

CC LINEAR DIP SWITCH



EASYLINE DIP SWITCH L

187325, 187326, 187327, 187328, 187329, 187415

Typical Applications

Built-in in linear luminaires for

- Office lighting
- Industry Lighting

EasyLine DIP switch L

- **SELECTABLE OUTPUT CURRENT VIA DIP SWITCH**
- **VERY LOW RIPPLE CURRENT: < 3%**
- **ENEC APPROVED**
- **LONG SERVICE LIFE:
UP TO 100,000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**



EasyLine DIP switch L

Product features

- Linear casing shape

Functions

- Selectable current output via DIP switch

Electrical features

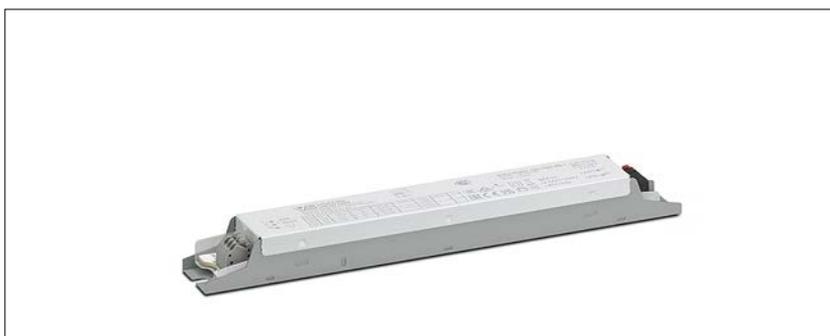
- Mains voltage: 220–240 V ±10%
- Mains frequency: 50–60 Hz
- Push-in terminals: 0.5–1.5 mm²
- Power factor at full load: 0.95
- Max. working voltage (U_{OUT}): 250 V except 275 V for 187326
- Secondary side switching of LED modules is not allowed.

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
- Overload 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
187325	30	3420	132
187415	30	3420	151
187326	30	3420	160
187327	30	3420	151
187328	30	3420	160
187329	30	3420	160



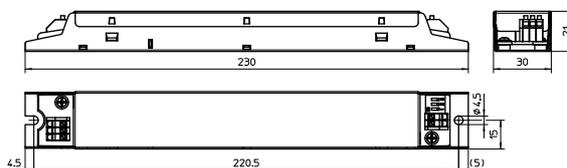
Applied standards

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



Dimensions

- Casing: M6.2
- Length: 230 mm
- Width: 30 mm
- Height: 21 mm



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.

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 %
26	ECXe 350.618	187325	220–240	235–210	20 / 165	200	40–130	<9	>92	<3
32.5						250				
39						300				
45.5						350				
38	ECXe350.664	187415	220–240	330–300	29 / 228	200	90–190	< 5	> 94	<3
47.5						250				
57						300				
66.5						350				
48	ECXe 350.619	187326	220–240	430–380	35/200	200	120–240	<5	>95	<3
60						250				
72						300				
84						350				
45.5	ECXe 500.620	187327	220–240	335–305	31/220	350	40–130	<5	>94	<3
52						400				
58.5						450				
65						500				
63	ECXe 500.621	187328	220–240	465–415	37/200	350	90–180	<6	>95	<3
72						400				
81						450				
90						500				
71.5	ECXe 700.622	187329	220–240	470–420	36/190	550	40–130	<5	>93	<3
78						600				
84.5						650				
91						700				

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	5	60	-40	+85	5	95	+80	IP20

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LED Drivers – EasyLine DIP switch L

Operating Life

at operation temperatures at t_c point

Operation current	Ref. No.	
all types	all types	
all types	80°C	70°C
hrs.	50,000	100,000

DIP switch settings

Pin 1	Pin 2	Operation current (mA)		
		187325,	187327,	187329
		187415,	187328	
		186326		
OFF	OFF	200	350	550
ON	OFF	250	400	600
OFF	ON	300	450	650
ON	ON	350	500	700

