

CC COMPACT SIMPLE FIX



EASYLINE SIMPLE FIX C-R1

**186922, 186923, 186924, 186925, 186926, 186927,
186928, 186929, 186930, 186935, 186936, 186937,
186938, 186939, 186940, 186941**

Typical Applications

Built-in in compact luminaires for

- Retail lighting
- Downlights
- Panels

EasyLine Simple Fix C-R1

- **VERY LOW RIPPLE CURRENT: < 1%**
- **SELV**
- **LONG SERVICE LIFE:
UP TO 50,000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**



EasyLine Simple Fix C-R1

Product features

- Compact casing shape

Electrical features

- Mains voltage: 220–240 V $\pm 10\%$
- Mains frequency: 50–60 Hz
- Push-in terminals
primary: 0.5–1.5 mm²
secondary: 0.75–1.5 mm²
- Power factor at full load: 0.97 / 0.99 with 186941, 186930
- 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
- Protection against "no load" operation
- Degree of protection: IP20
- Protection class II
- SELV

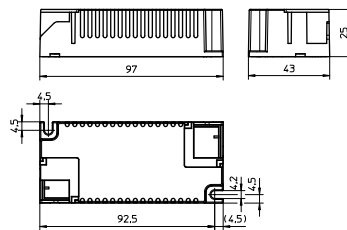
Packaging units

Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
186922	30	145	54
186923	30	145	56
186924	30	145	56
186935	30	145	64
186936	30	145	64
186925	30	145	64
186937	30	145	68
186926	30	145	68
186938	30	145	76
186927	30	145	76
186939	30	145	80
186928	30	145	80
186940	30	145	80
186929	30	145	80
186941	30	145	140
186930	30	145	140



Dimensions

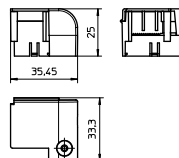
- Casing shape: K33.4
- Length: 97 mm
- Width: 43 mm
- Height: 25 mm



Cord grip for K33.4

Available for independent operation
Contains two cord grips and screws

Ref. No.: 186942



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.

Applied standards

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



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LED Drivers – EasyLine Simple Fix C-R1

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%)	Voltage output DC (V)	THD at full load % (230 V)	Efficiency at full load % (230 V)	Ripple 100 Hz %
10	ECXe 250.378	186922	220–240	51–47	9 / 152	250	26,5–38	14	> 86	< 1
12	ECXe 300.379	186923	220–240	63–56	9 / 145	300	27–38	12	> 86	< 1
14	ECXe 350.380	186924	220–240	72–64	9 / 150	350	27,8–38,8	9	> 87	< 1
16	ECXe 400.390	186935	220–240	95–85	14 / 197	400	30–40,6	13	> 89	< 1
18	ECXe 450.391	186936	220–240	105–95	14 / 189	450	30–40,6	8	> 89	< 1
21	ECXe 500.381	186925	220–240	110–100	13 / 163	500	30–40,6	9	> 88	< 1
22	ECXe 550.392	186937	220–240	130–117	17 / 148	550	30–40	9	> 89	< 1
24	ECXe 600.382	186926	220–240	130–117	13 / 164	600	30–40	8	> 89	< 1
26	ECXe 650.393	186938	220–240	150–114	16 / 209	650	30–40	7	> 90	< 1
28	ECXe 700.383	186927	220–240	160–120	15 / 210	700	30–40	9	> 89	< 1
30	ECXe 750.394	186939	220–240	180–100	16 / 208	750	30–40	7	> 90	< 1
32	ECXe 800.384	186928	220–240	190–140	15 / 210	800	30–40	7	> 90	< 1
34	ECXe 850.395	186940	220–240	210–120	16 / 207	850	30–40	7	> 90	< 1
36	ECXe 900.385	186929	220–240	200–150	15 / 212	900	30–40	8	> 90	< 1
38	ECXe 950.396	186941	220–240	210–140	13 / 249	950	31–40	7	> 89	< 1
42	ECXe 1050.386	186930	220–240	230–150	14 / 259	1050	31–40	6	> 89	< 1

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.		
186922, 186923, 186924, 186925, 186926, 186935, 186936, 186937	-20	+50	20	60	-40	+80	5	95	+75	IP20
186938	-15	+45							+75	
186927, 186939									+80	
186928, 186940, 186929									+85	
186941									+85	
186930									+90	

Expected service life time

at operation temperatures at t_c point

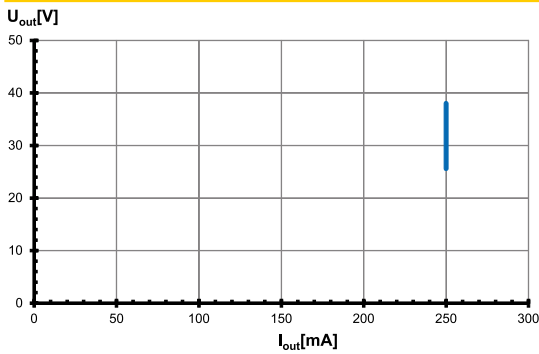
Operation current	Ref. No.							
	186930		186928, 186940, 186929, 186941		186927, 186939		186922, 186923, 186924, 186935, 186936, 186925, 186937, 186926, 186938	
All	90 °C*	80 °C	85 °C*	75 °C	80 °C*	70 °C	75 °C*	65 °C
hrs.	30.000	50.000	30.000	50.000	30.000	50.000	30.000	50.000

* recommended operation temperature

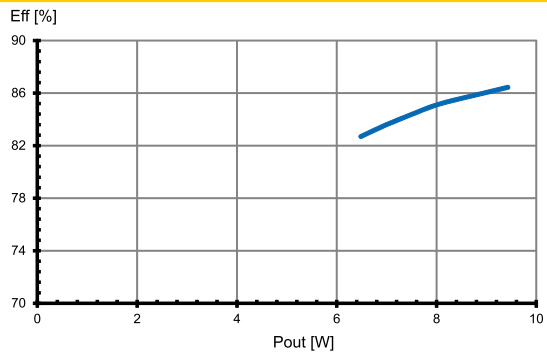
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Typ. performance graphs for 186922 / Type ECXe 250.378

