

CC EASYLINE DIP SWITCH S-100 V IP



EASYLINE DIP SWITCH S-100 V IP

187242, 187243, 187244

Typical Applications

Built-in in compact luminaires

- Street lighting
- Industrial lighting



EASYLINE DIP SWITCH S-100 V IP

- **DEGREE OF PROTECTION: IP67**
- **SELECTABLE OUTPUT CURRENT VIA DIP SWITCH**
- **SURGE PROTECTION: UP TO 10 KV**
- **PREASSEMBLED CONNECTION LEADS**
- **LONG SERVICE LIFE: UP TO 100,000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**



EasyLine DIP switch S-100 V IP

Product features

- Compact casing shape

Functions

- Selectable current output via DIP switch

Electrical features

- Mains voltage: 100–240 V $\pm 10\%$
- Mains frequency: 50/60 Hz
- Pre-assembled connection leads:
primary: 3x1 mm² (AWG17), length: 300 mm
secondary: 2x1 mm² (AWG17), length: 300 mm
- Power factor at full load: > 0.95
- Open circuit voltage (U_{max}):

Ref. No.	U_{max} (V)
187242	60
187243	66
187244	65

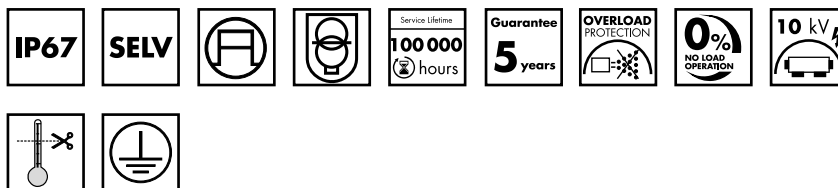
- Secondary side switching of LED modules is not allowed.

Safety features

- Protection against transient main peaks
up to 6 kV (between L and N) and
up to 10 kV (between L/N and PE)
- Electronic short-circuit protection
- Overload protection
- Input over voltage protection
- Overtemperature protection
- Protection against "no load" operation
- Degree of protection: IP67
- Protection class I
- SELV

Packaging units

Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight Kg
187242	20	32	7.7
187243	20	32	8.2
187244	20	32	10.3



Applied standards

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



Dimensions

Ref. No.	Casing	Length mm	Width mm	Height mm
187242	M94	108	64	32
187243	M97	116	64	32
187244	M95	140	64	32

Current adjustment



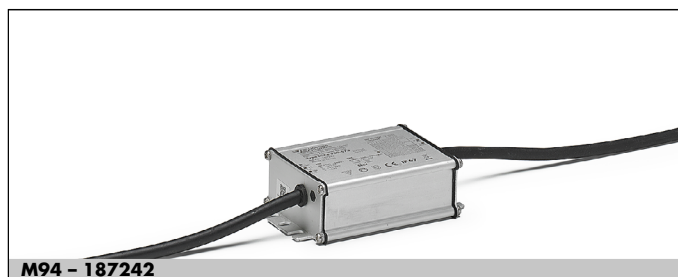
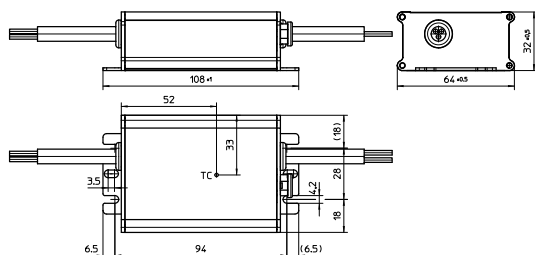
Product guarantee

- 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.

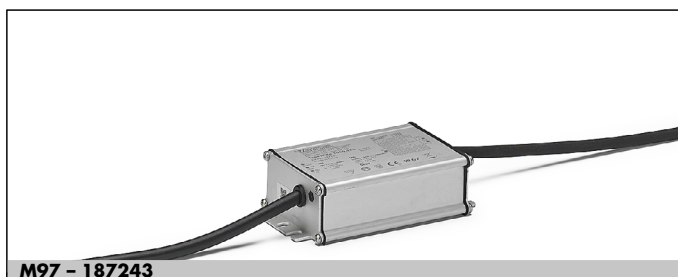
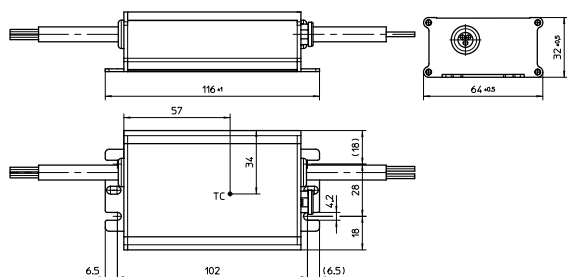
The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Product drawings and photos

