

CC LINEAR NFC



EASYLINE NFC L

187643, 187644, 187645, 187646, 187647, 187648

Typical Applications

Built-in in linear luminaires for

- Office lighting
- Industrial lighting



EasyLine NFC L

- **SELECTABLE OUTPUT CURRENT VIA NFC**
- **ADJUSTABLE CLO VIA NFC**
- **WIDE OPERATING WINDOW FOR MAXIMUM APPLICATION FLEXIBILITY**
- **VERY LOW RIPPLE CURRENT: < 1%**
- **SUITABLE FOR EMERGENCY ESCAPE LIGHTING SYSTEMS ACC. TO EN 50172**
- **LONG SERVICE LIFE:
UP TO 100,000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**



EasyLine NFC L

Product features

- Linear casing shape

Functions

- Programmable via NFC interface (contactless)
 - Selectable current output
 - Programmable CLO function
- Suitable for central battery system for emergency lighting acc. to EN 50172

Electrical features

- Mains voltage: 220–240 V $\pm 10\%$
- Mains frequency: 50–60 Hz
- DC operation: 176–280 V, 0 Hz
- Push-in terminals: 0.2–1.5 mm²
- Power factor at full load: 0.98
- Max. working voltage (U_{OUT}):
 - 250V: 187643/187644/187645
 - 350V: 187646/187647/187648
- Secondary side switching of LED modules is not allowed.

Safety features

- Protection against transient main peaks up to 1 kV (between L and N) and up to 2 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	Pieces per pallet	Weight g
187643	16	3200	113.7
187644	16	3200	142
187645	16	2432	202
187646	16	3200	138.8
187647	16	2432	202.4
187648	16	2432	220.3

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
187643	M5.2	190	30	21
187644	M6.3	210	30	21
187646				
187645	M7.6	280	30	21
187647				
187648				



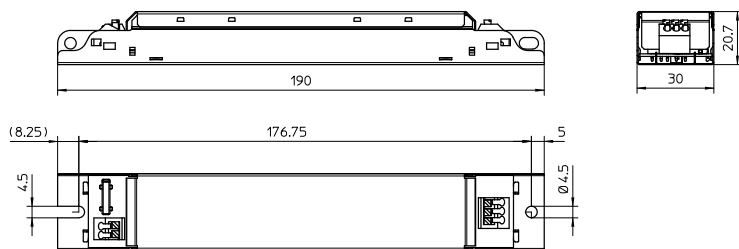
Current adjustment



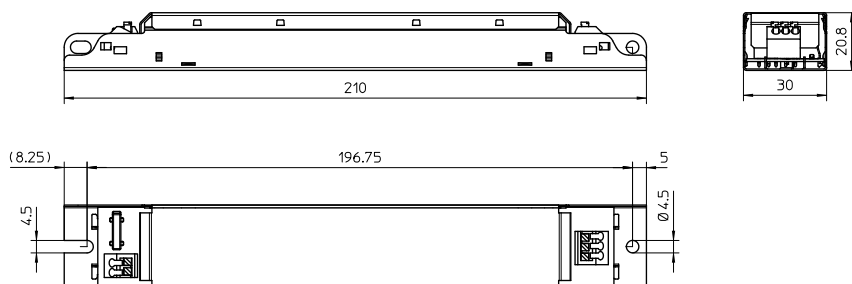
The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Drawings