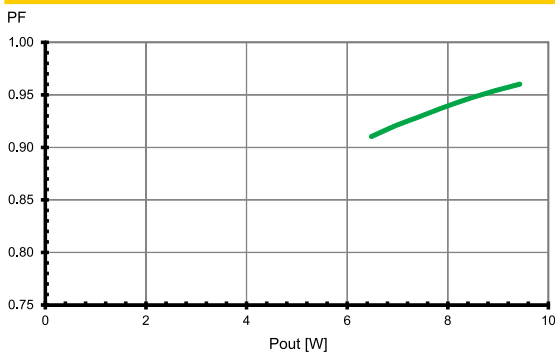
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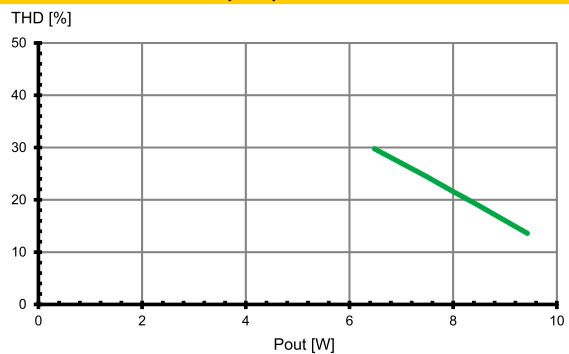
Efficiency



Power factor

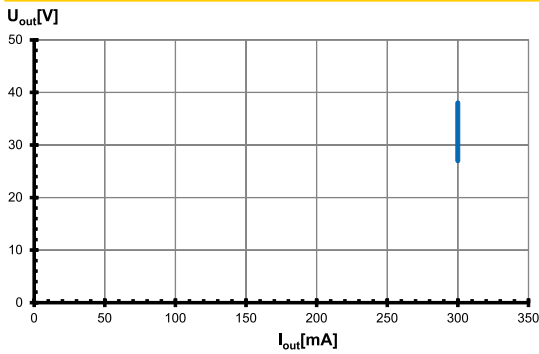


Total harmonic factor (THD)

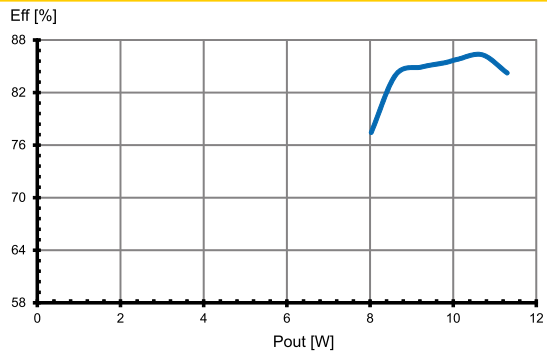


Typ. performance graphs for 186923 / Type ECXe 300.379

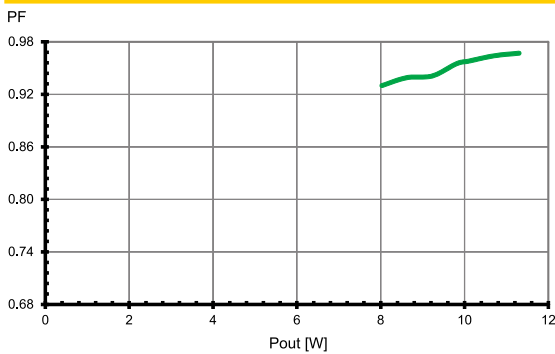
Working area



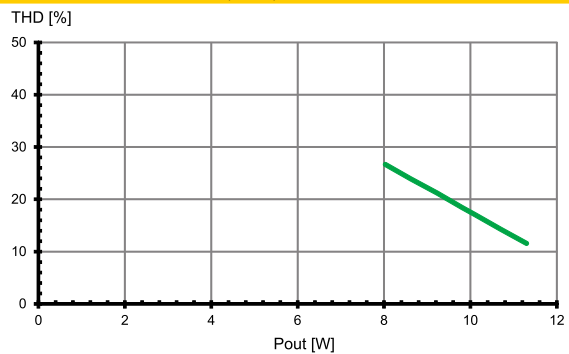
Efficiency



Power factor



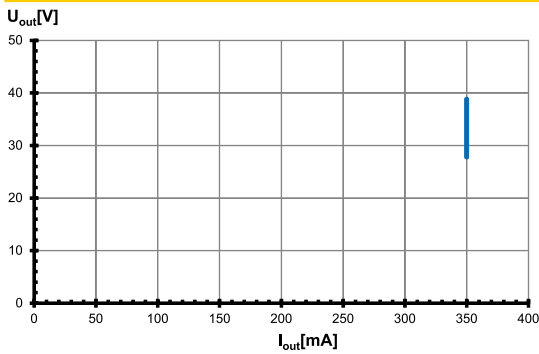
Total harmonic factor (THD)



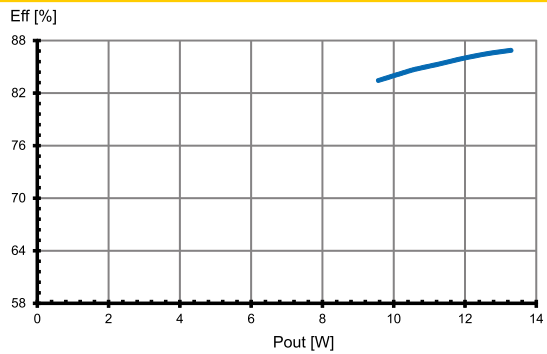
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Typ. performance graphs for 186924 / Type ECXe 350.380

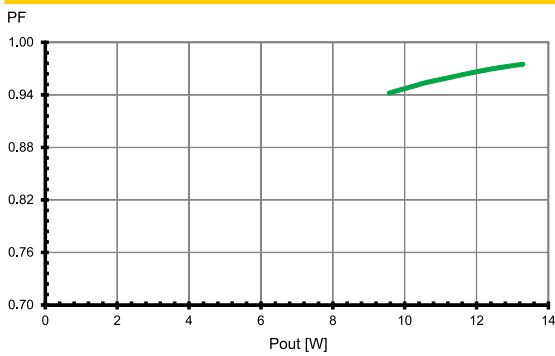
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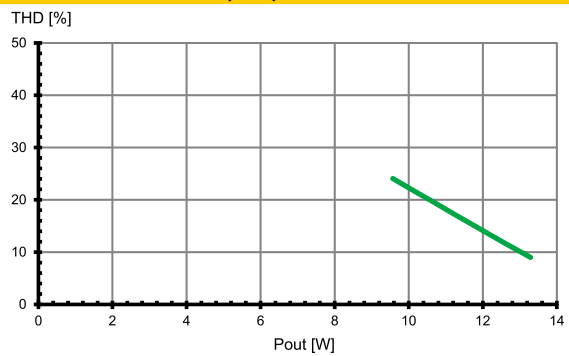
Efficiency