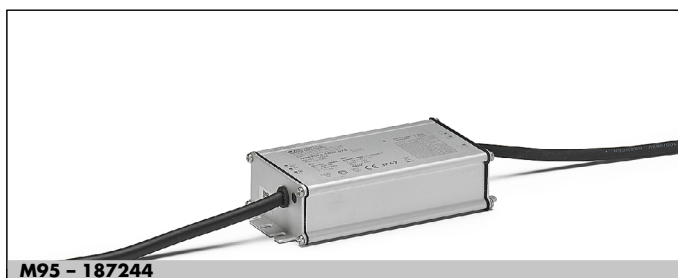
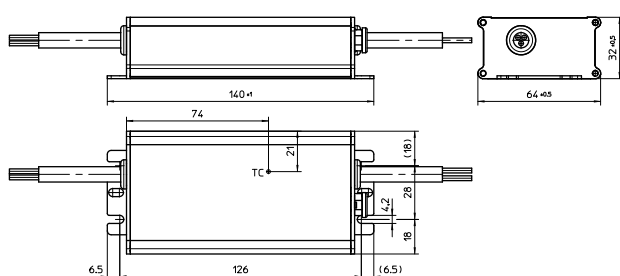
M94



M97



M95



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LED Drivers – EasyLine DIP switch S-100 V IP

Electrical characteristics

Max. output W	Type	Ref. No.	Voltage 50–60 Hz V $\pm 10\%$	Mains current mA	Inrush current A / μ s	Current output DC mA ($\pm 5\%$)	Factory settings mA	Voltage output DC (V)	THD at full load % (230 V)	Efficiency at full load % (230 V)	Ripple 100 Hz %
26	ECXe 700.573	187242	100–240	370–130	25 / 136	350–700	500	20–52	8	87	< 10
40	ECXe 1050.574	187243	100–240	580–190	41 / 200	350–1050	700	20–57	8	88	< 10
60	ECXe 1400.575	187244	100–240	820–280	45 / 225	900–1400	1050	20–57	9	90.5	< 10

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		Operation temperature at t_c point °C		Degree of protection
	°C min.	°C max.	% min.	% max.	°C min.	°C max.	% min.	% max.	t_c (life)	t_c (max.)	
All types	–40	+55	10	95	–40	+85	5	95	+80	+90	IP67

Expected service life time

at operation temperatures at t_c point

Operation current	Ref. No. 187242		187243		187244	
All	80 °C	90 °C	80 °C	90 °C	80 °C	90 °C
hrs.	87,000	40,000	50,000	25,000	59,000	29,000

Product labels

VSL LIGHTING SOLUTIONS
Vossloh-Schwabe Deutschland GmbH
Stuttgarter Straße 61/1, 73614 Schorndorf
Electronic Converter for LED
Type ECXe 700.573
Ref.No. 187242
Made in China

PRI
 $U_N = 100 \dots 240V \sim$
 $I_N = 370 \text{ mA}$
 $f_N = 50/60\text{Hz}$
 $\lambda : 0.65C \dots 0.95$

SEC
 $I_{rated} = 350 \dots 700\text{mA} \sim$
 $U_{rated} = 20 \dots 52V$
 $U_{max} = 60V$
 $P_{out} = 26W$

SELV

DIP SWITCH SETTINGS

1	2	3	Rated (mA)	Rated (W)	Unrated (Vdc)
OFF	OFF	OFF	350	18.2	20-52
ON	OFF	OFF	400	20.8	20-52
OFF	ON	OFF	450	22.4	20-52
ON	ON	OFF	500	25	20-52
OFF	OFF	ON	550	26.1	20-47.5
ON	OFF	ON	600	26.1	20-43.5
ON	ON	OFF	650	26	20-40
ON	ON	ON	700	28.3	20-37.5

SEC
+ ■ Red
– ■ Black

■ L Brown
■ N Blue
■ Y/G

17 ENEC UK CA 110 CE IP67

VSL LIGHTING SOLUTIONS
Vossloh-Schwabe Deutschland GmbH
Stuttgarter Straße 61/1, 73614 Schorndorf
Electronic Converter for LED
Type ECXe 1050.574
Ref.No. 187243
Made in China

PRI
 $U_N = 100 \dots 240V \sim$
 $I_N = 580 \text{ mA}$
 $f_N = 50/60\text{Hz}$
 $\lambda : 0.65C \dots 0.95$

SEC
 $I_{rated} = 350 \dots 1050\text{mA} \sim$
 $U_{rated} = 20 \dots 57V$
 $U_{max} = 66V$
 $P_{out} = 40W$

SELV

DIP SWITCH SETTINGS

1	2	3	Rated (mA)	Rated (W)	Unrated (Vdc)
OFF	OFF	OFF	350	20	20-57
ON	OFF	OFF	500	28.5	20-57
OFF	ON	OFF	550	31.4	20-57
ON	ON	OFF	700	40	20-47
ON	ON	ON	850	40	20-47
OFF	ON	ON	900	40	20-44.5
ON	ON	ON	1050	40	20-38

SEC
+ ■ Red
– ■ Black

■ L Brown
■ N Blue
■ Y/G

17 ENEC UK CA 110 CE IP67

VSL LIGHTING SOLUTIONS
Vossloh-Schwabe Deutschland GmbH
Stuttgarter Straße 61/1, 73614 Schorndorf
Electronic Converter for LED
Type ECXe 1400.575
Ref.No. 187244
Made in China

