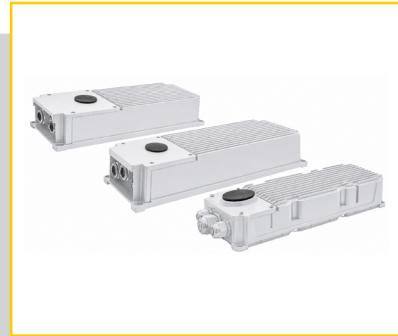


CC PrimeLine NFC HP DMX/DALI2 Dx



PRIMELINE NFC HP DMX/DALI2 Dx

187628, 187629, 187630, 187631, 187632

Typical Applications

- Stadium lighting



PrimeLine NFC HP DMX/DALI2 Dx

- PERFECTLY SUITABLE FOR STADIUM LIGHTING
HIGH POWER APPLICATIONS
- CONFIGURATION VIA NFC
- DIMMABLE: DMX512/RDM, DALI (ED. 2)
- INTEGRATED 16 V DC DALI-2 BUS POWER SUPPLY
- AUX POWER SUPPLY: 24 V / 125 mA
- VERY LOW RIPPLE CURRENT
- LONG SERVICE LIFE:
UP TO 100.000 HRS.
- PRODUCT GUARANTEE: 5 YEARS



PrimeLine NFC HP DMX/DALI2 Dx

Product features

- Stadium lighting casing shape

Functions

- Selectable current output via NFC interface
- Programmable via NFC interface (contactless)
 - Dimming Mode: DALI2/DMX
 - Timing dimming (Midnight dimming)
 - LED Driver OTP (integrated protection)
 - Luminaire OTP (NTC terminals)
 - Constant Lumen Output (CLO)

Electrical features

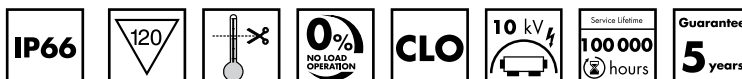
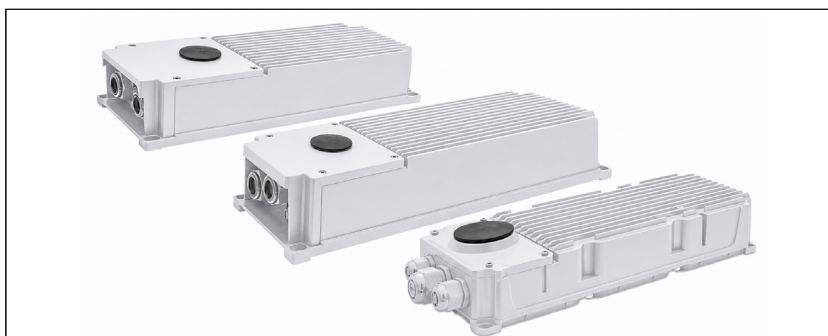
- Mains voltage: 200–400 V AC $\pm 10\%$
- Mains frequency: 50–60 Hz
- Wire terminals
 - Input (L, N, G): 1.0–2.5 mm² (16 AWG–12 AWG)
 - Output, NTC, AUX: 1.0–2.5 mm² (16 AWG–12 AWG)
 - Dimming: 0.5–1.5 mm² (22 AWG–16 AWG)
- Cable glands
 - Input (L, N, G): M25
 - Output, NTC, AUX: M25
 - Dimming: M16
- Power factor at full load: > 0.95
- Max. working voltage (U_{OUT}):
 - 550 V (187628),
 - 600 V (187629, 187630, 187631, 187632)

Dimming

- DALI2
 - Dimming range: 1-100%
- DMX512/RDM
 - Dimming range: 0.1-100%

Safety features

- Protection against transient main peaks up to 10 kV (between L and N) and up to 10 kV (between L/N and PE)
- Electronic short-circuit protection (SCP)
- Overtemperature protection (OTP)
- Over-voltage protection (OVP)
- Overpower protection (OPP)
- Degree of protection: IP66
- Protection class I



Applied standards

- EN 61000-3-2
- EN 61000-3-3
- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 62384
- EN 62493
- EN 62386-101 DALI Ed. 2, Part 101, 102, 207
- EN 62386, Part 150, 250, 251, 252, 253
- EN 55015

Dimensions

Ref. No.	Casing	Length mm	Width mm	Height mm
187628	M108	335	143.5	58.6
187629	M109	400	150	80.5
187630	M109.1	400	150	80.5
187631	M110	500	150	80.5
187632	M110	500	150	80.5

Packaging units

Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
187628	2	42	3625
187629	2	36	4750
187630	2	36	5250
187631	1	60	7000
187632	1	60	7000



Dimming Analogue



Current adjustment



Energy & diagnostic data:

DALI parts 251, 252, 253

Product guarantee

5 years

The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage.

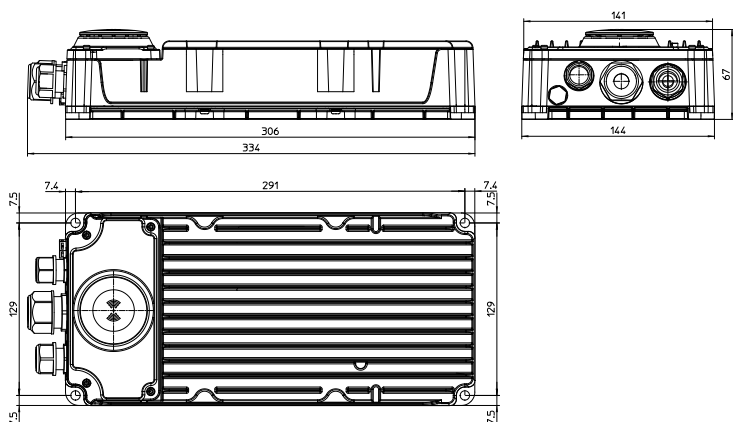
(www.vossloh-schwabe.com)

We will be happy to send you these conditions upon request.

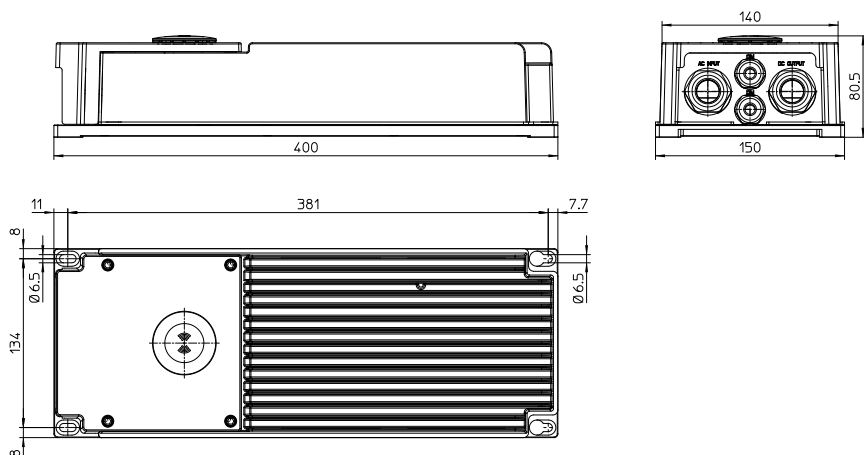
The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Product drawings