Power factor

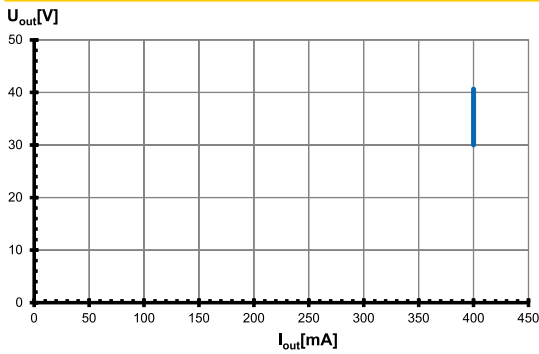


Total harmonic factor (THD)

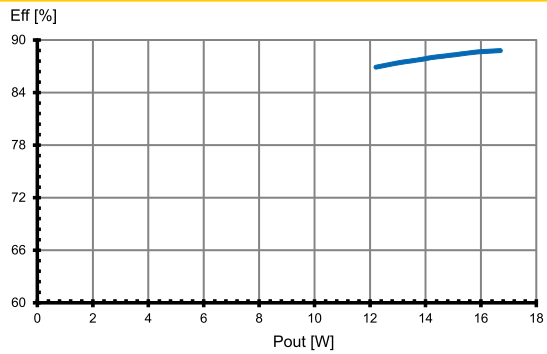


Typ. performance graphs for 186935 / Typ ECXe 400.390

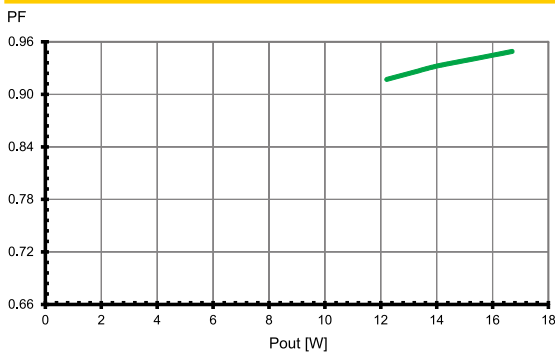
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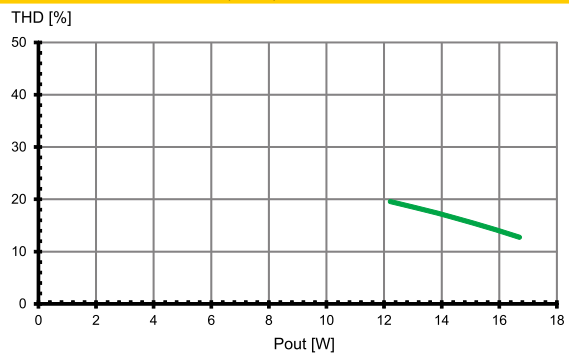
Efficiency



Power factor



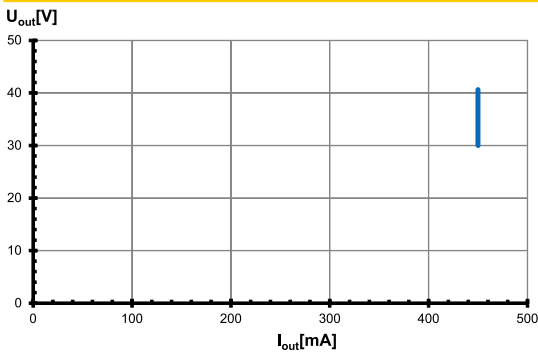
Total harmonic factor (THD)



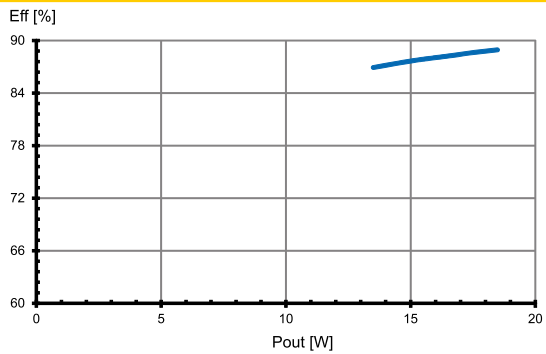
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Typ. performance graphs for 186936 / Typ ECXe 450.391

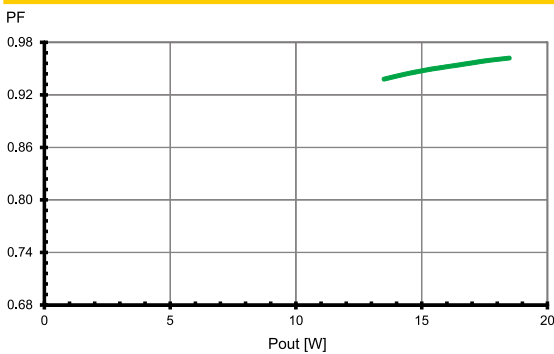
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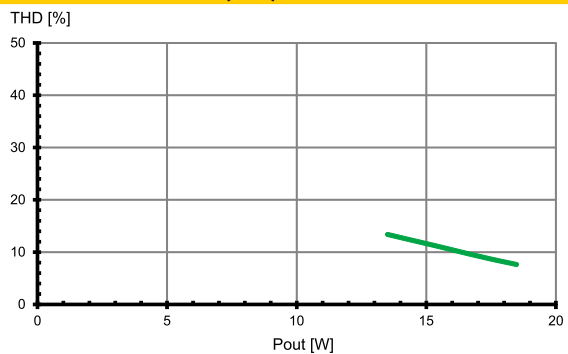
Efficiency



Power factor

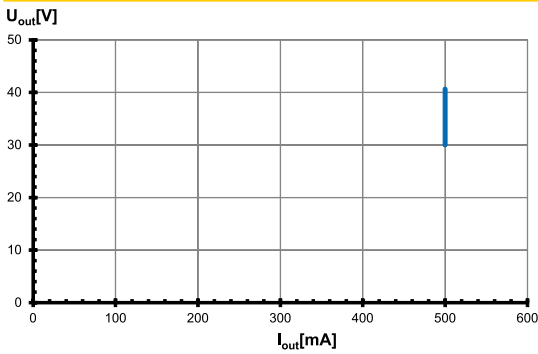


Total harmonic factor (THD)