PRI
 $U_N = 100 \dots 240V \sim$
 $I_N = 820 \text{ mA}$
 $f_N = 50/60\text{Hz}$
 $\lambda : 0.7C \dots 0.95$

SEC
 $I_{rated} = 900 \dots 1400\text{mA} \sim$
 $U_{rated} = 20 \dots 57V$
 $U_{max} = 65V$
 $P_{out} = 60W$

SELV

DIP SWITCH SETTINGS

1	2	3	Rated (mA)	Rated (W)	Unrated (Vdc)
OFF	OFF	OFF	900	51.3	20-57
OFF	ON	OFF	950	54.15	20-57
ON	OFF	OFF	1050	60	20-54.5
ON	ON	OFF	1100	60	20-50
OFF	ON	ON	1200	60	20-50
ON	ON	OFF	1250	60	20-48
ON	ON	ON	1350	60	20-44.5
ON	ON	ON	1400	60	20-43

SEC
+ ■ Red
– ■ Black

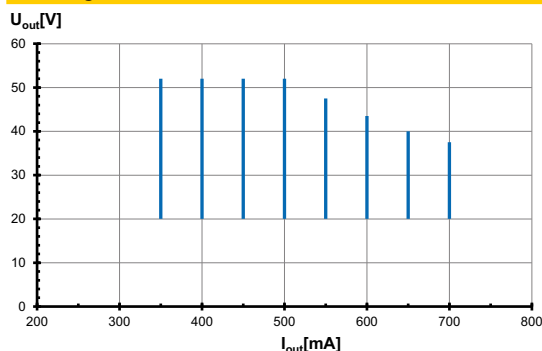
■ L Brown
■ N Blue
■ Y/G

17 ENEC UK CA 110 CE IP67

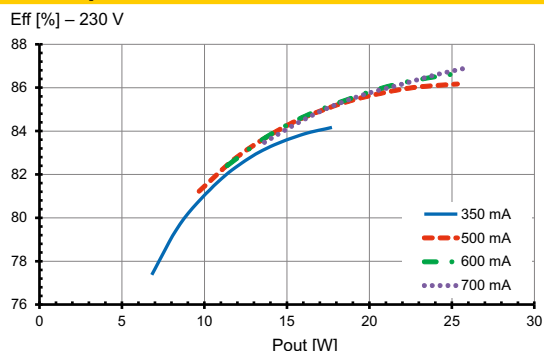
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Typ. performance graphs for 187242 / Type ECXe 700.573