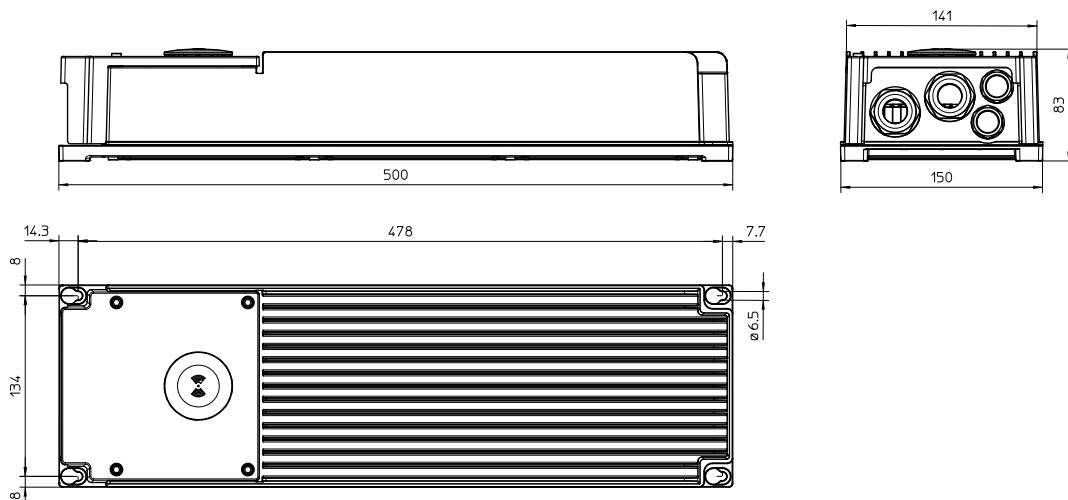
M108



M109



M110



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Electrical characteristics

Max. output W	Channels	Type	Ref. No.	Nominal input voltage range (50–60 Hz) V AC (± 10 %)	Inrush current A / μ s (400 V)	Current output DC mA (± 5%)	Factory settings mA	Voltage output DC (V)	THD at full load %	Efficiency at full load % (400 V)	Ripple 100 Hz %
680	1x 680 W	ECXd 2600.759	187628	200–400	15 / 2230	260–2600	1400	200–500	2	96.5	≤ 1
880	1x 880 W	ECXd 3400.760	187629	200–400	15 / 2170	340–3400	1400	200–500	2	96.5	≤ 1
1200	2x 600 W	ECXd 22300.761	187630	200–400	19 / 3360	230–2300	1400	200–500	5	96.5	≤ 1
1800	3x 600 W	ECXd 32300.762	187631	200–400	23 / 1800	230–2300	1400	200–500	4	96.5	≤ 1
2100	3x 700 W	ECXd 32700.763	187632	200–400	24 / 2280	270–2700	1400	200–500	4	96.5	≤ 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.		
187628	–40	+55	10	80	–40	+85	5	50	+80 (t_c ,life)* +90 (t_c ,max.)*	IP66
187629	–40	+55	10	80	–40	+85	5	50	+80 (t_c ,life)* +90 (t_c ,max.)*	
187630	–40	+50	10	80	–40	+85	5	50	+80 (t_c ,life)* +90 (t_c ,max.)*	
187631	–40	+55	10	80	–40	+85	5	50	+80 (t_c ,life)* +90 (t_c ,max.)*	
187632	–40	+55	10	80	–40	+85	5	50	+80 (t_c ,life)* +90 (t_c ,max.)*	

* t_c ,life: (t_c , warranty) | t_c ,max.: (max. allowed t_c temperature)

Expected service life time

at operation temperatures at t_c point

Operation current	Ref. No.														
	187628			187629			187630			187631			187632		
All	70 °C	80 °C	90 °C	70 °C	80 °C	90 °C	70 °C	80 °C	90 °C	70 °C	80 °C	90 °C	70 °C	80 °C	90 °C
hrs.	100.000	50.000	30.000	100.000	50.000	30.000	100.000	50.000	30.000	100.000	50.000	30.000	100.000	50.000	30.000

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Product labels

VS LIGHTING SOLUTIONS
Vossloh-Schwabe Deutschland GmbH
Stuttgarter Straße 61/1, 73614 Schorndorf
Electronic Converter for LED
Type ECXd 3400.760
Ref.-No. 187629
Made in China

INPUT

U _N	200...400 V~
I _N	5.0 A max.
P _N	940 W
f _N	50...60 Hz
λ	0.9C...0.98

OUTPUT

I _{rated} per channel	340...3400 mA
U _{rated} per channel	200...500 V
U _{out}	600 V
Rated total max. power	880 W
Output Channel	1x 880 W
t _a (200-277 V~)	-40...50 °C
t _a (277-400 V~)	-40...55 °C
t _c	90 °C

EL, DALI2, DMX512/RDM, CE, UK, CA, ENEC, 110, IP66

VS LIGHTING SOLUTIONS
Vossloh-Schwabe Deutschland GmbH
Stuttgarter Straße 61/1, 73614 Schorndorf
Electronic Converter for LED
Type ECXd 22300.761
Ref.-No. 187630
Made in China

INPUT

U _N	200...400 V~
I _N	6.4 A max.
P _N	1265 W
f _N	50...60 Hz
λ	0.9C...0.98

OUTPUT

I _{rated} per channel	230...2300 mA
U _{rated} per channel	200...500 V
U _{out}	600 V
Rated total max. power	1200 W
Output Channel	2x 600 W
t _a (200-277 V~)	-40...45 °C
t _a (277-400 V~)	-40...50 °C
t _c	90 °C

EL, DALI2, DMX512/RDM, CE, UK, CA, ENEC, 110, IP66

VS LIGHTING SOLUTIONS
Vossloh-Schwabe Deutschland GmbH
Stuttgarter Straße 61/1, 73614 Schorndorf
Electronic Converter for LED
Type ECXd 32300.762
Ref.-No. 187631
Made in China

INPUT

U _N	200...400 V~
I _N	10 A max.
P _N	1950 W
f _N	50...60 Hz
λ	0.9C...0.98

OUTPUT

I _{rated} per channel	230...2300 mA
U _{rated} per channel	200...500 V
U _{out}	600 V
Rated total max. power	1800 W
Output Channel	3x 600 W
t _a (200-277 V~)	-40...45 °C
t _a (277-400 V~)	-40...50 °C
t _c	85 °C

EL, DALI2, DMX512/RDM, CE, UK, CA, ENEC, 110, IP66

VS LIGHTING SOLUTIONS
Vossloh-Schwabe Deutschland GmbH
Stuttgarter Straße 61/1, 73614 Schorndorf
Electronic Converter for LED
Type ECXd 32700.763
Ref.-No. 187632
Made in China