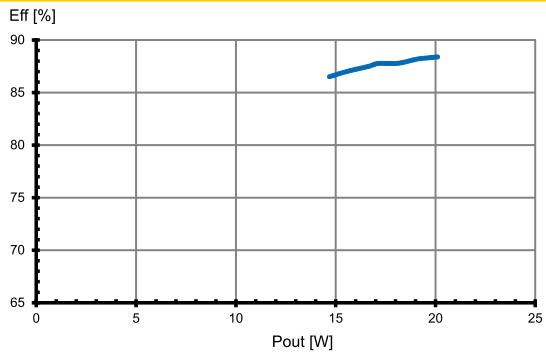


Typ. performance graphs for 186925 / Typ ECXe 500.381

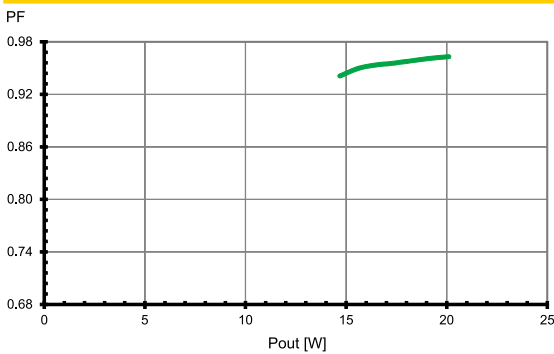
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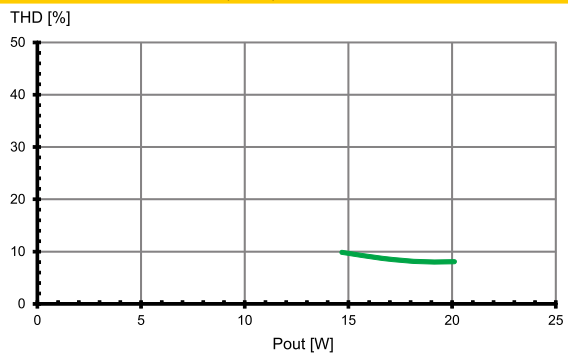
Efficiency



Power factor



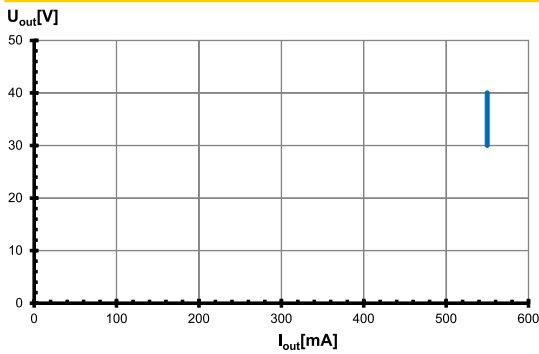
Total harmonic factor (THD)



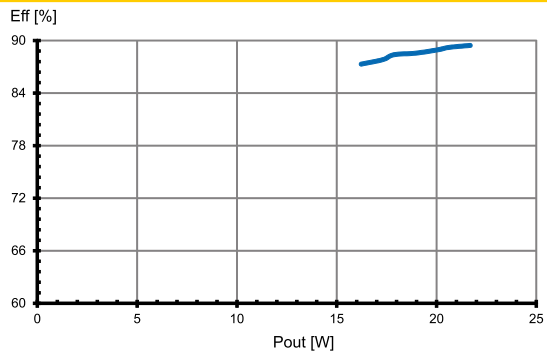
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Typ. performance graphs for 186937 / Typ ECXe 550.392

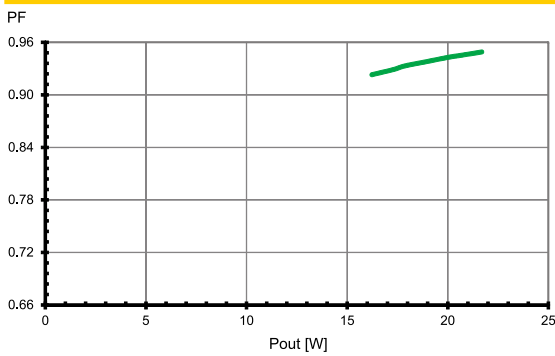
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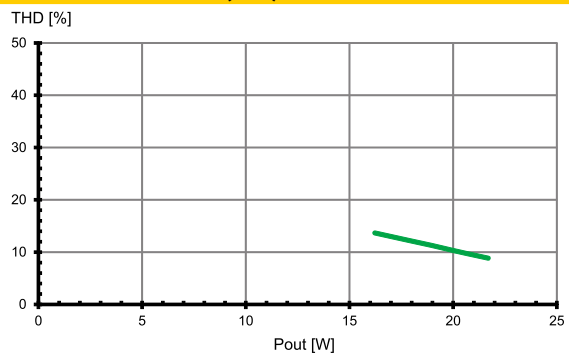
Efficiency



Power factor

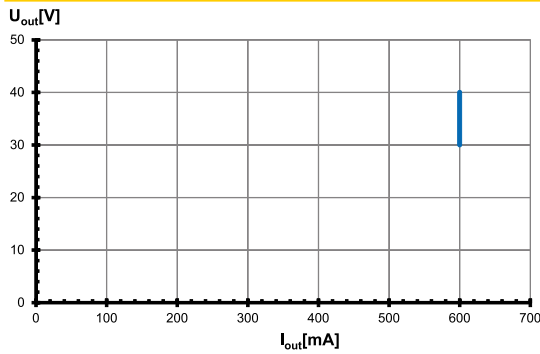


Total harmonic factor (THD)