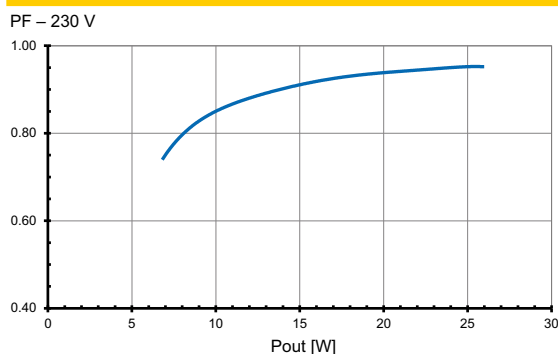
Working area



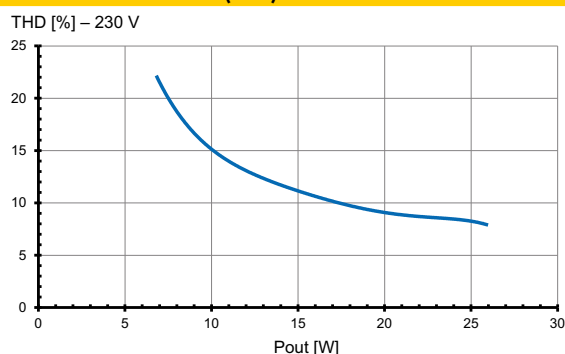
Efficiency at 230 V



Power factor at 230 V

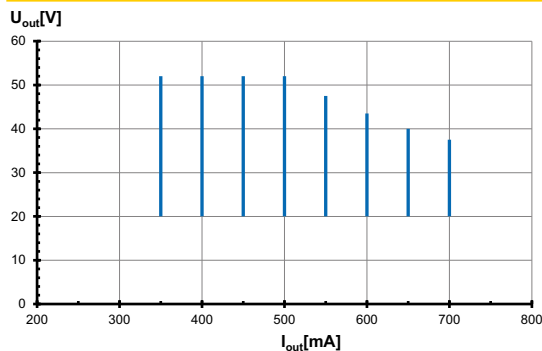


Total harmonic factor (THD) at 230 V

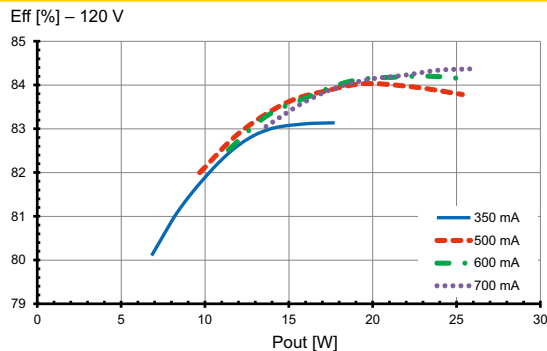


Typ. performance graphs for 187242 / Type ECXe 700.573

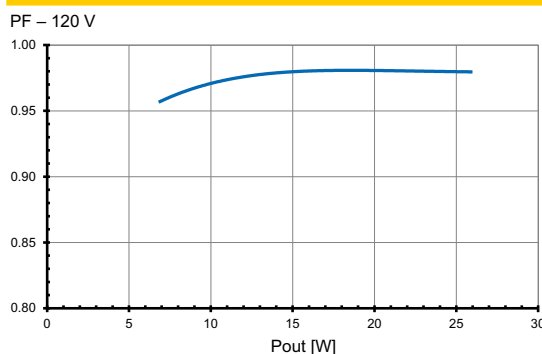
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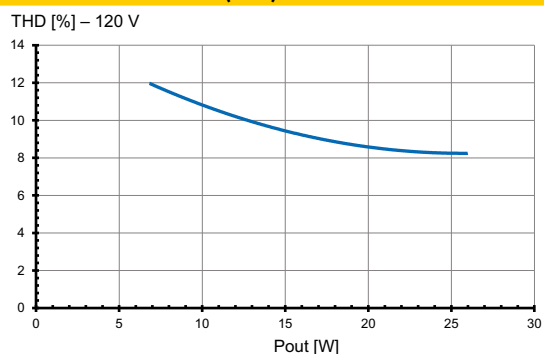
Efficiency at 120 V



Power factor at 120 V



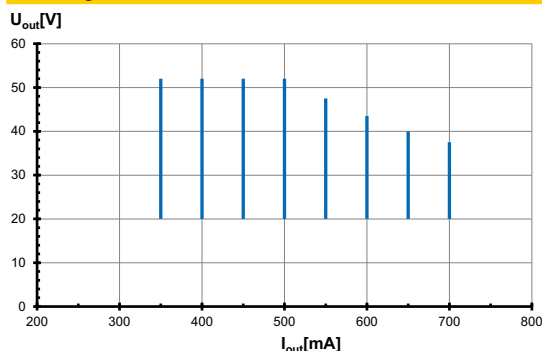
Total harmonic factor (THD) at 120 V



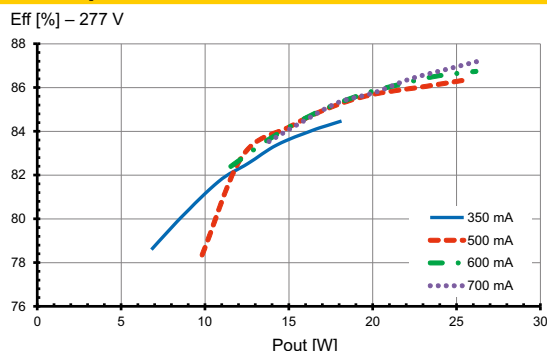
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Typ. performance graphs for 187242 / Type ECXe 700.573

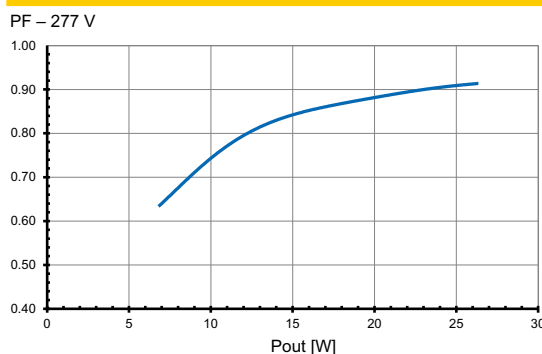
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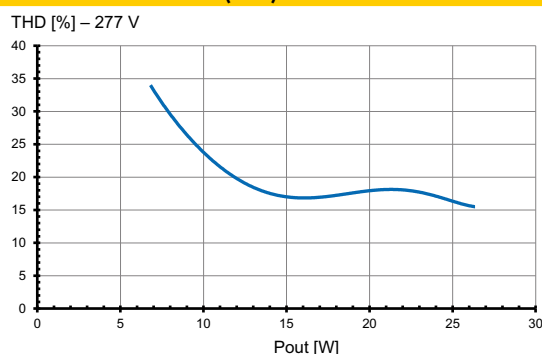
Efficiency at 277 V