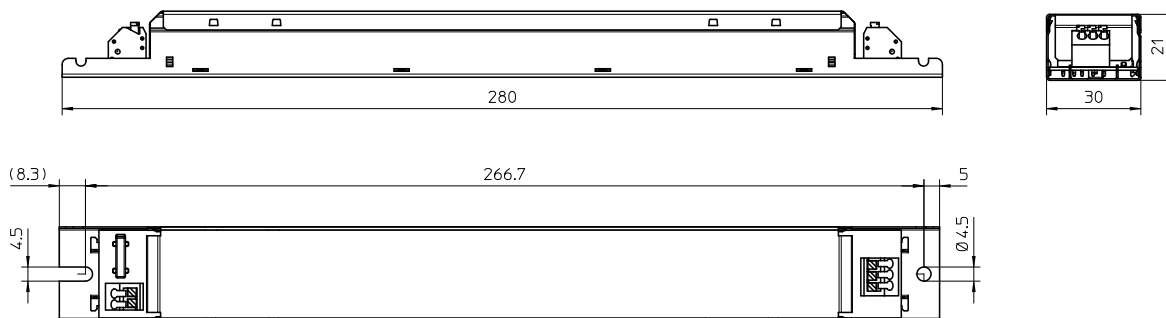
M5.2



M6.3



M7.6



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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 %
45	ECXe 350.770	187643	220–240	225–208	23.2 / 156	75–350	40–225	< 6	94	< 1
75	ECXe 500.771	187644	220–240	374–344	43 / 202	150–500	40–225	< 5	95	< 1
95	ECXe 800.772	187645	220–240	462–424	33.6 / 212	400–800	40–180	< 6	94.5	< 1
65	ECXe 350.773	187646	220–240	322–295	37.4 / 172	75–350	120–320	< 5	95.5	< 1
115	ECXe 600.774	187647	220–240	561–515	30.6 / 230	200–600	120–320	< 6	95.5	< 1
150	ECXe 800.775	187648	220–240	726–666	33.8 / 308	350–800	120–320	< 5	96	< 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.		
All types	–25	+50	20	90	–25	+75	20	90	+75	IP20

Expected service life time

at operation temperatures at t_c point

Operation current	Ref. No.	
	All types	
All	65 °C	75 °C
hrs.	100.000	50.000

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INPUT
UN = 220...240 V~
 $I_N = 0,038...0,28 A$
 $f_N = 50/60$ Hz
 $\lambda = 0,72...0,97 \mu m$
 Range of application
 DC 176...280 V

VS LIGHTING SOLUTIONS
 Vossloh+Schotte Deutschland GmbH
 Flughafen-Straße 61/1, 73614 Schönmörs
 Tel. 07141 949-0
Type ECxE 350.770
 Ref.-No. 187643
 Made in China

OUTPUT

Irated [mA]	75...350
Urated [V]	40...225
Prated [W]	10...45
ta [°C]	25...50
ta [°C]	75...145
Uaout [V]	<250

Not isolated

7,0...9,0mm

EL

LED-



INPUT
U_N = 220...240 V~
I_N = 0,075...0,47 A
f_N = 50/60 Hz
λ = 0,86C...0,99
Range of application
DC 176...280 V


LIGHTING SOLUTIONS
Vossloh-Schwabe Deutschland GmbH
Stuttgarter Straße 61/1, 73614 Schorndorf
Electronic Controller for LED
Type ECxS 500.771
Ref.No. 187644
Made in China

OUTPUT

Urated [mA]	150 - 500
Irated [V]	40 - 225
Prated [W]	20 - 75
t _c [°C]	75
to [°C]	-25...+50
Uout [V]	<250

Non isolated



 LED-


■ L ■ N ⊕	INPUT UN = 220...240 V~ IN = 0,057...0,41 A fn = 0/50/60 Hz λ = 0,86C...0,99 Range of application DC 176...280 V	VS LIGHTING SOLUTIONS Vossloh-Schwabe Deutschland GmbH Stuttgarter Straße 61/1, 73614 Schorndorf Electronic Controllergear for LED Type ECXc 350..773 Ref.No. 187646 Made in China	LED+ ■ LED- ■	OUTPUT --- Irated (mA) 75 : 350 Urated (V) 120 : 320 Prated (W) 15 - 65 Ic (°C) 75 ta (°C) -25...+50 Uout (V) <350 Non isolated
0,5...1,5 7,0...9,0mm	EL OS 110	CE UKA ERAC	LED+ ■ LED- ■	OUTPUT --- Irated (mA) 75 : 350 Urated (V) 120 : 320 Prated (W) 15 - 65 Ic (°C) 75 ta (°C) -25...+50 Uout (V) <350 Non isolated

 L  N  0,5...1,5 m  7,0...9,0mm	INPUT UN = 220...240 V~ IN = 0,4...0,8 A fN = 0/50/60 Hz λ = 0,95...0,99 Range of application DC 176...280 V	 VS LIGHTING SOLUTIONS Vossloh-Schwabe Deutschland GmbH Stuttgartstraße 61/1, 73614 Schorndorf Electronic Controlgear for LED Type ECXe 800.772 Ref.-No. 187645 Made in China	OUTPUT <table border="1"> <tr> <td>Irated [mA]</td> <td>400 - 800</td> </tr> <tr> <td>Urated [V]</td> <td>40 - 180</td> </tr> <tr> <td>Prated [W]</td> <td>30 - 95</td> </tr> <tr> <td>tc [°C]</td> <td>75</td> </tr> <tr> <td>to [°C]</td> <td>-25...+50</td> </tr> <tr> <td>Uout [V]</td> <td><250</td> </tr> </table> Non isolated	Irated [mA]	400 - 800	Urated [V]	40 - 180	Prated [W]	30 - 95	tc [°C]	75	to [°C]	-25...+50	Uout [V]	<250
Irated [mA]	400 - 800														
Urated [V]	40 - 180														
Prated [W]	30 - 95														
tc [°C]	75														
to [°C]	-25...+50														
Uout [V]	<250														