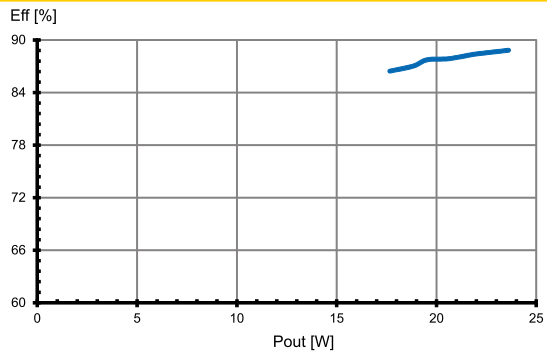


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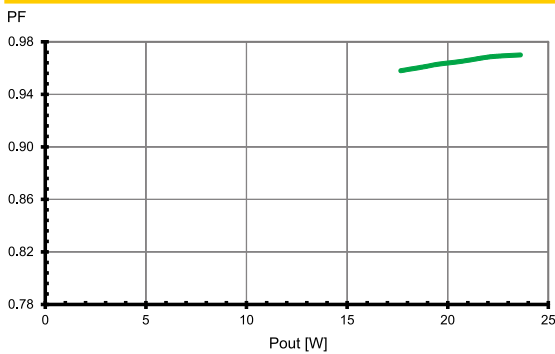
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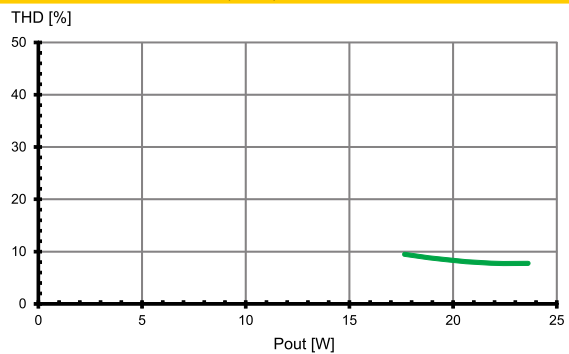
Efficiency



Power factor



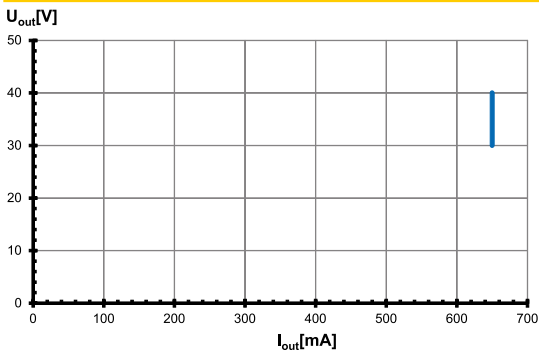
Total harmonic factor (THD)



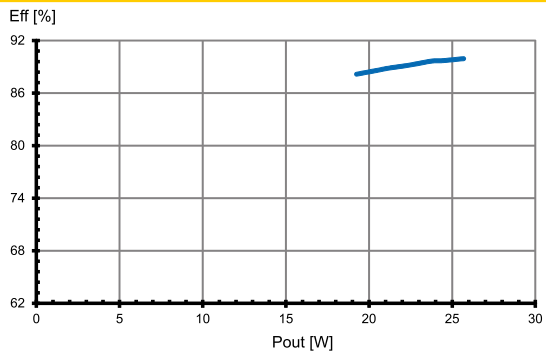
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Typ. performance graphs for 186938 / Typ ECXe 650.393

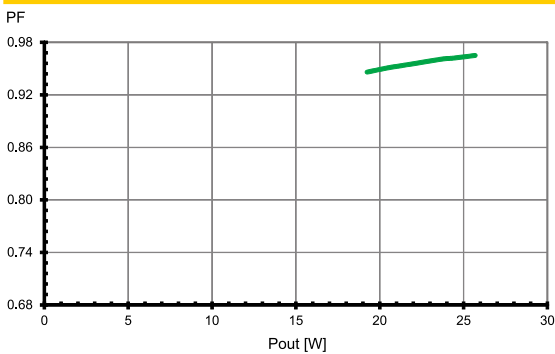
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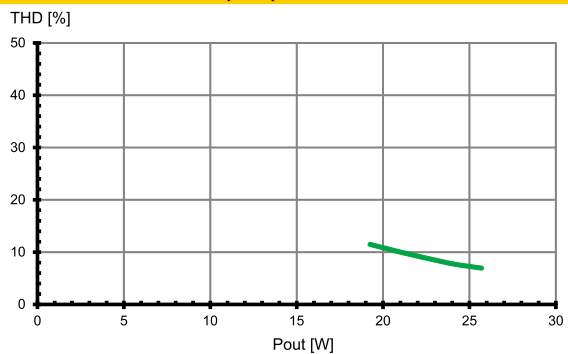
Efficiency



Power factor

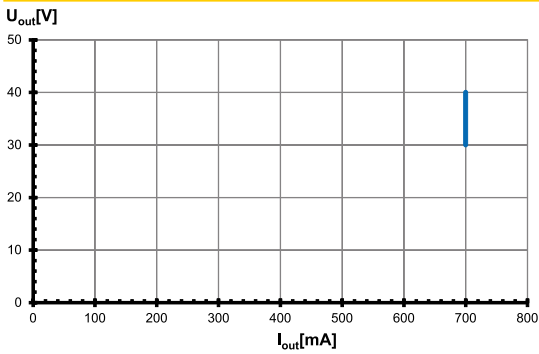


Total harmonic factor (THD)

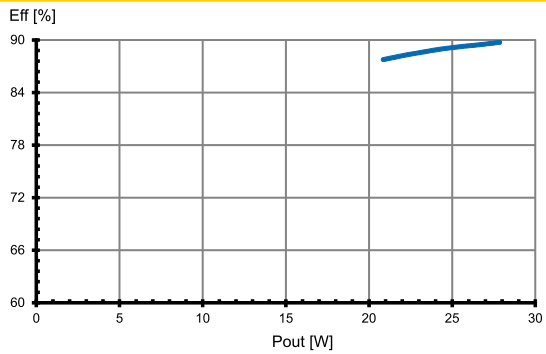


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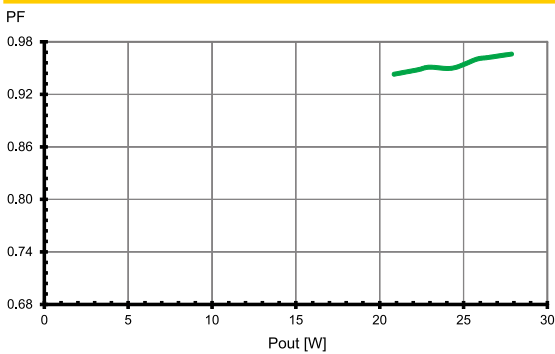
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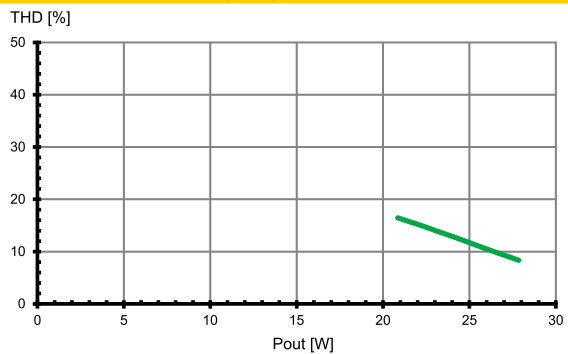
Efficiency



