CC LINEAR LEDSET

ComfortLine LEDSet L-HSP

186695, 186696

Typical Applications
Built-in in linear luminaires for
- Industrial lighting

LEDset 1

ComfortLine LEDSet L-HSP

- **SELECTABLE OUTPUT CURRENT VIA LEDSET**
- **VERY LOW RIPPLE CURRENT: < 3%**
- **SURGE PROTECTION: UP TO 4 KV**
- **SUITABLE FOR EMERGENCY ESCAPE LIGHTING SYSTEMS ACC. TO EN 50172**
- **LONG SERVICE LIFE: UP TO 100,000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**

5 YEARS GUARANTEE

LIGHTING SOLUTIONS
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ComfortLine LEDSet L-HSP

IP20 | 130 | 0% NO LOAD OPERATION | IEEE 1789-2015 | EL | 50 000 hours Min. Service Lifetime | Guarantee 5 years

Product features
- Linear casing shape

Functions
- Selectable current output by secondary side LEDSet terminal.
- The output current can be freely adjusted between 400 mA and 800 mA by using a resistor (according LEDSet standard).
- LEDSet resistor ist not included.
- Suitable for central battery system for emergency lighting acc. to EN 50172

Electrical features
- Mains voltage: 220–240 V ±10%
- Mains frequency: 50–60 Hz
- DC operation: 198–276 V, 0 Hz
- Push-in terminals: 0.2–1.5 mm²
- Power factor at full load: > 0.98
- Max. working voltage (U_{OUT}): 300 V (186695) or 400 V (186696)
- 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 4 kV (between L/N and PE)
- Electronic short-circuit protection
- Overtemperature protection
- Protection against "no load" operation
- Degree of protection: IP20
- Protection class I

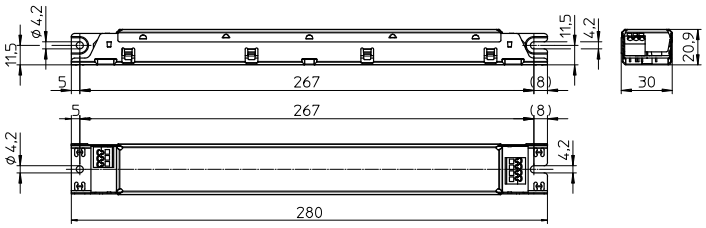
Packaging units

Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
186695	30	64	212
186696	20	48	261

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

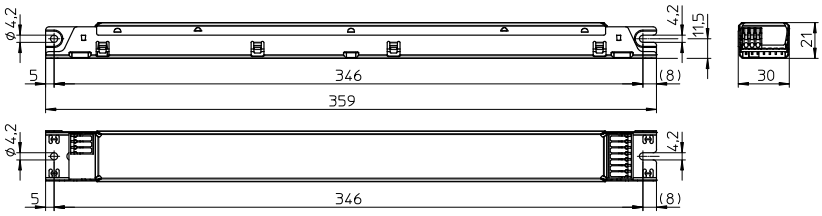
Dimensions
- Casing: M7.1
- Ref. No.: 186695
- Length: 280 mm
- Width: 30 mm
- Height: 21 mm



Current adjustment

LED set 1

- Casing: M10
- Ref. No.: 186696
- Length: 359 mm
- Width: 30 mm
- Height: 21 mm



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CC-ComfortLine-LEDSet-HSP_186695-186696_EN – 2/7 – 06/2019

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 %
120	ECXe 800.262	**186695**	220–240	590–540	52.5 / 270	400–800	88–280	< 10	96	< 3
165	ECXe 800.263	**186696**	220–240	800–730	58.8 / 228.9	400–800	120–360	< 10	96	< 3

Maximum ratings

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

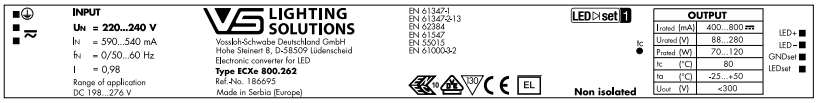
Ref. No.	Ambient temperature range °C min.	°C max.	Operation humidity range % min.	% max.	Storage temperature range °C min.	°C max.	Storage humidity range % min.	% max.	Max. operation temperature at t_c point °C	Degree of protection
186695	–25	+50	20	60	–40	+85	5	95	+80	IP20
186696									+75	