INPUT
UN = 220...240 V $\approx$
IN = 0,19...0,72 A
fN = 0/50/60 Hz
 $\lambda = 0,95...0,99$
 Range of application
 DC 176...280 V

VS LIGHTING SOLUTIONS
 Vossloh-Schwabe Deutschland GmbH
 Stuttgarter Straße 61/1, 73614 Schorndorf
 Electronic Controlgear for LED
Type ECXe 600.774
 Ref.-No. 187647
 Made in China

OUTPUT

Irated [mA]	200 - 600
Urated [V]	120 - 320
Prated [W]	50 - 115
tc [°C]	75
ta [°C]	-25...+50
Uout [V]	<350

Non isolated







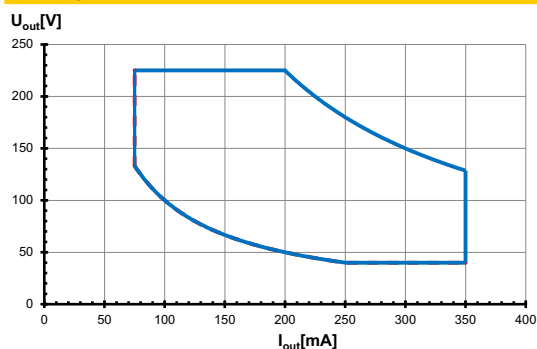



 INPUT Un = 220...240 V~ In = 0,3...0,94 A fN = 0/50/60 Hz λ = 0,95...0,99 Range of application DC 176...280 V	 VS LIGHTING SOLUTIONS Vossloh-Schwabe Deutschland GmbH Stuttgarter Straße 61/1, 73614 Scharndorf Electronic Controlgear for LED Type ECXe 800.775 Ref.-No. 187648 Made in China	OUTPUT <table border="1"> <tr> <td>Irated [mA]</td> <td>350 - 800</td> </tr> <tr> <td>Rated [V]</td> <td>120 - 320</td> </tr> <tr> <td>Prated [W]</td> <td>80 - 150</td> </tr> <tr> <td>Tc [°C]</td> <td>75</td> </tr> <tr> <td>Ta [°C]</td> <td>-20...+50</td> </tr> <tr> <td>Uout [V]</td> <td><350</td> </tr> </table> Non isolated	Irated [mA]	350 - 800	Rated [V]	120 - 320	Prated [W]	80 - 150	Tc [°C]	75	Ta [°C]	-20...+50	Uout [V]	<350
Irated [mA]	350 - 800													
Rated [V]	120 - 320													
Prated [W]	80 - 150													
Tc [°C]	75													
Ta [°C]	-20...+50													
Uout [V]	<350													