Power factor



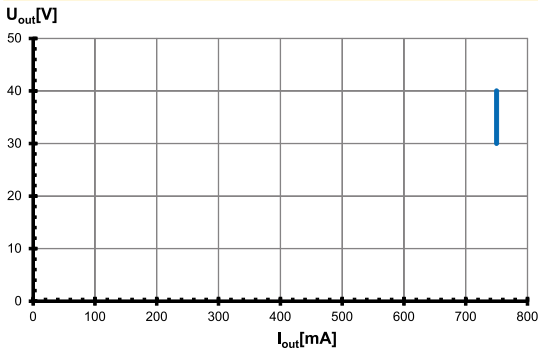
Total harmonic factor (THD)



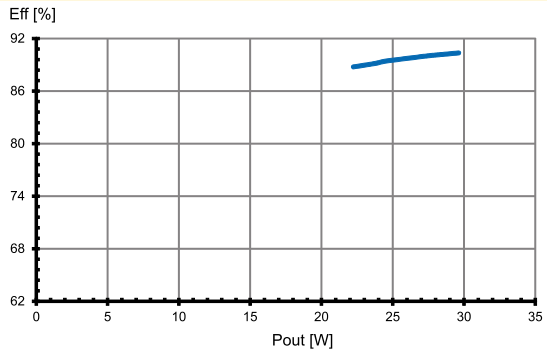
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Typ. performance graphs for 186939 / Typ ECXe 750.394

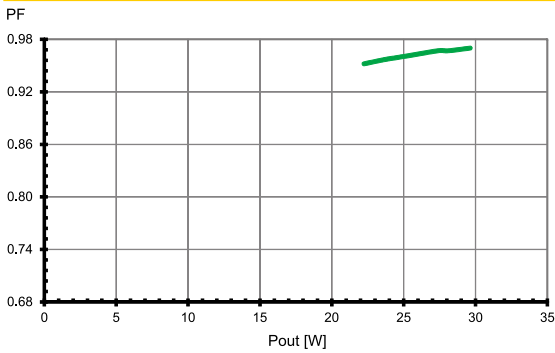
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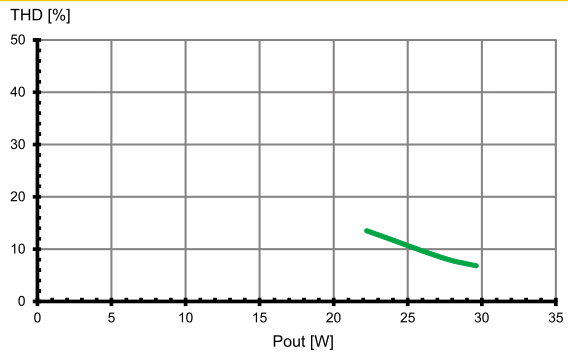
Efficiency



Power factor

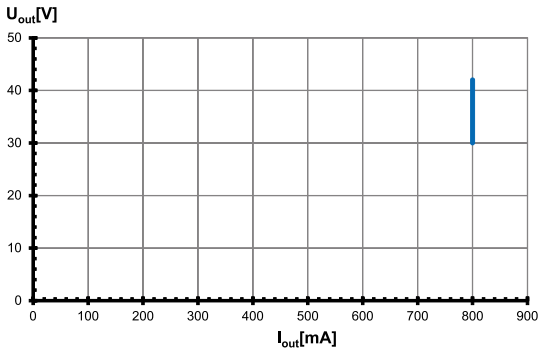


Total harmonic factor (THD)

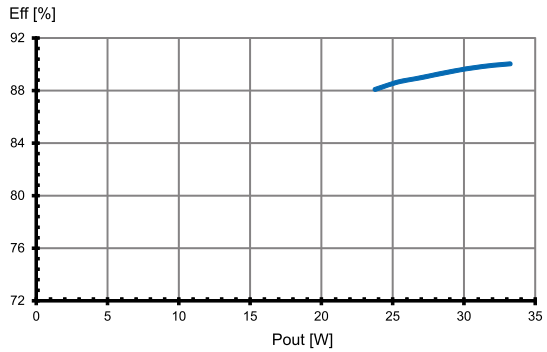


Typ. performance graphs for 186928 / Typ ECXe 800.384

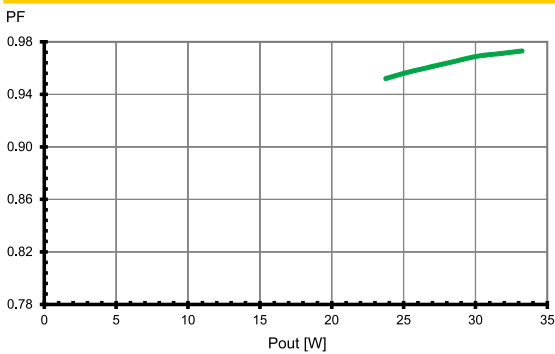
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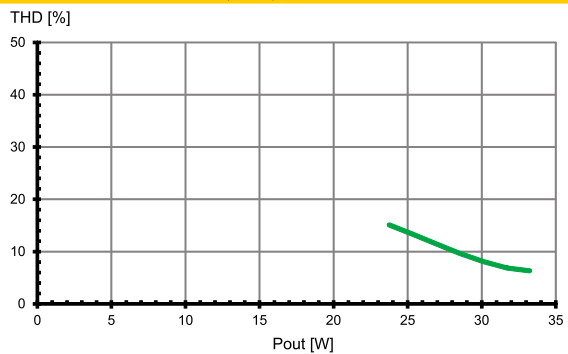
Efficiency