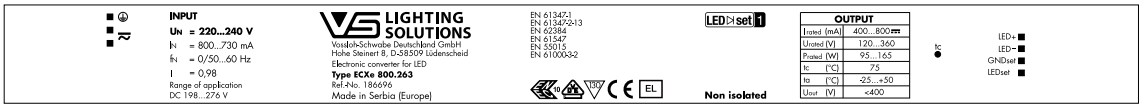
Expected service life time

at operation temperatures at t_c point

Operation current	Ref. No. 186696		186695	
All	65 °C	75 °C	70 °C	80 °C
hrs.	100,000	50,000	100,000	50,000

Product labels





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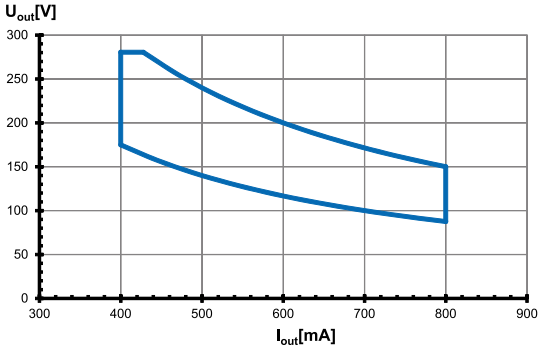
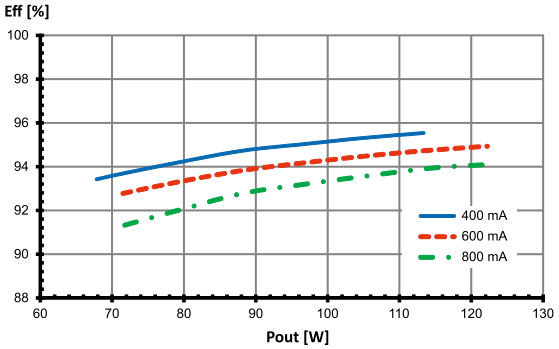
Typ. performance graphs for 186695 / Type ECXe 800.262

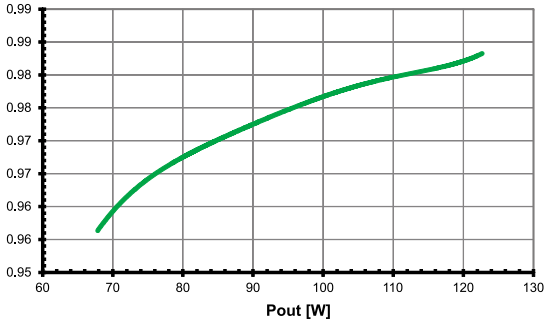
Working area



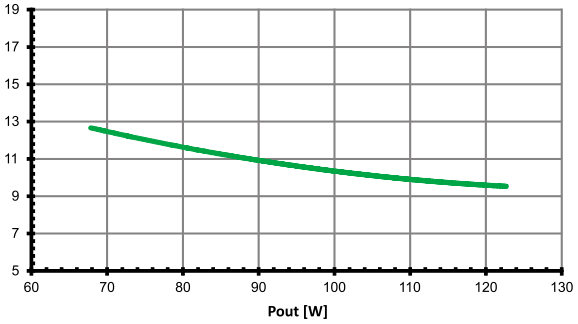
Efficiency



Power factor

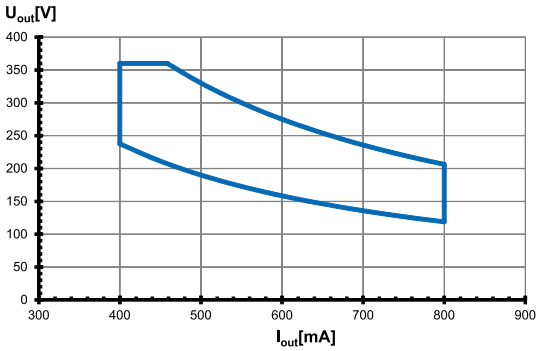


Total harmonic factor (THD)