Power factor at 277 V

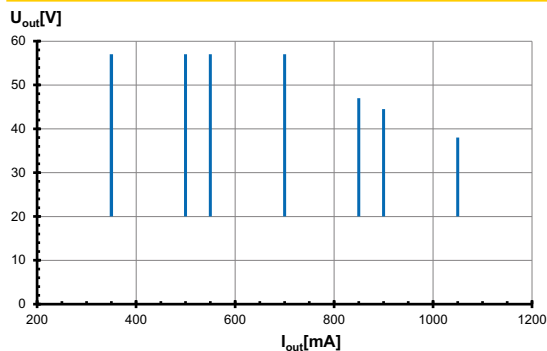


Total harmonic factor (THD) at 277 V

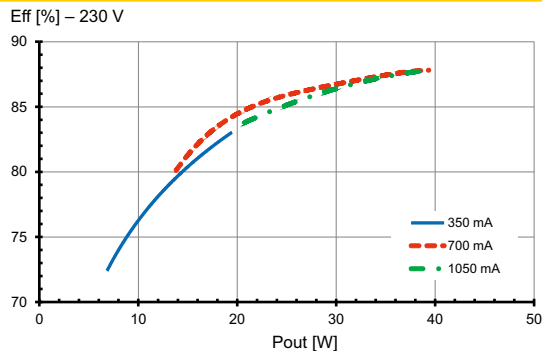


Typ. performance graphs for 187243 / Type ECXe 1050.574

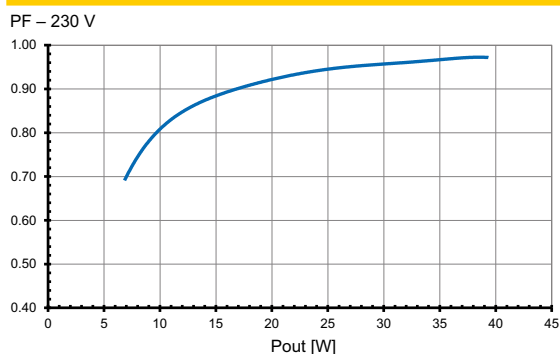
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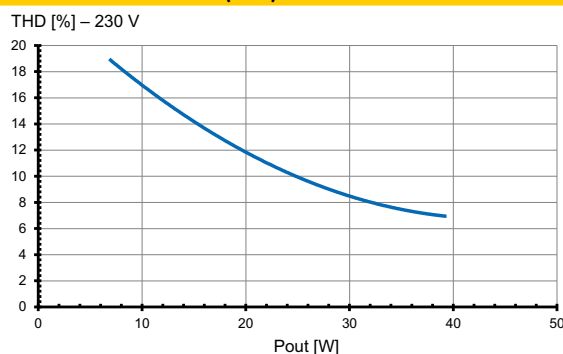
Efficiency at 230 V



Power factor at 230 V



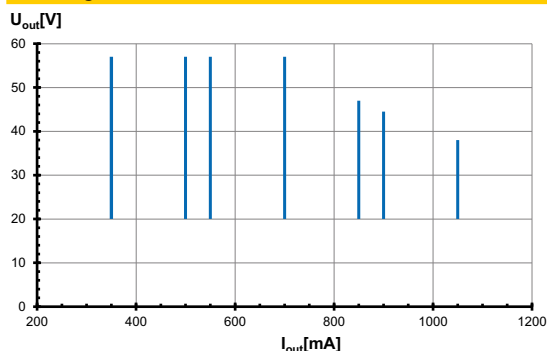
Total harmonic factor (THD) at 230 V



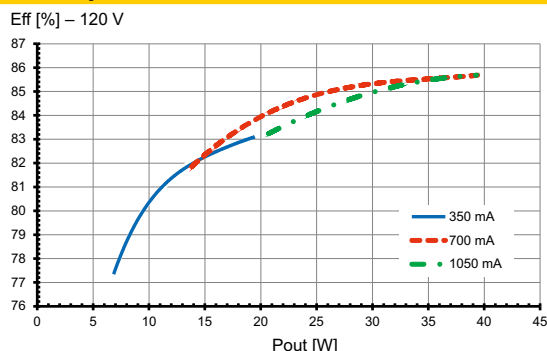
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Typ. performance graphs for 187243 / Type ECXe 1050.574

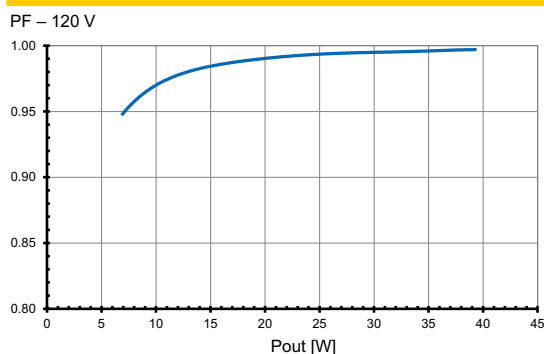
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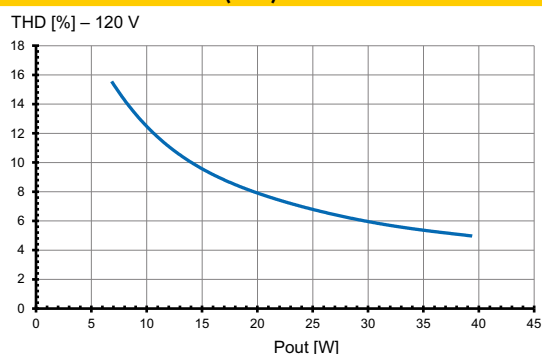
Efficiency at 120 V