INPUT

U _N	200...400 V~
I _N	11.5 A max.
P _N	2250 W
f _N	50...60 Hz
λ	0.9C...0.98

OUTPUT

I _{rated} per channel	270...2700 mA
U _{rated} per channel	200...500 V
U _{out}	600 V
Rated total max. power	2100 W
Output Channel	3x 700 W
t _a (200-277 V~)	-40...45 °C
t _a (277-400 V~)	-40...50 °C
t _c	90 °C

EL, DALI2, DMX512/RDM, CE, UK, CA, ENEC, 110, IP66

VS LIGHTING SOLUTIONS
Vossloh-Schwabe Deutschland GmbH
Stuttgarter Straße 61/1, 73614 Schorndorf
Electronic Converter for LED
Type ECXd 2600.759
Ref.-No. 187628
Made in China

INPUT

U _N	200...400 V~
I _N	3.8 A max.
P _N	760 W
f _N	50...60 Hz
λ	0.9C...0.98

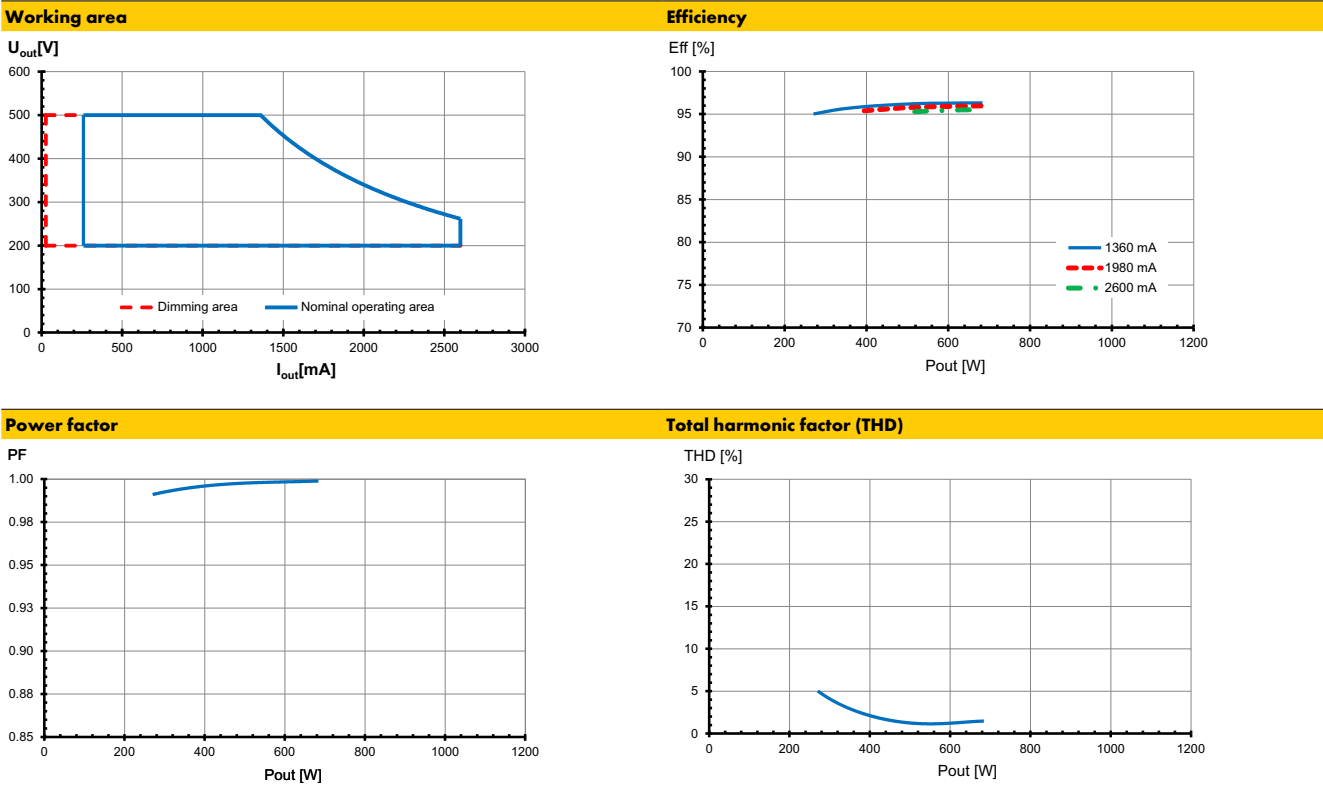
OUTPUT

I _{rated} per channel	260...2600 mA
U _{rated} per channel	200...500 V
U _{out}	600 V
Rated total max. power	680 W
Output Channel	1x 680 W
t _a (200-277 V~)	-40...50 °C
t _a (277-400 V~)	-40...55 °C
t _c	90 °C

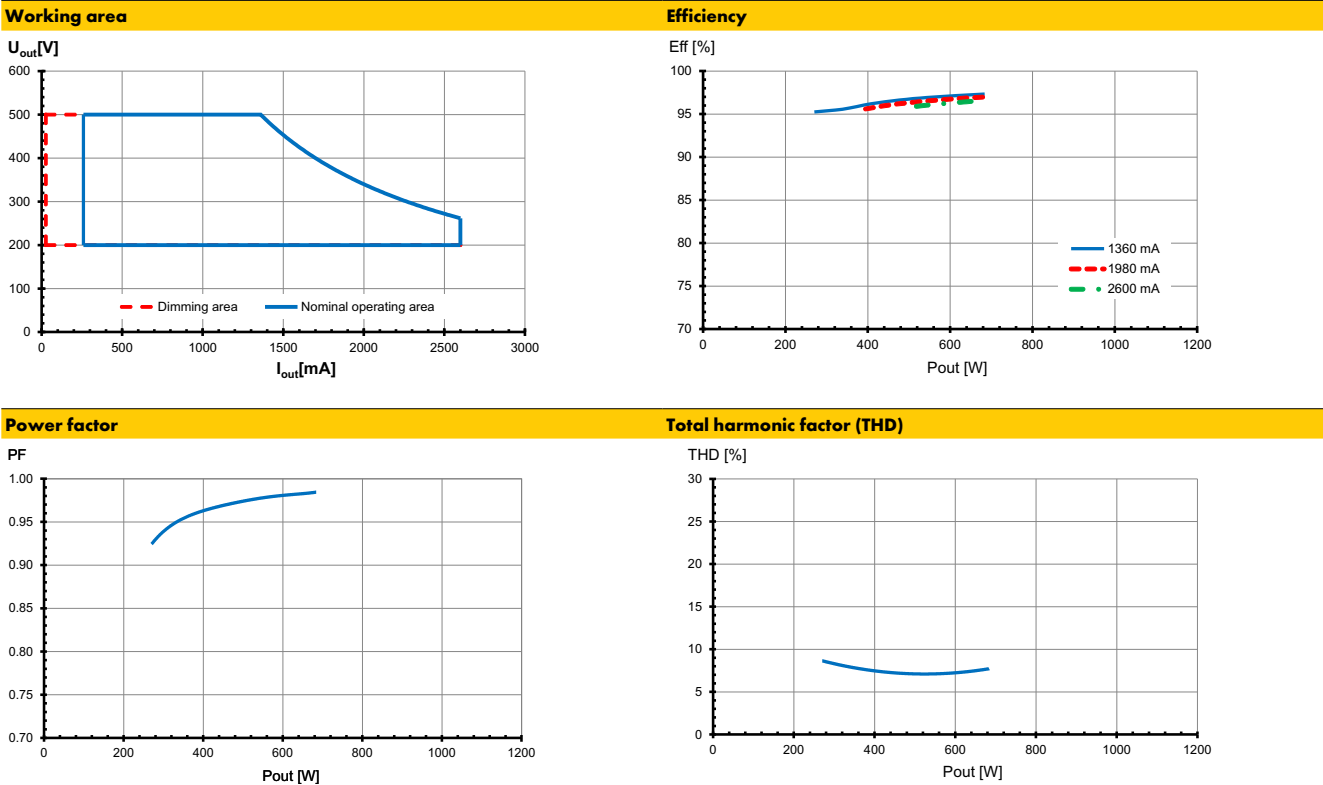
CE, EL, DALI2, DMX512/RDM, UK, CA, ENEC, 110, IP66

