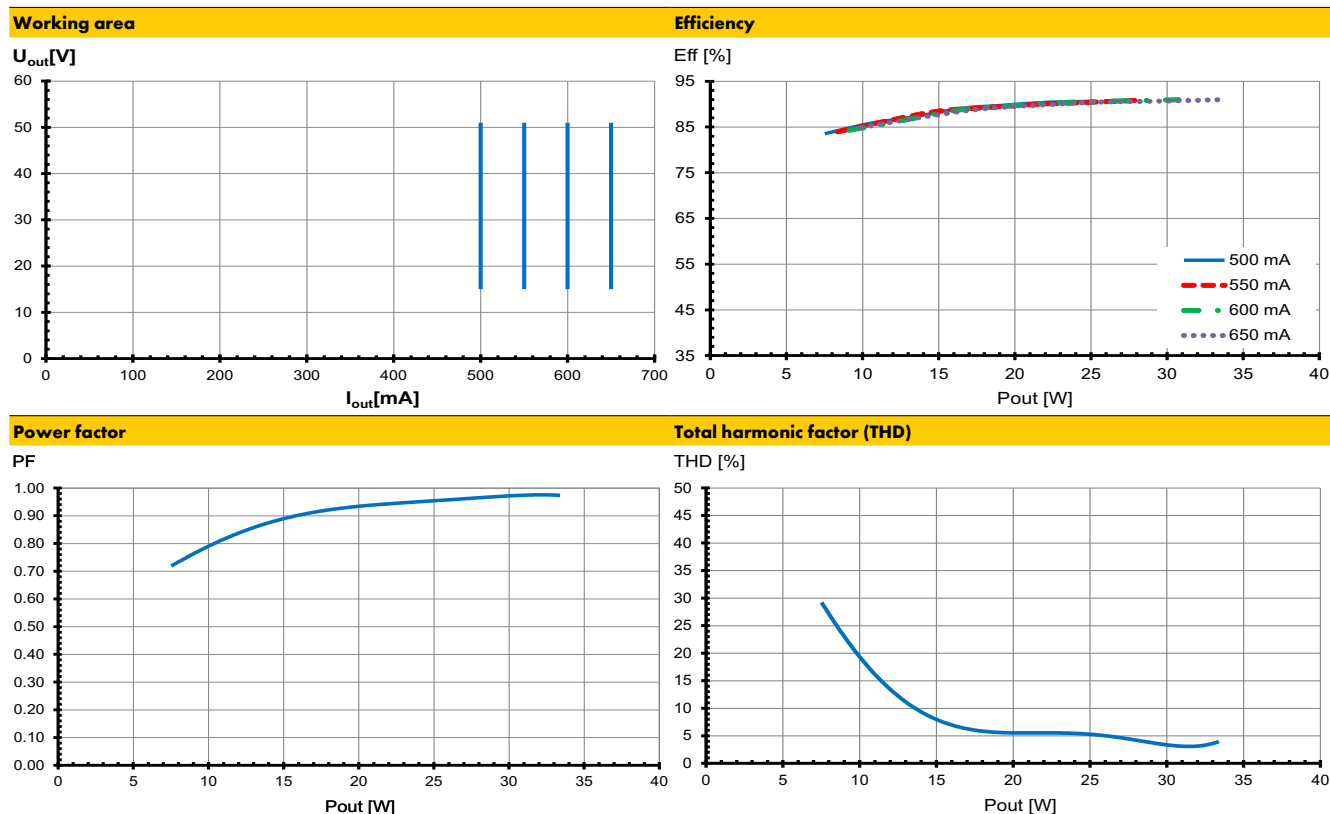
SELV
05
CE UK CA
110
EL
SEC
LED+
LED-
0,5...1,5 μ
DIP setting: 1 ON 2 OFF 3 OFF

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Typ. performance graphs for 187547 / Type ECXe 350.722