Typ. performance graphs for 186696 / Type ECXe 800.263

Working area



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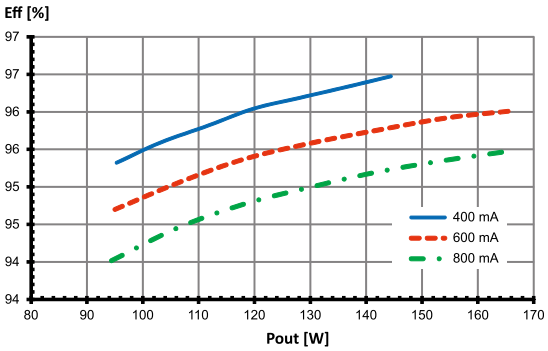
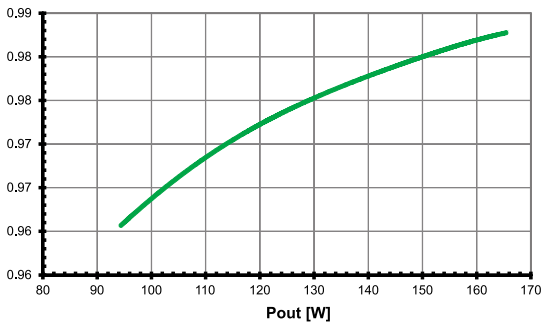
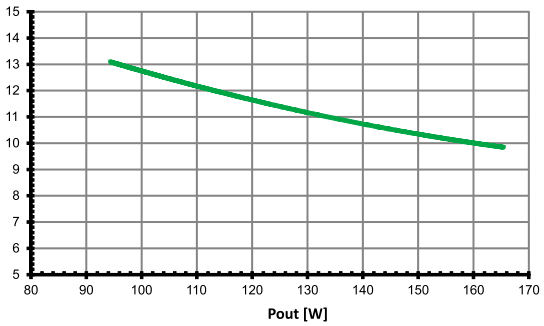


Power factor



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.

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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 4 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. 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 acc. to IEC 61347-1 C 5e).
  186695: In case of overheating the control gear will not shut down and the service life time will reduce.
  186696: In case of overheating the control gear will shut down. For restart switch of the mains for 1 min. and start again.
- 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.

DC and emergency lighting operation

The control gears are suitable for direct voltage operation (DC). Reliable DC operation is guaranteed if the specified working area of LED driver is maintained.

- Light level at DC operation (EOFx): 100 % (not adjustable)
- DC range: 198–276 V
- Reducing to 176 V: With reduced service life time possible
- DC operation: 3 hrs. (acc. to EN 50172)

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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

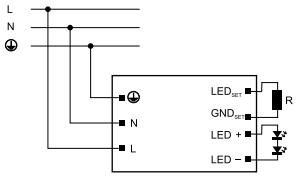
- DIN VDE 0100
- EN 60598-1

Mechanical mounting

- Mounting position: Built-in: Any position inside a luminaire is allowed
  Independent application: Drivers are 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
- Tightening torque: 0.2 Nm

Electrical installation

- Connection terminals: Push-in terminals for rigid or flexible conductors with a section of 0.2–1.5 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.
- 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.
- 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		B 10 A	B 13 A	B 16 A
ECXe 800.262	**186695**	5	7	9
ECXe 800.263	**186696**	6	7	9
Automatic cut-out type C		C 10 A	C 13 A	C 16 A
ECXe 800.262	**186695**	9	12	15
ECXe 800.263	**186696**	10	13	16

– 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.

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Choice of LEDSet Resistor

Output current selection:

- The output current can be adapted within the rated output current range between 400 and 800 mA.
- To change the output current it is necessary to use the correct LEDSet resistor. Values for different currents are figured out in the table below.
- The LEDSet resistor should have a maximum tolerance of 1%.
- Please refer to the electrical values and the operating window to see which combinations are possible.
- Output current / needed LEDSet resistor can be calculated as follows:
  I_{OUT} = 5V/Rset × 1000
  R_{set} = 5V/I_{OUT} × 1000
- If no LEDSet resistor is mounted (delivery condition) output current is less than nominal $I_{min.}$
- If LEDSet interface is short circuit output current is limitied to $I_{max.}$

Resistors		**ECXe 800.262**				**ECXe 800.263**			
Nominal current	Resistor	LED output voltage		LED nominal output		LED output voltage		LED nominal output	
I_{rated}	R	U_{LED}		P_{rated}		U_{LED}		P_{rated}	
mA	kΩ	V min.	V max.	W min.	W max.	V min.	V max.	W min.	W max.
400	12.50	175	280	70	112	238	360	95	144
425	11.76	165	280	70	119	224	360	95	153
450	11.11	156	267	70	120	211	360	95	162
475	10.53	147	253	70	120	200	347	95	165
500	10.00	140	240	70	120	190	330	95	165
525	9.52	133	229	70	120	181	314	95	165
550	9.09	127	218	70	120	173	300	95	165
575	8.70	122	209	70	120	165	287	95	165
600	8.33	117	200	70	120	158	275	95	165
625	8.00	112	192	70	120	152	264	95	165
650	7.69	108	185	70	120	146	254	95	165
675	7.41	104	178	70	120	141	244	95	165
700	7.14	100	171	70	120	136	236	95	165
725	6.90	97	166	70	120	131	228	95	165
750	6.67	93	160	70	120	127	220	95	165
775	6.45	90	155	70	120	123	213	95	165
800	6.25	88	150	70	120	120	206	95	165

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