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Typ. performance graphs for 187628 at 230V / Type ECXd 2600.759

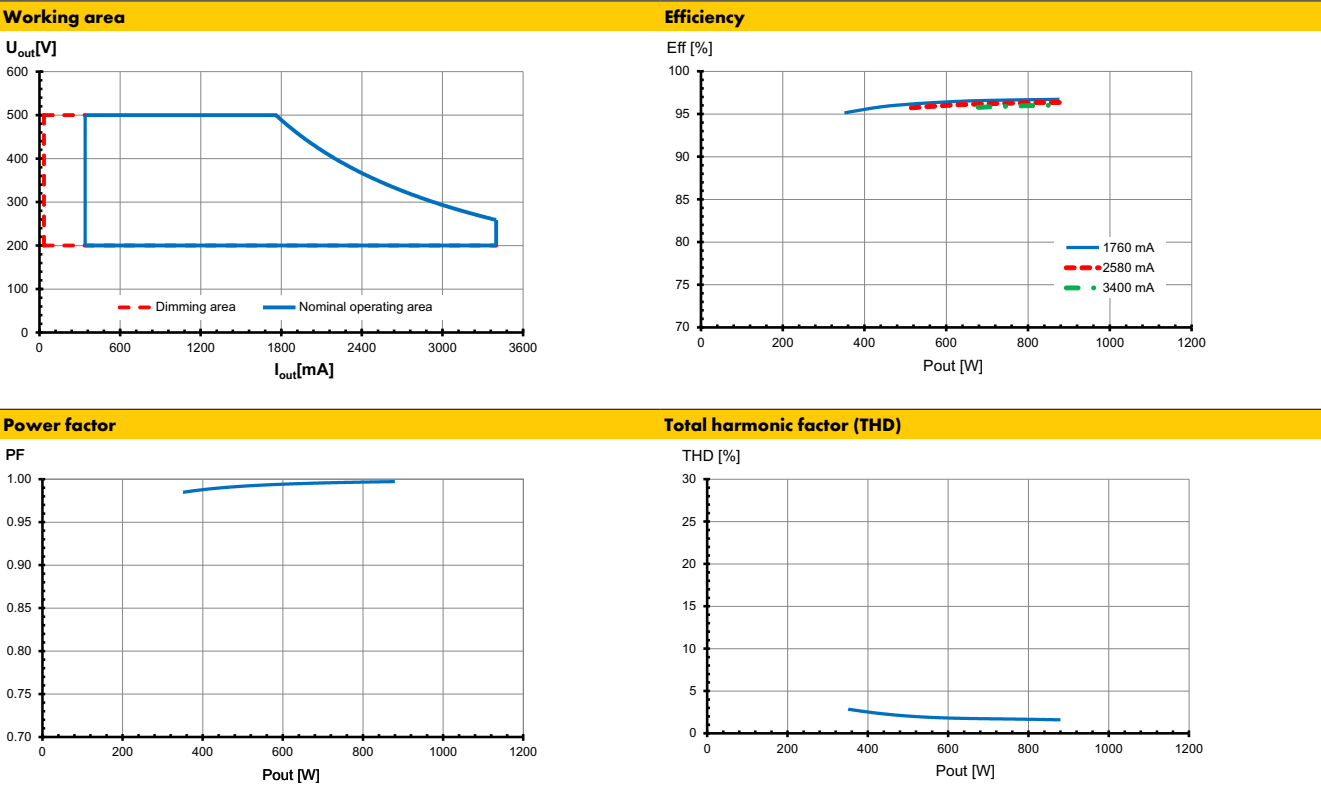


Typ. performance graphs for 187628 at 400V / Type ECXd 2600.759

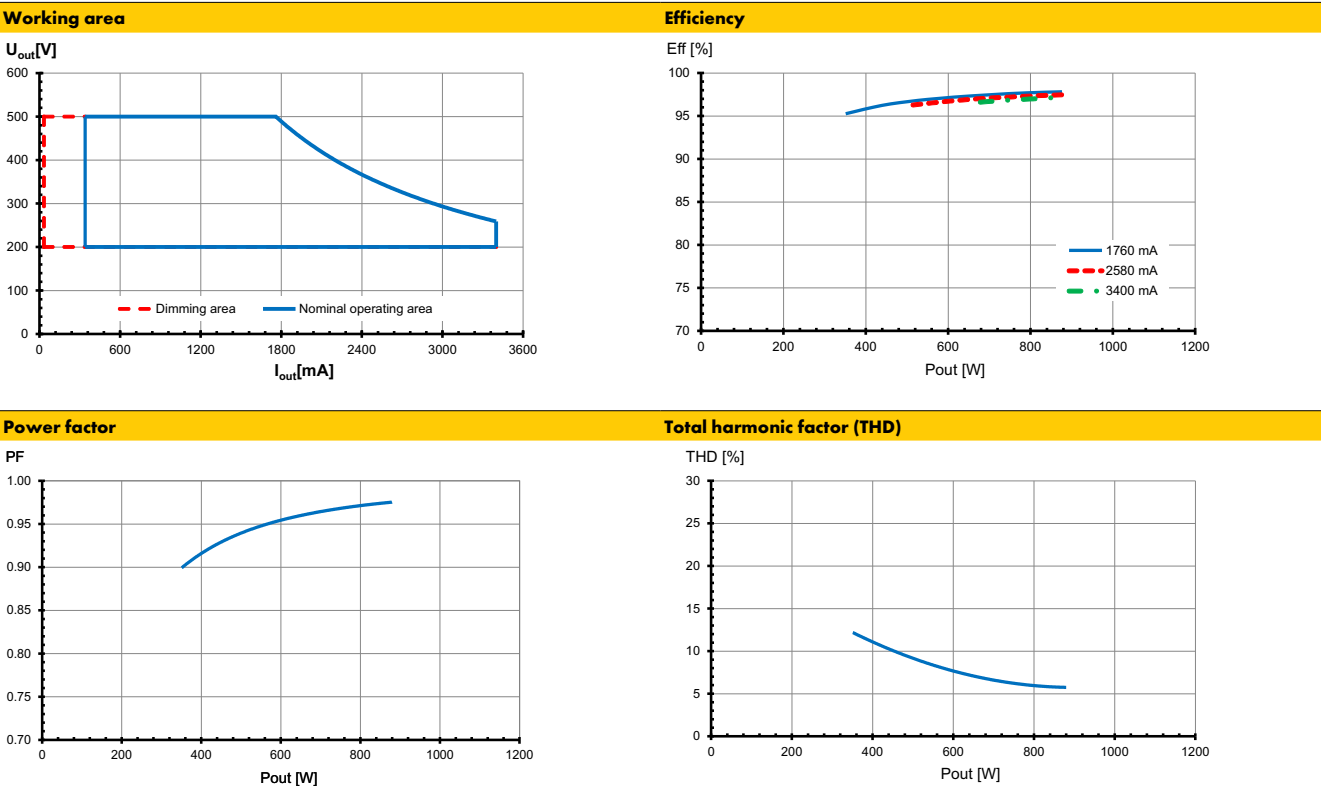


The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Typ. performance graphs for 187629 at 230V / Type ECXd 3400.760