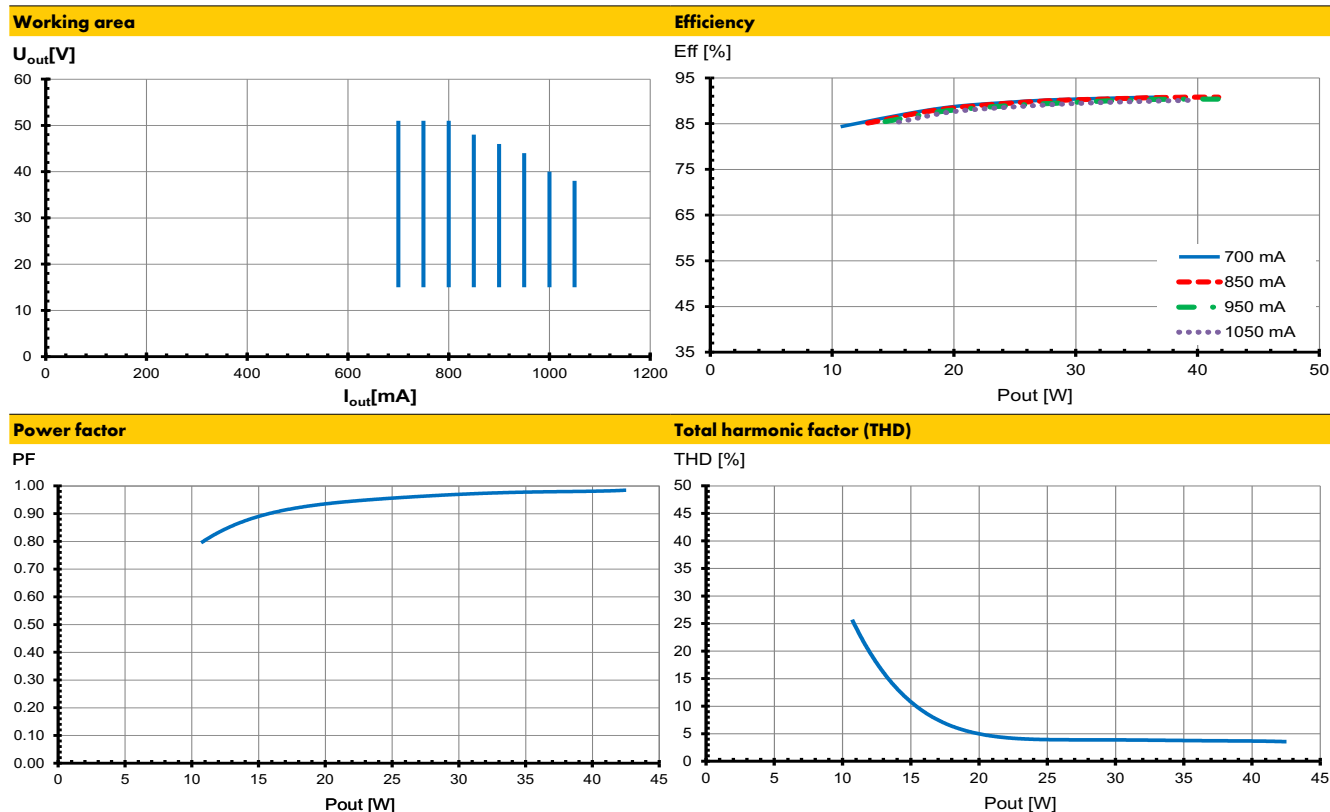


Typ. performance graphs for 187548 / Type ECXe 650.723

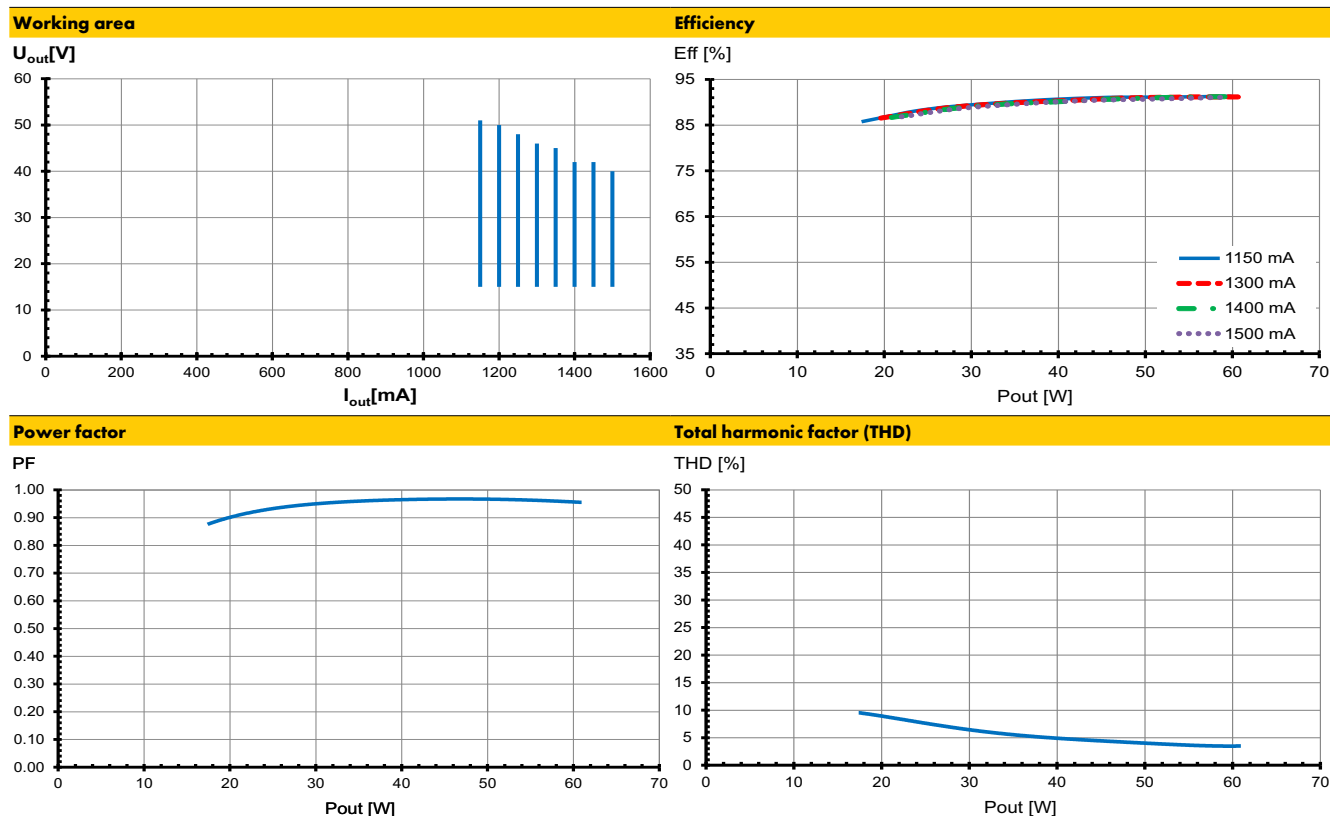


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Typ. performance graphs for 187549 / Type ECXe 1050.724



Typ. performance graphs for 187550 / Type ECXe 1500.725



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Safety functions

- Transient mains peaks protection:
Values are in compliance with EN 61547
(interference immunity).
Surges between L–N: up to 2 kV
Surges between L/N–PE: up to 2 kV
- Short-circuit protection: The control gears are protected against permanent short-circuit with automatic restart function.
- Overload protection: The control gears only work in range of rated output power and voltage problemfree.
Please check before switch-on mains power supply that the selected LED load is suitable (see Electrical Characteristics on 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.

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

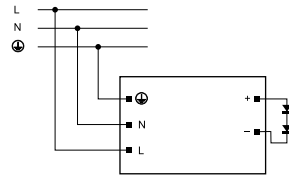
Mechanical mounting

- Mounting position: Built-in: Any position inside a luminaire is allowed
Independent application: Drivers are not allowed to use for independent applications
- Mounting location: LED drivers are designed for integration into luminaires or comparable devices.
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

Electrical installation

- Connection terminals: Push-in terminals for rigid conductors with a section of 0.5–1.5 mm²
- 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.
- 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 has to be within the tolerances which are mentioned in the table "Electrical Characteristics" in this 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
ECXe 350.722	187547	52	68	84	87	114	140
ECXe 650.723	187548	31	40	49	51	67	82
ECXe 1050.724	187549	30	39	48	44	58	71
ECXe 1500.725	187550	11	15	19	19	25	31

- 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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