Power factor



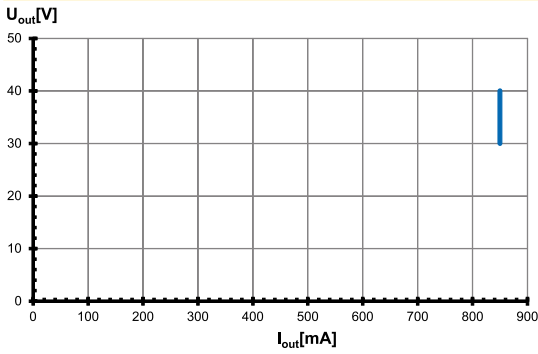
Total harmonic factor (THD)



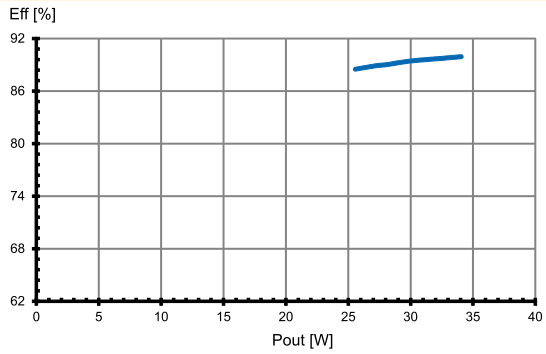
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Typ. performance graphs for 186940 / Typ ECXe 850.395

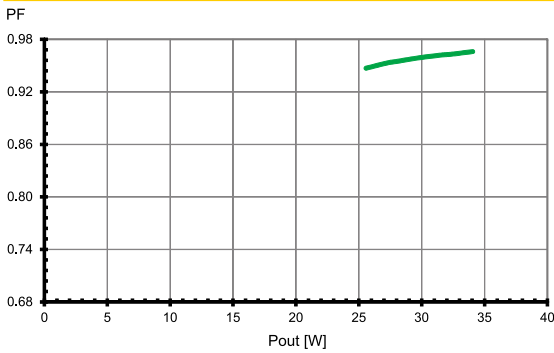
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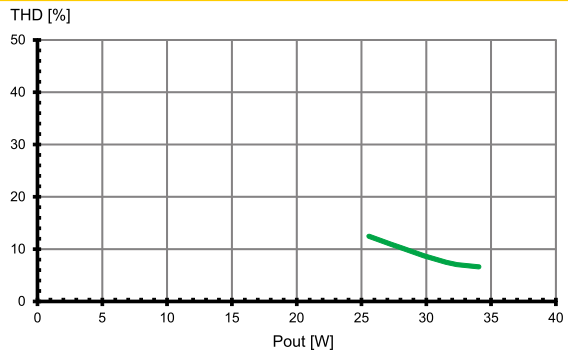
Efficiency



Power factor

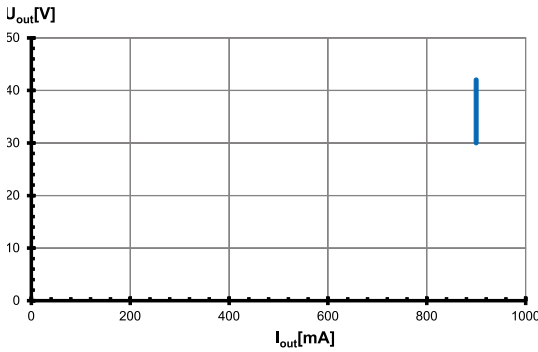


Total harmonic factor (THD)

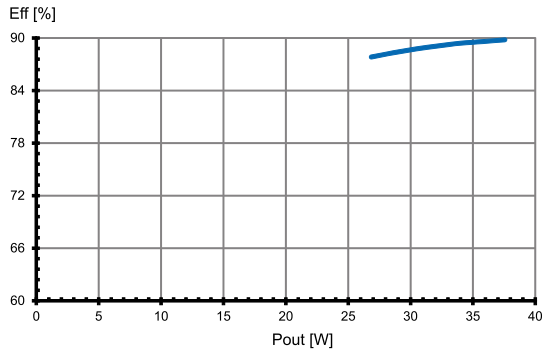


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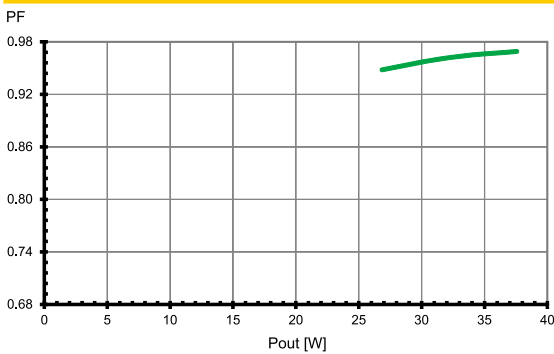
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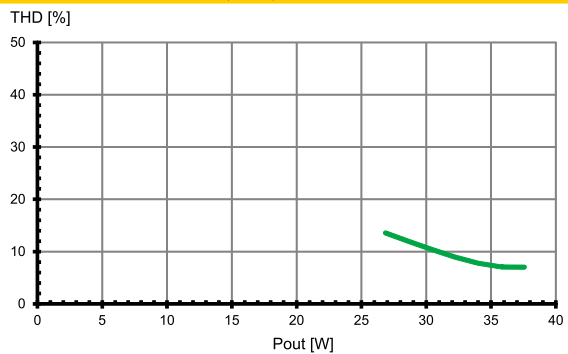
Efficiency



Power factor



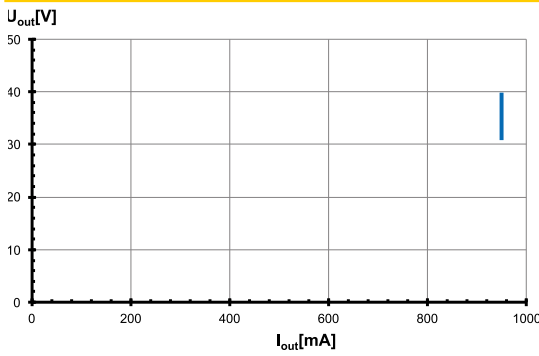
Total harmonic factor (THD)