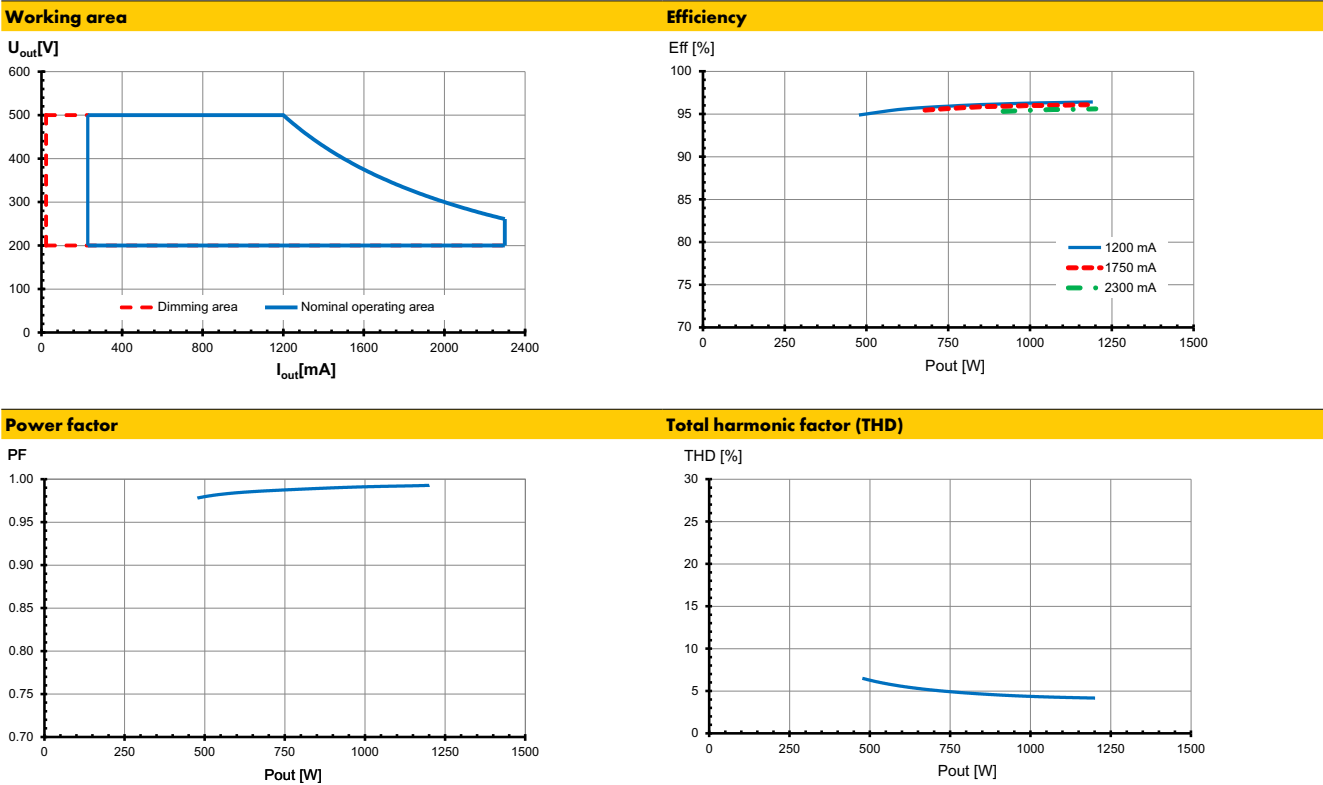


Typ. performance graphs for 187629 at 400V / Type ECXd 3400.760

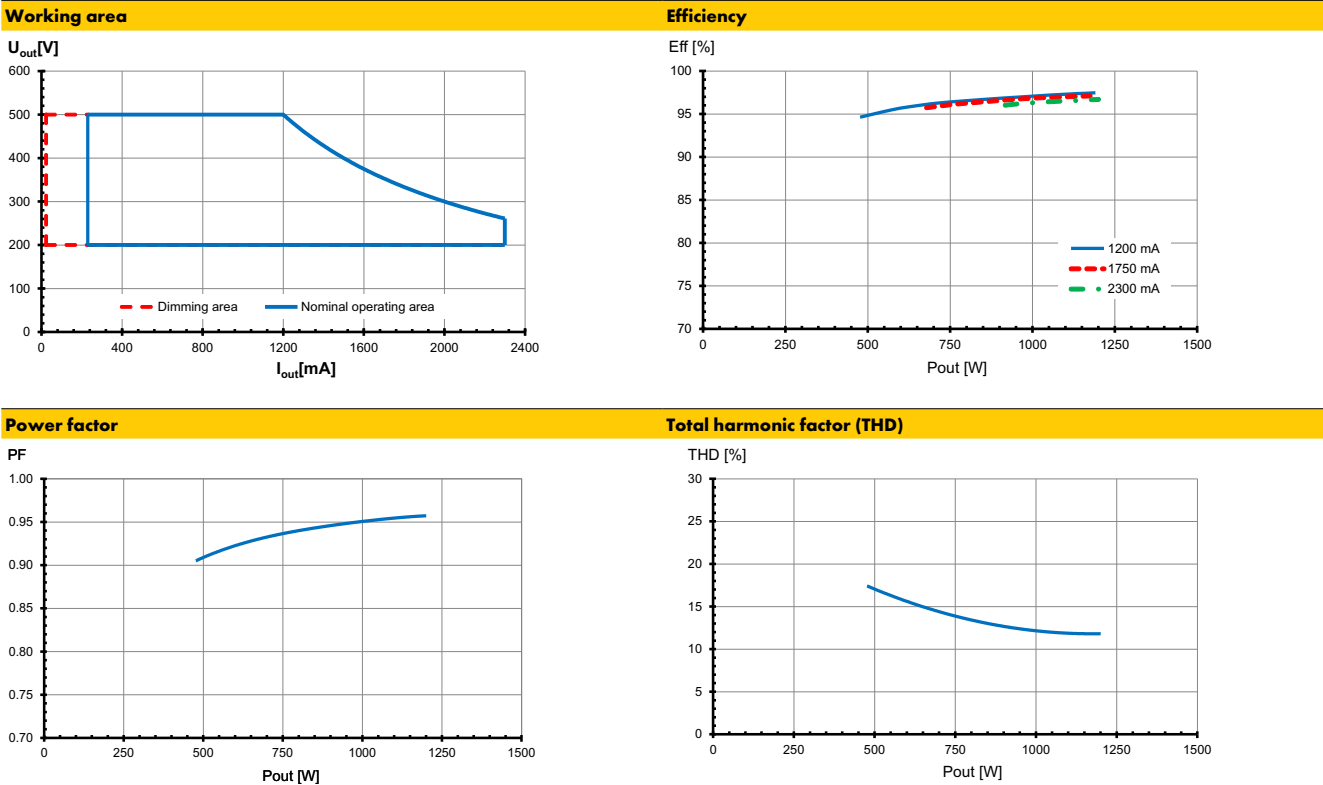


The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Typ. performance graphs for 187630 at 230V / Type ECXd 22300.761