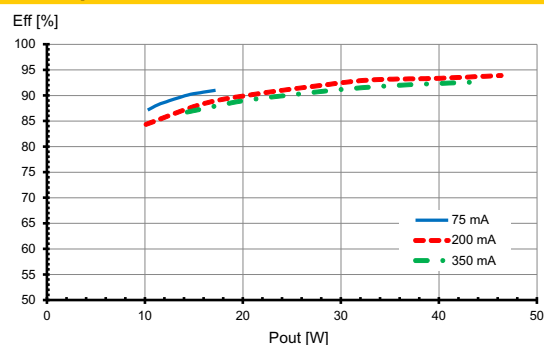


Typ. performance graphs for 187643 / Type ECXe 350.770

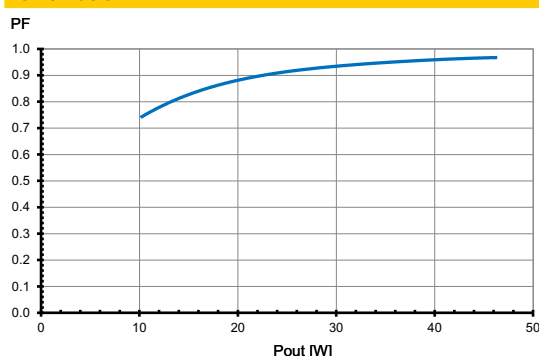
Working area



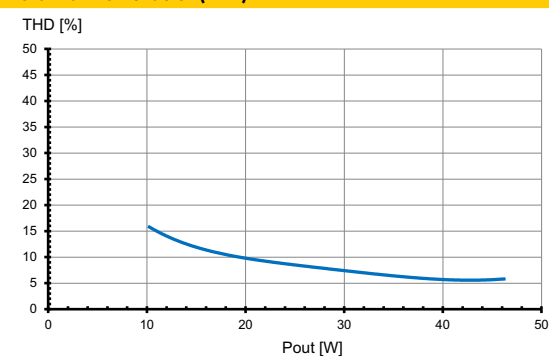
Efficiency



Power factor

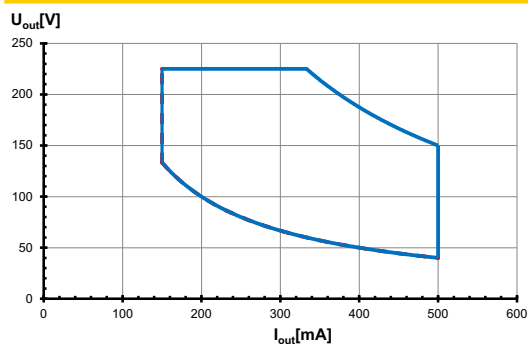


Total harmonic factor (THD)