Power factor at 120 V

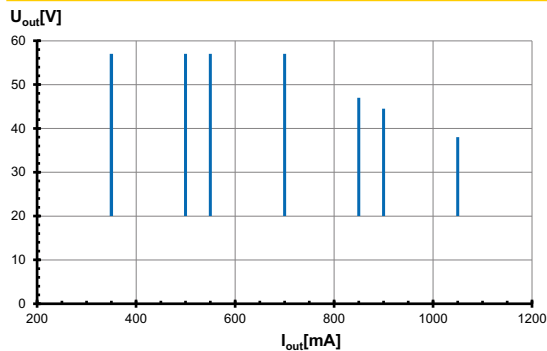


Total harmonic factor (THD) at 120 V

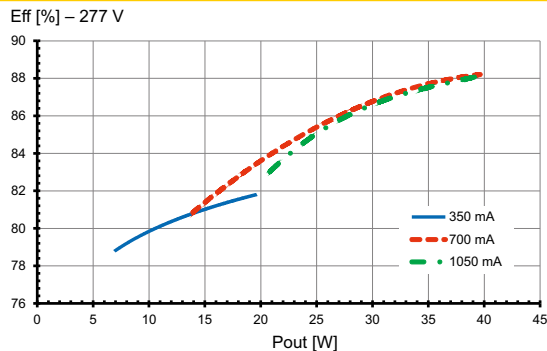


Typ. performance graphs for 187243 / Type ECXe 1050.574

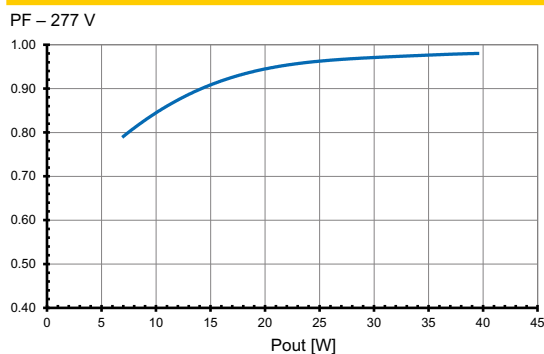
Working area



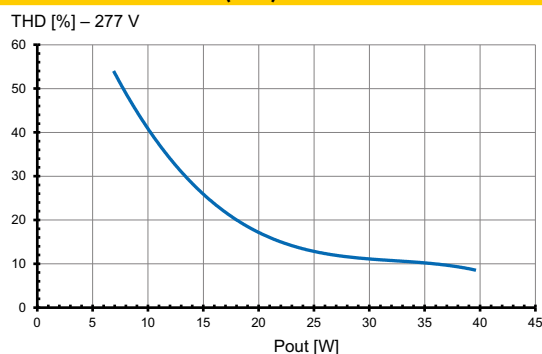
Efficiency at 277 V



Power factor at 277 V



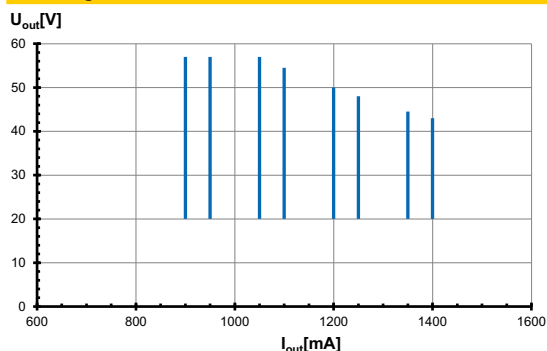
Total harmonic factor (THD) at 277 V



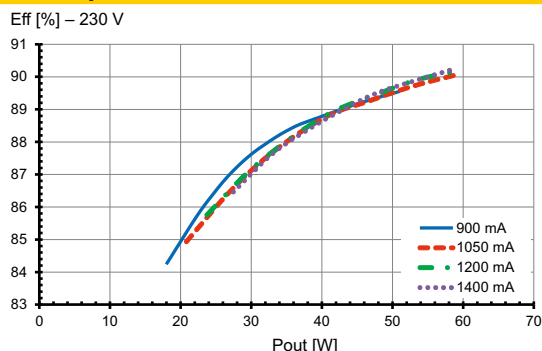
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Typ. performance graphs for 187244 / Type ECXe 1400.575

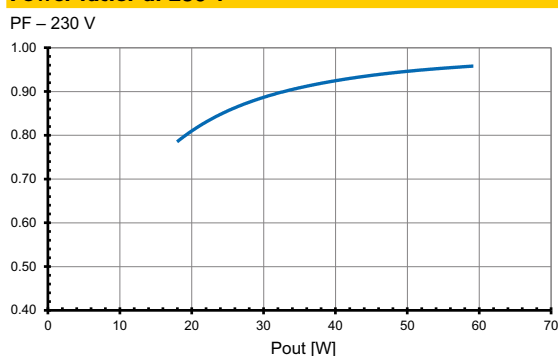
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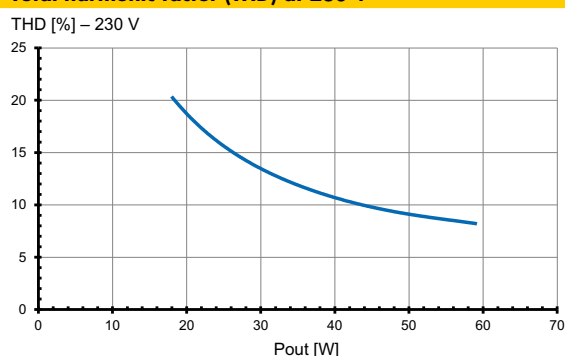
Efficiency at 230 V