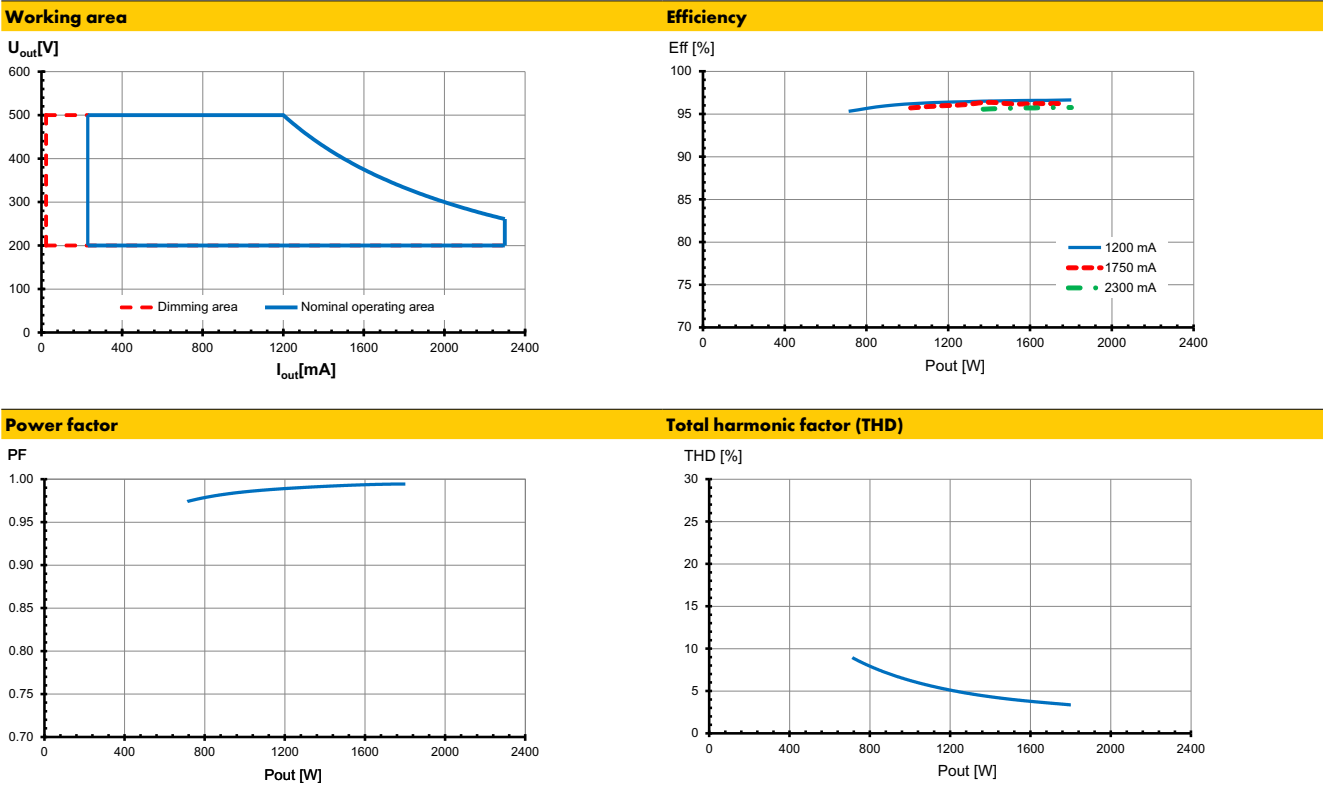


Typ. performance graphs for 187630 at 400V / Type ECXd 22300.761

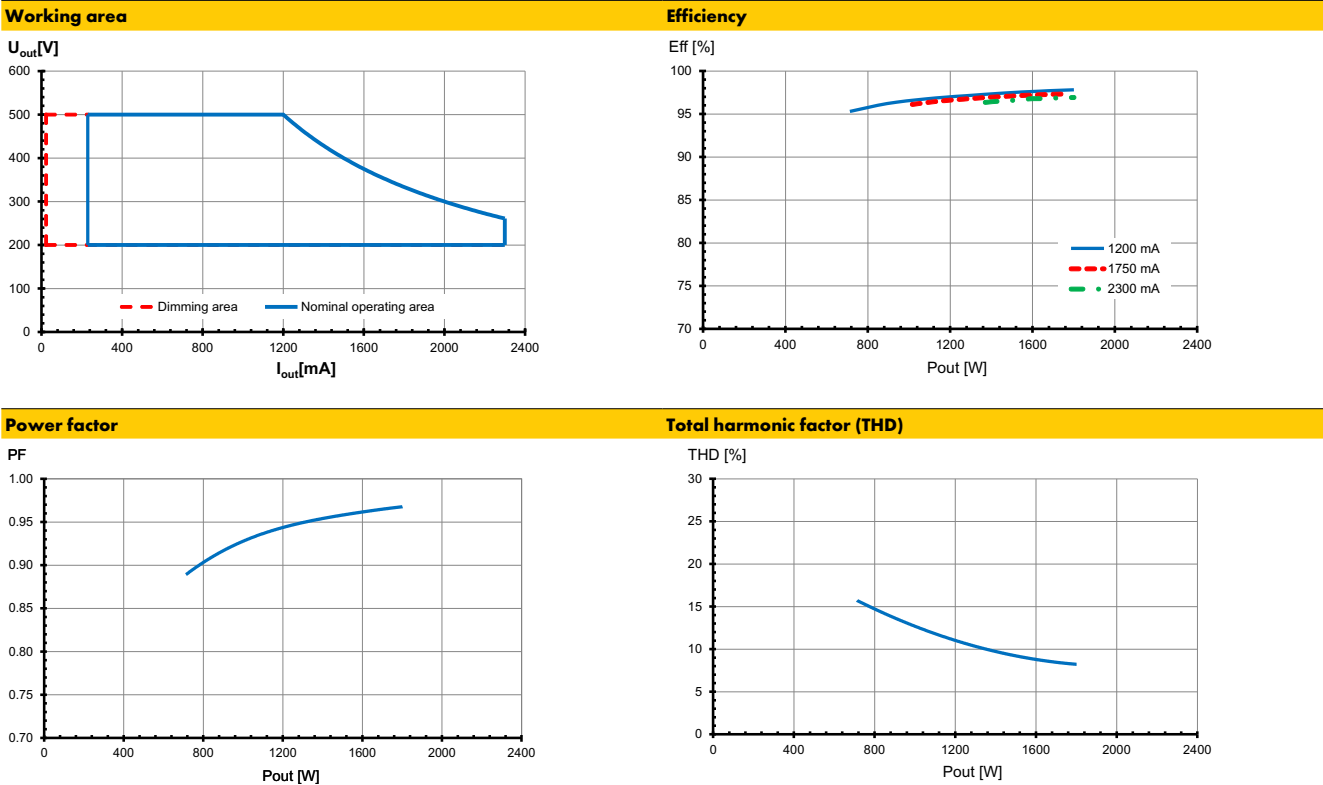


The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Typ. performance graphs for 187631 at 230V / Type ECXd 32300.762