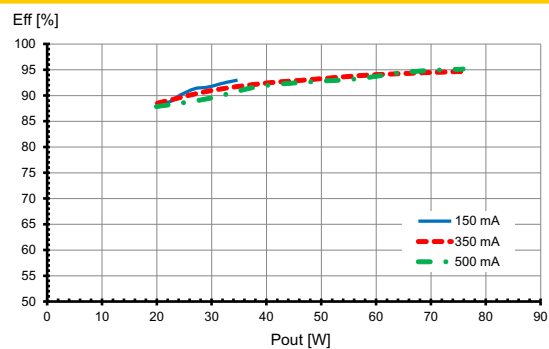


Typ. performance graphs for 187644 / Type ECXe 500.771

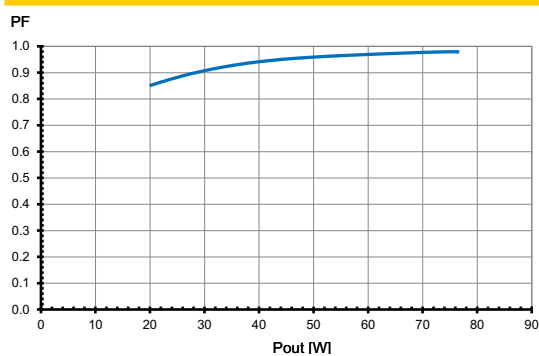
Working area



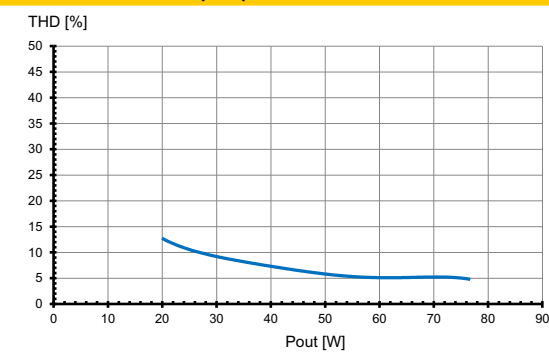
Efficiency



Power factor

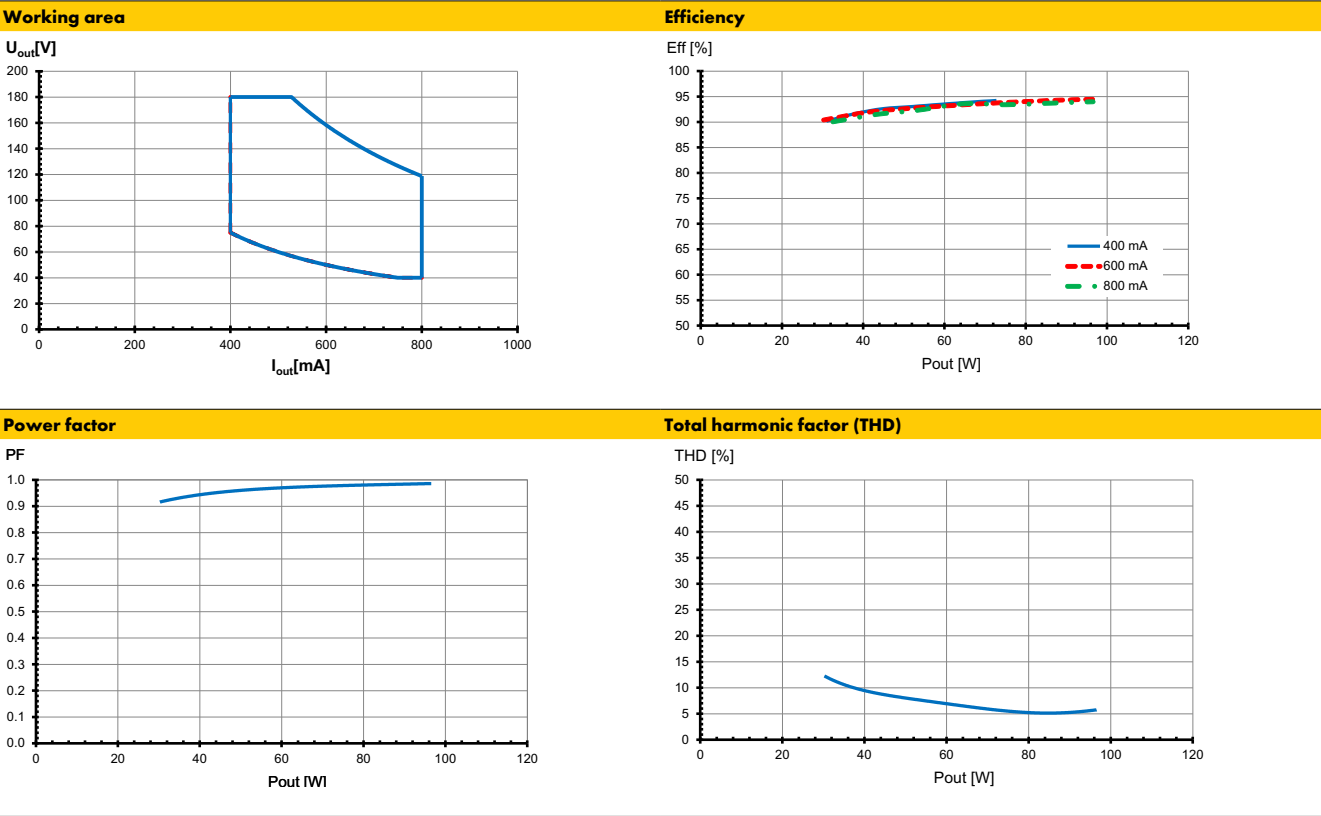


Total harmonic factor (THD)