Power factor at 230 V

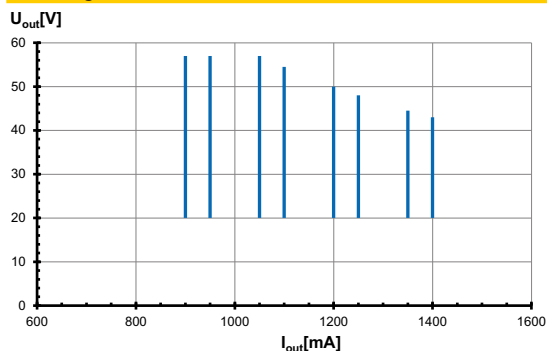


Total harmonic factor (THD) at 230 V

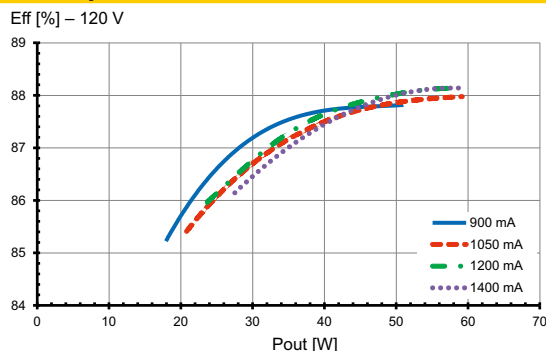


Typ. performance graphs for 187244 / Type ECXe 1400.575

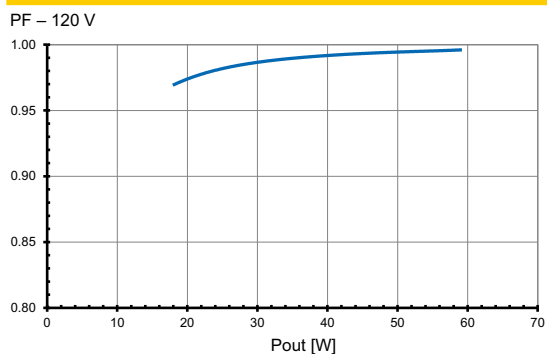
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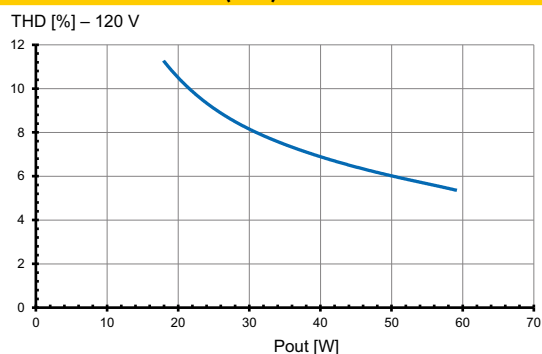
Efficiency at 120 V



Power factor at 120 V



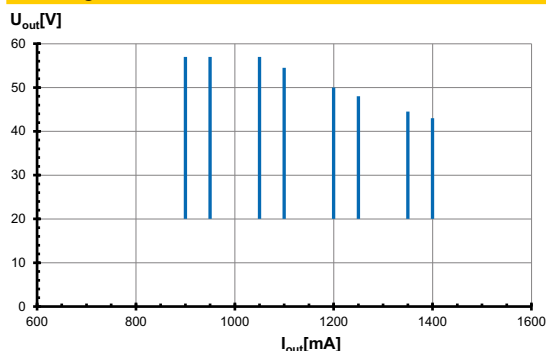
Total harmonic factor (THD) at 120 V



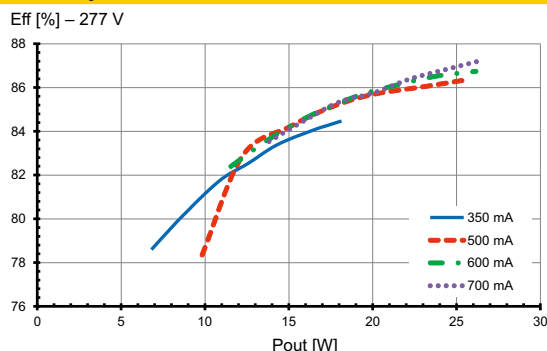
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Typ. performance graphs for 187244 / Type ECXe 1400.575