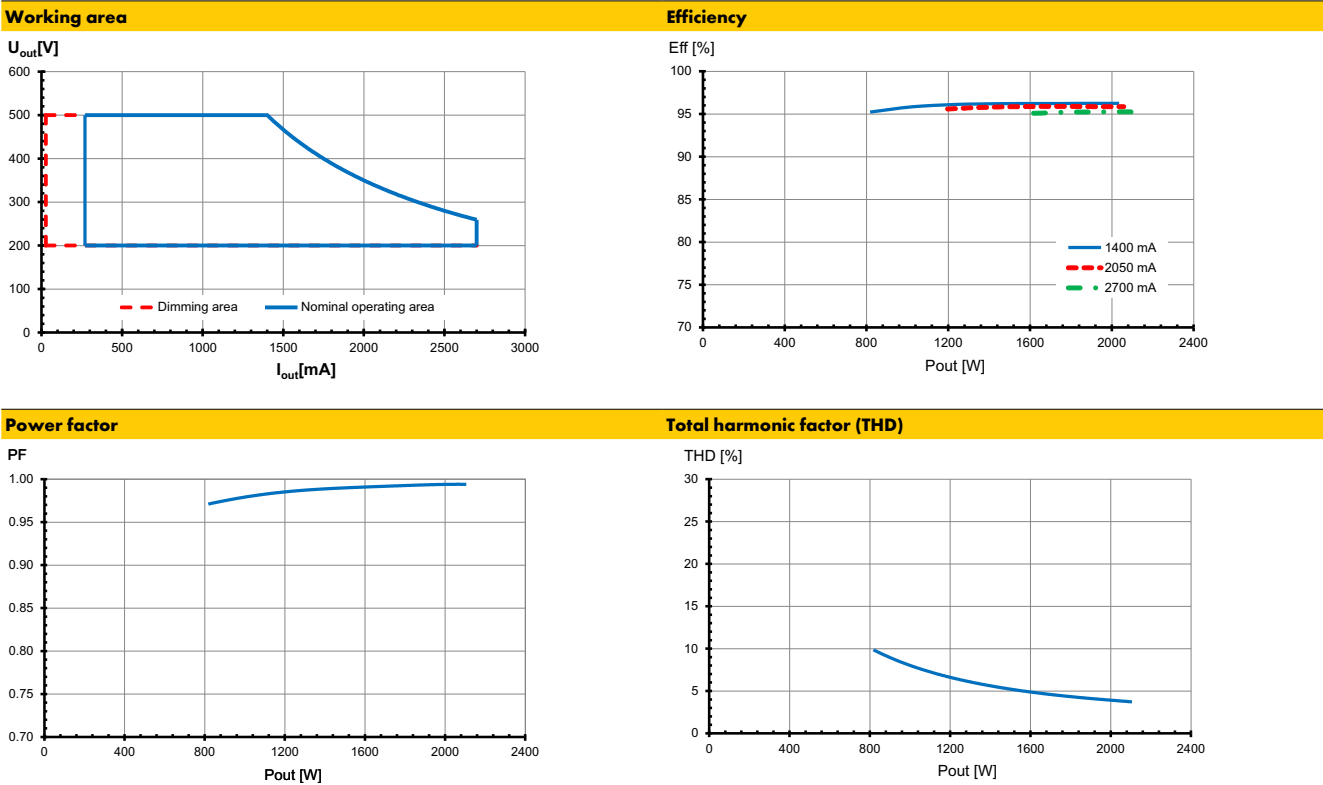


Typ. performance graphs for 187631 at 400V / Type ECXd 32300.762

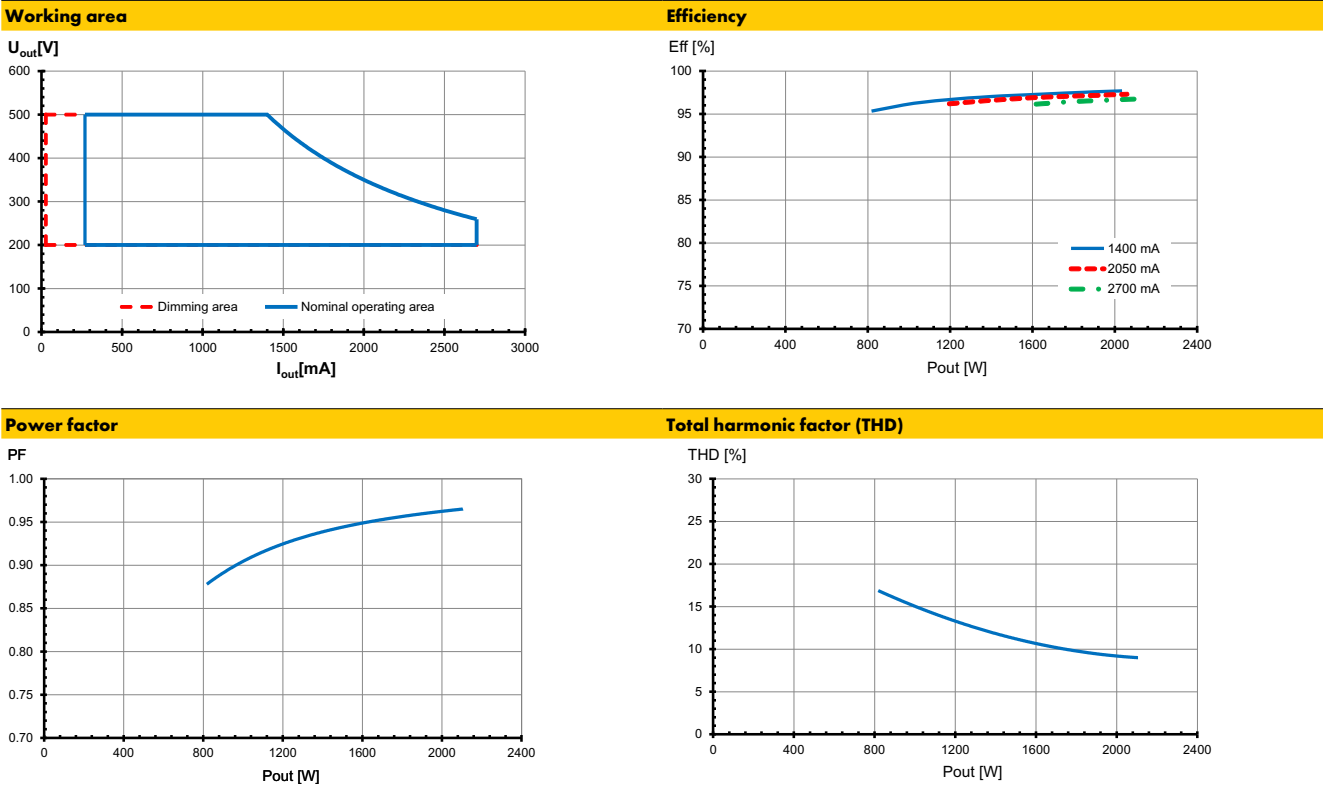


The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Typ. performance graphs for 187632 at 230V / Type ECXd 32700.763



Typ. performance graphs for 187632 at 400V / Type ECXd 32700.763



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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 10 kV
Surges 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 LED drivers have overload protection. In case of overload the control gear will reduce the output current.
- Overtemperature: The control gear has overheating protection. In case of overheating the control gear will reduce the output current.
- No load operation: The control gear is protected against no load operation with automatic restart function.
- 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.

NTC for thermal protection of the LED module

The LEDs can be thermally protected by the NTC interface (Negative Temperature Coefficient Resistor) of the operating device, which ensures the current will be reduced when a critical temperature is reached. Any arbitrary NTC can be configured via NFC interface. Connect an NTC to the LED module connectors which are connected with the LED driver as shown in the wiring diagram.

- Max. NTC resistor: 100 k Ω , (10 k Ω)
- NTC: 100 k Ω HM, B value: 4050; 10 k Ω HM, NTC B value: 3380 - Tolerance: ± 2 ; other NTC - Tolerance ± 5 .

MidNight function

Automatic dimming via an integrated timer (no real-time clock). Five independent dimming levels and zones can be set using the configurator software.

Constant lumen output (CLO)

The decrease in the luminous flux of an LED module can be compensated over its entire lifetime via a preprogrammed current curve. This not only ensures stable lighting but also saves energy and increases the lifetime of the LEDs.

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DALI / AUX Specifications

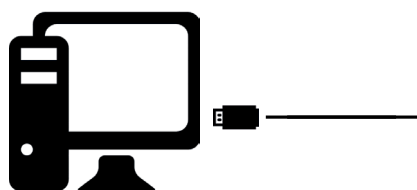
Parameter	Min.	Typ.	Max.	Notes
24V Auxiliary Output Voltage	21.6 V	24 V	26.4 V	Pload > 0.1W
24V Auxiliary Output Current	0 mA	-	125 mA	Auxiliary supply Vaux supplies 24 V DC and is able to deliver 3 W average power. Peak power capacity is 10 W with 25 % duty cycle (T = 5.2 ms)
24V Auxiliary Repetitive Peak Current @6W pulsed output power	-	-	250 mA	250 mA peak for max. duration of 2.2 ms in a 6.0 ms period during which time the average should not exceed 125 mA.
24V Auxiliary Repetitive Peak Current @10W pulsed output power	-	-	425 mA	425 mA peak for max. duration of 1.3 ms in a 5.2 ms period during which time the average should not exceed 125 mA.
Integrated DALI-2 Bus Power Supply Voltage	12 V	16 V	20 V	Voltage is depending on loading and will vary between 12 V–20 V DC
Integrated DALI-2 Bus Power Supply Current	50 mA	-	60 mA	
DALI-2 (High Voltage Level)	9.5 V	16 V	22.5 V	