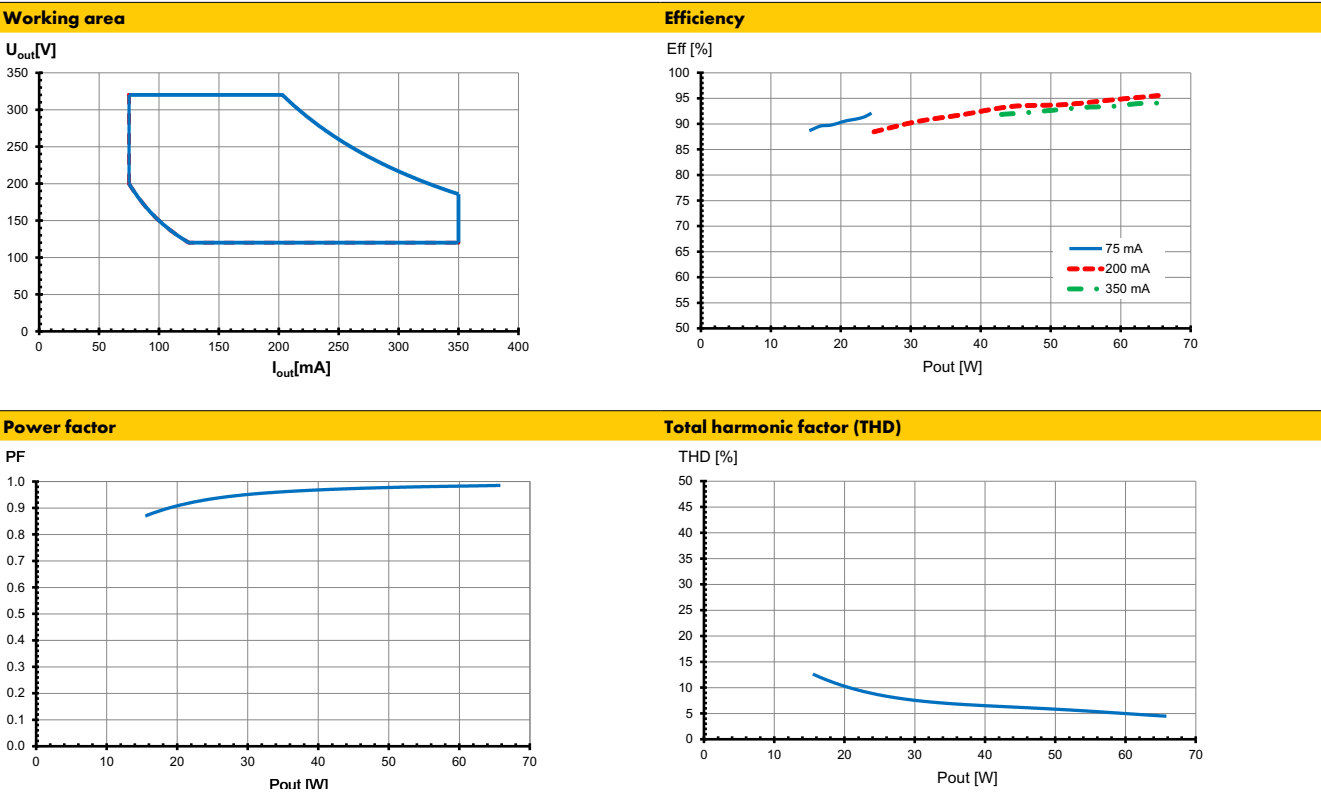


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Typ. performance graphs for 187645 / Type ECXe 800.772