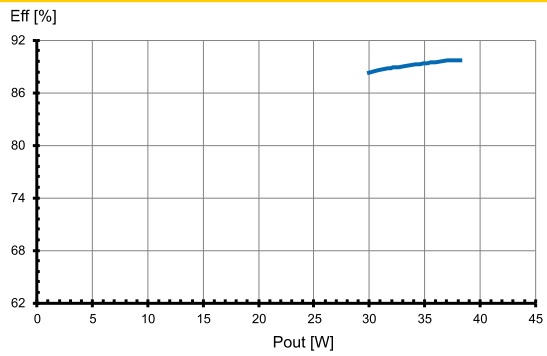
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Typ. performance graphs for 186941 / Typ ECXe 950.396

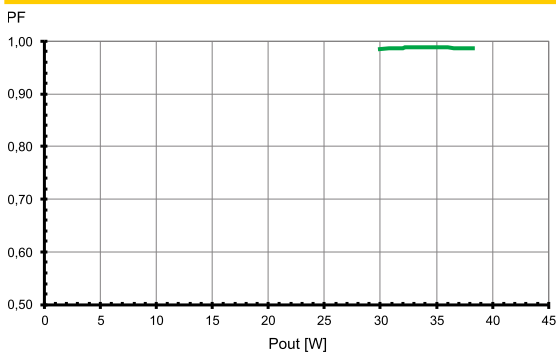
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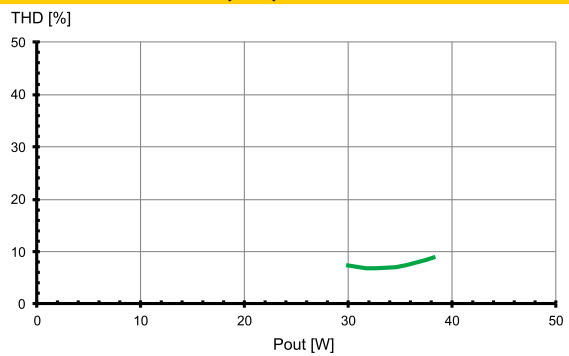
Efficiency



Power factor

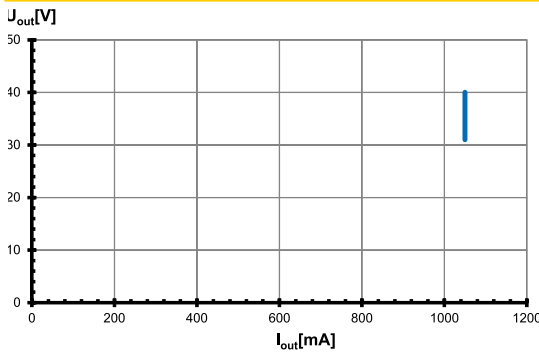


Total harmonic factor (THD)

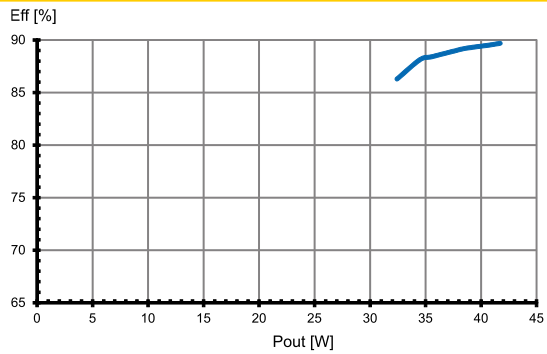


Typ. performance graphs for 186930 / Typ ECXe 1050.386

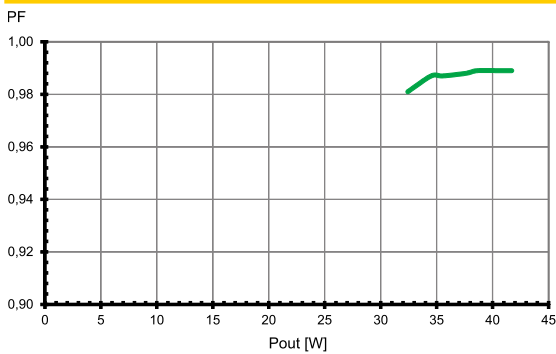
Working area



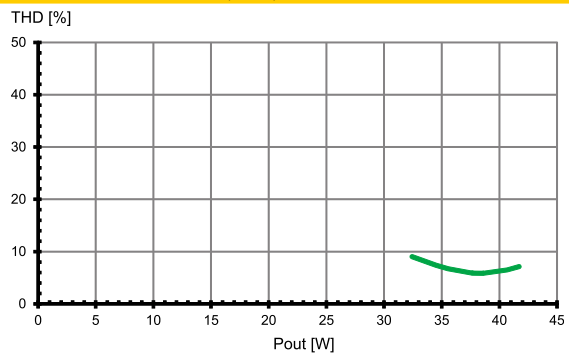
Efficiency



Power factor



Total harmonic factor (THD)



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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 1 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

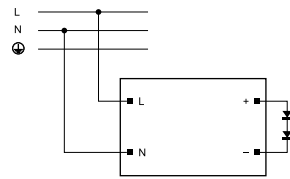
- DIN VDE 0100
- EN 60598-1

Mechanical mounting

- Mounting position: Built-in: Any position inside a luminaire is allowed
Independent application: Drivers are allowed to use for independent applications with an additional 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: Screw terminals for rigid or flexible conductors with a section of primary 0.5–1.5 mm² and secondary 0.75–1.5 mm²
- Stripped length: 8.5–10 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: 5 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.
- Parallel wiring: Parallel connection of LED loads is not allowed.
- Wiring diagram:



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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 250.378	186922	60	79	97	101	131	162
ECXe 300.379	186923	63	83	102	106	138	170
ECXe 350.380	186924	61	80	98	102	133	164
ECXe 500.381	186925	29	38	47	49	64	79
ECXe 600.382	186926	31	40	49	51	67	82
ECXe 700.383	186927	39	50	62	65	84	104
ECXe 800.384	186928	33	43	53	55	71	88
ECXe 900.385	186929	38	50	62	64	84	103
ECXe 400.390	186935	24	31	39	40	52	65
ECXe 450.391	186936	25	33	41	43	56	69
ECXe 550.392	186937	24	31	39	40	53	65
ECXe 650.393	186938	25	33	41	43	56	69
ECXe 750.394	186939	24	32	39	41	53	65
ECXe 850.395	186940	25	33	41	42	55	68
ECXe 950.396	186941	24	32	39	41	54	66
ECXe 1050.386	186930	22	28	35	37	48	59

- 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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