DALI-2 (Low Voltage Level)	-6.5 V	0 V	6.5 V	
DALI-2 (Dimming Output Range)	1 %	-	100 %	
DALI-2 (Sink Current)	-	-	2.0 mA	
DMX+ to DMX-	- 6 V	-	6 V	
DMX (Dimming Output Range)	1 %	-	100 %	
DMX+/DMX- to chassis	22M Ohm	-	-	
Logic 0 input	-	-	-0.2 V	DMX+ to DMX-
Logic 1 Input	0.2 V	-	-	DMX+ to DMX-
Communication Baud Rate	-	250k bps	-	
On/Off flashing rate		-	18	

Important Notes:

- [1] DALI-2 bus power supply is enabled by factory default and can be switched off through the LED configurer software interface..
- [2] The DALI-2 bus power supply and the 24V auxiliary source share the common negative terminal. The 24V auxiliary source can be used either in stand alone mode or share the negative pole with the DALI line.
- [3] Do not connect multiple 24V auxiliary power supplies in parallel.

System architecture

- You can program the LED drivers contactless via a NFC Feig programmer. Successfully tested NFC programmers are the FEIG PRH101 and the FEIG CPR30+
- The LED driver has to be programmed in a de-energised state.
- The use of the NFC programmer is flexible in the production or already in the pre-assembly process. A complex commissioning is not required. The operation and parameterization is done in the simplest way. Nearly all operating parameters can be individually programmed and updated.
- The exact description of the programming can be found in the application guide of the VS LED Configurer Tool.



Feig-Programmiergerät, Handgerät FEIG-PRH101, FEIGCPR30



PrimeLine NFC HP DMX/DALI2 Dx LED-Treiber

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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

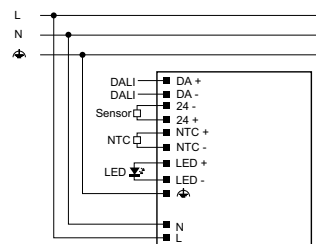
Mechanical mounting

- Mounting position: Built-in: Any position inside a luminaire is allowed.
Independent operation is as well allowed.
- Mounting location: Installation in outdoor luminaires: degree of protection for luminaire with water protection rate ≥ 4 (e.g. IP54 required).
- Degree of protection: IP66
- 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 1.0–2.5 mm² on input side and 1.0–2.5 mm² on output side.
- Stripped length: 8.5–9.5 mm
- Wiring: 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		B 10 A	B 13 A	B 16 A
ECXd 2600.759	187628	2	2	3
ECXd 3400.760	187629	2	2	3
ECXd 22300.761	187630	1	2	2
ECXd 32300.762	187631	1	1	1
ECXd 32700.763	187632	–	1	1
Automatic cut-out type C		C 10 A	C 13 A	C 16 A
ECXd 2600.759	187628	2	3	4
ECXd 3400.760	187629	2	2	3
ECXd 22300.761	187630	1	2	2
ECXd 32300.762	187631	1	1	1
ECXd 32700.763	187632	–	1	1

- 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.
- **EU compliance information**
Hereby, Vossloh-Schwabe Deutschland GmbH declares that the radio equipment type PrimeLine NFC S MidNight is in compliance with Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at the following internet address: www.vossloh-schwabe.com.

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