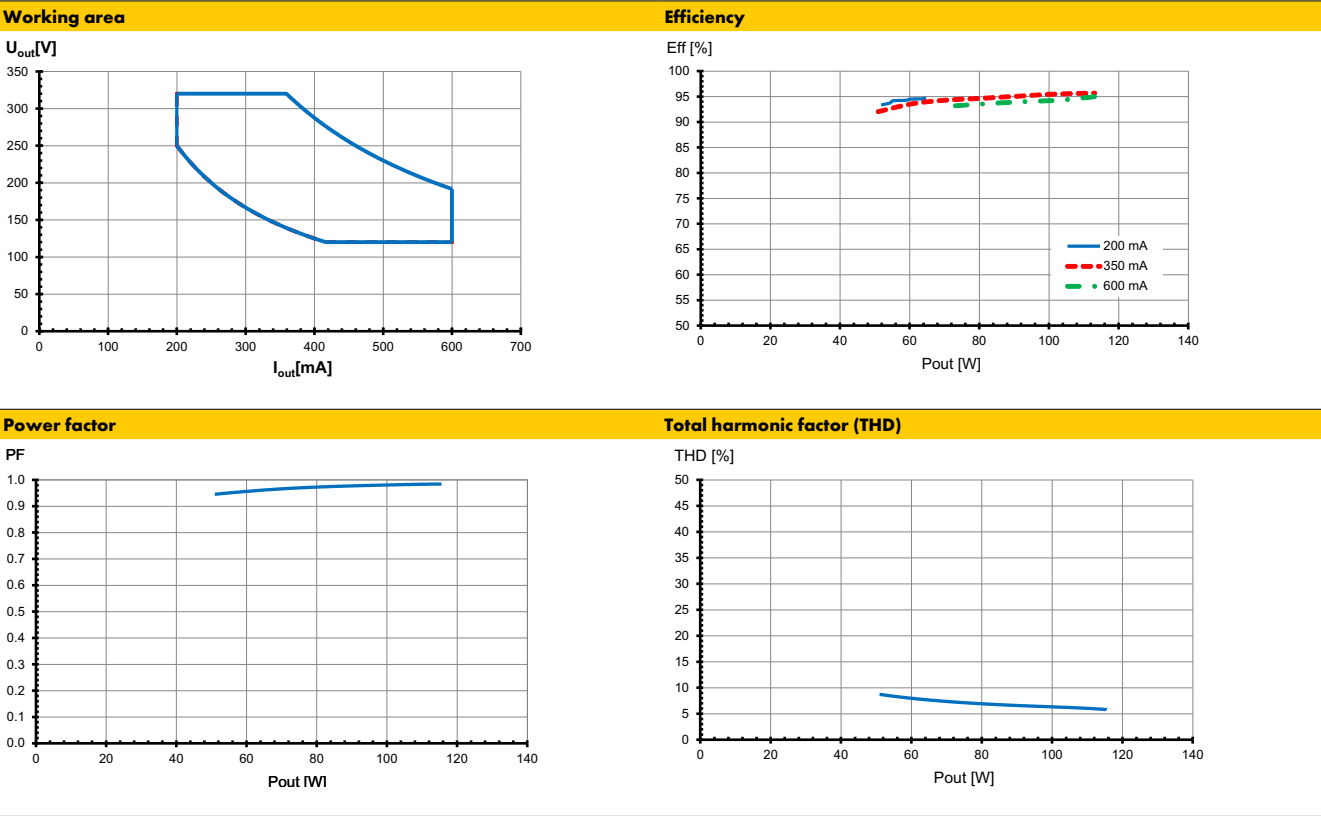


Typ. performance graphs for 187646 / Type ECXe 350.773

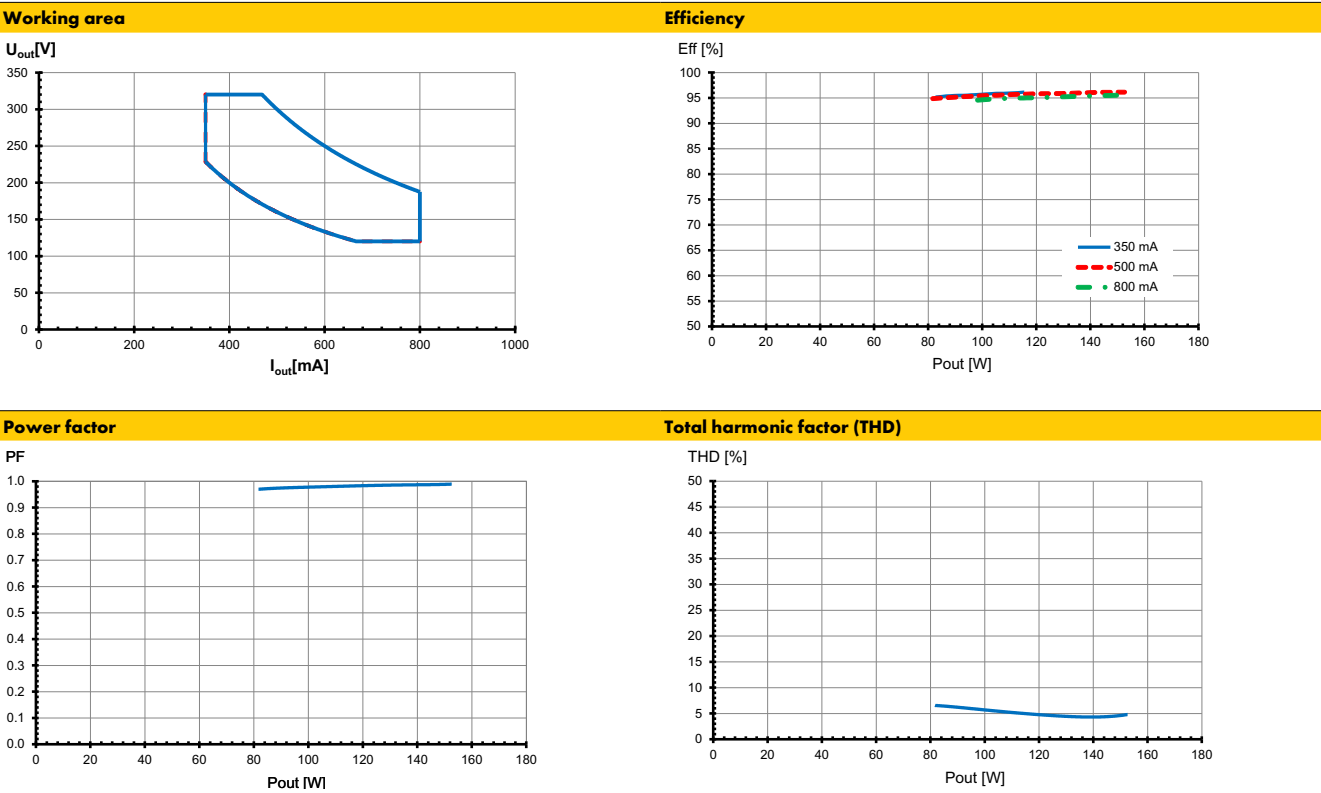


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Typ. performance graphs for 187647 / Type ECXe 600.774



Typ. performance graphs for 187648 / Type ECXe 800.775



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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
Surges between L/N–PE: up to 2 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.
In case of overheating the control gear will reduce the output or 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.