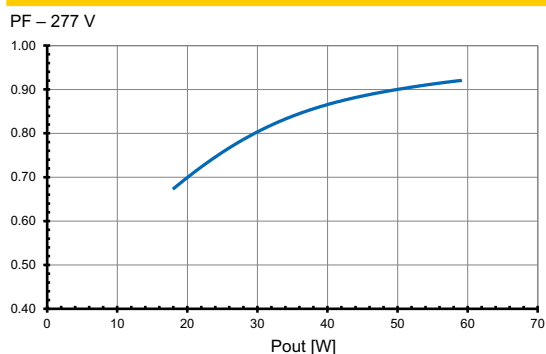
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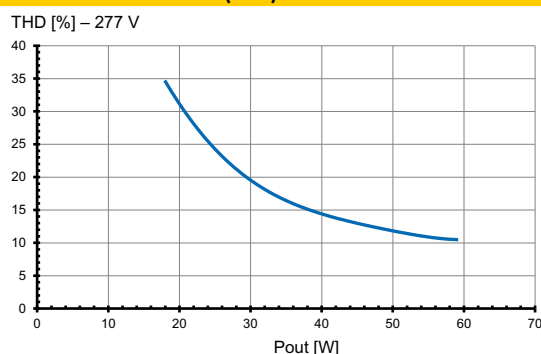
Efficiency at 277 V



Power factor at 277 V

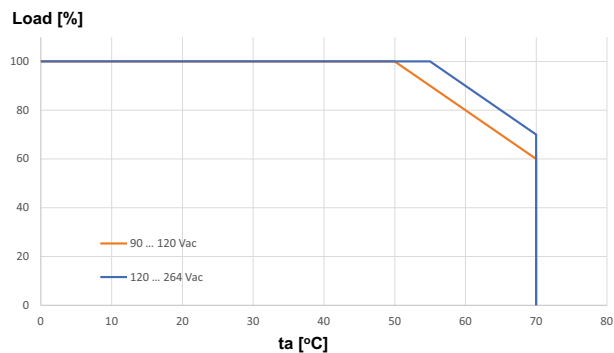


Total harmonic factor (THD) at 277 V

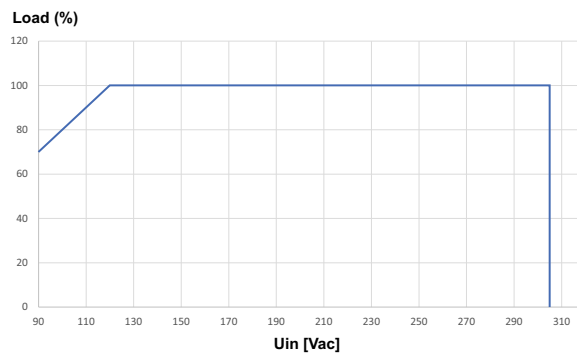


Load derating for 187242, 187243 & 187244

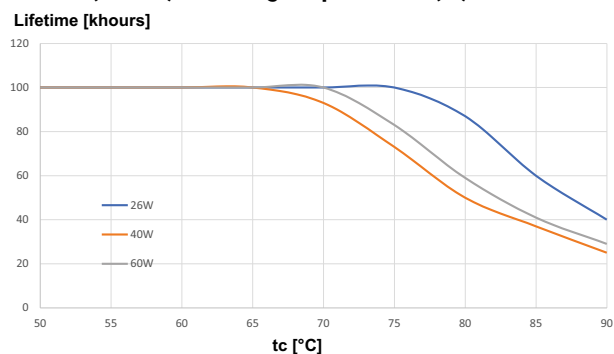
Load (%) vs. Ambient temperature t_a (°C)



Load (%) vs. Input voltage U_{in} (V AC)



Lifetime (khours) vs. Casing temperature t_c (°C)



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 6 kV
and between L/N-PE: up to 10 kV
- Short-circuit protection: The control gear is protected against permanent short-circuit with automatic restart function.
- Overload protection: The control gears have overload protection. The output voltage is limited to $U_{max} < 66V$.
- Input over voltage Protection:
The control gear is protected against mains input over voltage up to 350 Vac. In case of over voltage the controlgear will shut down with restart automaticly.
- Overheating: The control gear has overheating protection. In case of overheating the control gear will reduce the output current and shut down with automatic restart.
- 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

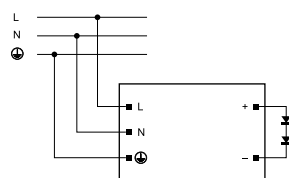
- Mounting position: Built-in: Any position inside a luminaire is allowed
- Mounting location: LED drivers are designed for integration into luminaires or comparable devices.
- Degree of protection: IP67
The driver operate normal under temporary immersion between 0,15 m and 1 m with the condition of the duration time is less than 30 min. and the water temperature does not differ from that of the driver by more than 5 K.
- 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

- The wire connection should be installed by professional person, reinforced insulation between L/N terminal block and accessible part should be fulfilled.
- The external flexible cable or cord of the LED driver cannot be replaced; if the cord is damaged, the LED driver shall be destroyed.
- During and after installation the connection of input terminal and output terminal should be enclosed to far away from water source.
- Output connection shall be installed by professional person.
At least one pole of the conductive parts in the SELV circuit shall be insulated by insulation capable of withstanding a test voltage of 500 V r.m.s. for 1 min.
- Stripped length: 9 mm
- Terminal block not included. Installation must be performed by a qualified person.

- 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 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 700.573	187242	24	32	39	41	53	65
ECXe 1050.574	187243	9	12	15	16	21	26
ECXe 1400.575	187244	8	10	12	13	17	21

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