Output voltage (U_{OUT})

According to EN 61347-1, U_{OUT} indicates which voltage can occur at the output terminals directly or between the output terminals and the PE terminal of the LED driver. This value is given for non-insulated drivers.

The used LED module must have an insulation voltage that is at least as high as the specified U_{OUT} voltage of the driver.

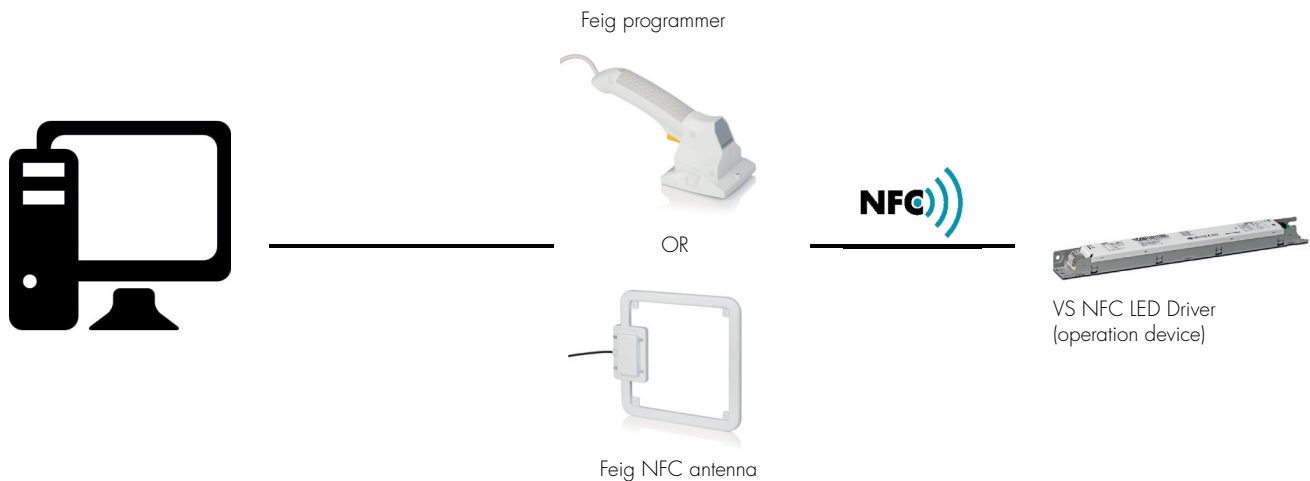
DC and emergency lighting operation

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 (E_{OFx}): 100 % (non-adjustable)
- DC range: 176–280 V
- DC operation: 3 hrs. (acc. to EN 50172)

System architecture

- Feig Programmer or the Feig NFC antenna, contactless programming of NFC LED drivers is possible.
- The LED driver is programmed via NFC in a de-energised state.
- The exact description of the programming can be found in the operation manual of the NFC programmer.



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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

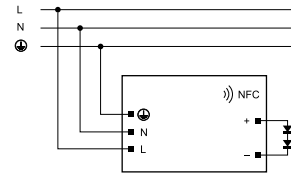
Mechanical mounting

- 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 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 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		B 10 A	B 13 A	B 16 A
ECXe 350.770	187643	22	29	36
ECXe 500.771	187644	9	12	15
ECXe 800.772	187645	11	14	18
ECXe 350.773	187646	12	16	20
ECXe 600.774	187647	11	14	18
ECXe 800.775	187648	7	9	12
Automatic cut-out type C		C 10 A	C 13 A	C 16 A
ECXe 350.770	187643	38	49	61
ECXe 500.771	187644	15	20	25
ECXe 800.772	187645	19	24	30
ECXe 350.773	187646	21	27	34
ECXe 600.774	187647	16	20	25
ECXe 800.775	187648	12	16	19

- 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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