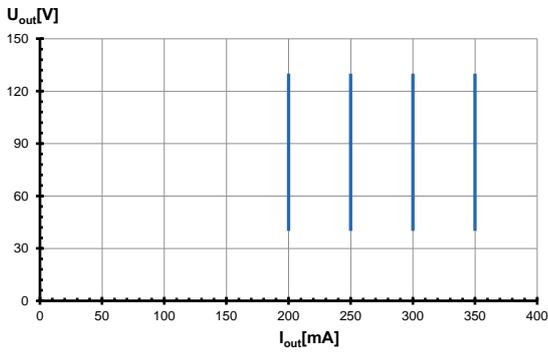
Product labels

<p>INPUT</p> <p>UN=220...240 V~</p> <p>IN = 235...210 mA fN = 50/60 Hz $\lambda = 0,80C...0,97$</p> <p>■ L ■ N ■ ⊕</p>	<p>VSLIGHTING SOLUTIONS Vossloh-Schwabe Deutschland GmbH Stuttgarter Straße 61/1, 73614 Schorndorf</p> <p>Electronic Converter for LED LED 控制装置 Type ECXe 350.618 Ref.-No. 187325 Made in China</p>	<p>OUTPUT ---</p> <table border="1"> <thead> <tr> <th>Pin1</th> <th>Pin2</th> <th>Irated[mA]</th> <th>Prated[W]</th> <th>Urated[V]</th> <th>Uout[V]</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>OFF</td> <td>200</td> <td>26</td> <td>40...130</td> <td rowspan="4"><250</td> </tr> <tr> <td>ON</td> <td>OFF</td> <td>250</td> <td>32,5</td> <td>40...130</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>300</td> <td>39</td> <td>40...130</td> </tr> <tr> <td>ON</td> <td>ON</td> <td>350</td> <td>45,5</td> <td>40...130</td> </tr> </tbody> </table> <p>⚡ 25 Ⓢ CE UK CA ENE CCC</p>	Pin1	Pin2	Irated[mA]	Prated[W]	Urated[V]	Uout[V]	OFF	OFF	200	26	40...130	<250	ON	OFF	250	32,5	40...130	OFF	ON	300	39	40...130	ON	ON	350	45,5	40...130	<p>8...9 mm 0,5...1,5 mm²</p> <p>tc ● $t_c=80^{\circ}C$ $t_a=25...50^{\circ}C$</p> <p>Non isolated</p> <p>LED+ ■ LED- ■</p>
Pin1	Pin2	Irated[mA]	Prated[W]	Urated[V]	Uout[V]																									
OFF	OFF	200	26	40...130	<250																									
ON	OFF	250	32,5	40...130																										
OFF	ON	300	39	40...130																										
ON	ON	350	45,5	40...130																										
<p>INPUT</p> <p>UN=220...240 V~</p> <p>IN = 330...300 mA fN = 50/60 Hz $\lambda = 0,9C...0,99$</p> <p>■ ⊕ ■ L ■ N</p>	<p>VSLIGHTING SOLUTIONS Vossloh-Schwabe Deutschland GmbH Stuttgarter Straße 61/1, 73614 Schorndorf</p> <p>Electronic Converter for LED LED 控制装置 Type ECXe 350.664 Ref.-No. 187415 Made in China</p>	<p>OUTPUT ---</p> <table border="1"> <thead> <tr> <th>Pin1</th> <th>Pin2</th> <th>Irated[mA]</th> <th>Prated[W]</th> <th>Urated[V]</th> <th>Uout[V]</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>OFF</td> <td>200</td> <td>38</td> <td>90...190</td> <td rowspan="4"><250</td> </tr> <tr> <td>ON</td> <td>OFF</td> <td>250</td> <td>47,5</td> <td>90...190</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>300</td> <td>57</td> <td>90...190</td> </tr> <tr> <td>ON</td> <td>ON</td> <td>350</td> <td>66,5</td> <td>90...190</td> </tr> </tbody> </table> <p>⚡ 25 Ⓢ CE UK CA ENE CCC</p>	Pin1	Pin2	Irated[mA]	Prated[W]	Urated[V]	Uout[V]	OFF	OFF	200	38	90...190	<250	ON	OFF	250	47,5	90...190	OFF	ON	300	57	90...190	ON	ON	350	66,5	90...190	<p>8...9 mm 0,5...1,5 mm²</p> <p>tc ● $t_c=80^{\circ}C$ $t_a=25...50^{\circ}C$</p> <p>Non isolated PO09 Q</p> <p>LED+ ■ LED- ■</p>
Pin1	Pin2	Irated[mA]	Prated[W]	Urated[V]	Uout[V]																									
OFF	OFF	200	38	90...190	<250																									
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OFF	ON	300	57	90...190																										
ON	ON	350	66,5	90...190																										
<p>INPUT</p> <p>UN=220...240 V~</p> <p>IN = 430...380 mA fN = 50/60 Hz $\lambda = 0,94C...0,98$</p> <p>■ ⊕ ■ L ■ N</p>	<p>VSLIGHTING SOLUTIONS Vossloh-Schwabe Deutschland GmbH Stuttgarter Straße 61/1, 73614 Schorndorf</p> <p>Electronic Converter for LED LED 控制装置 Type ECXe 350.619 Ref.-No. 187326 Made in China</p>	<p>OUTPUT ---</p> <table border="1"> <thead> <tr> <th>Pin1</th> <th>Pin2</th> <th>Irated[mA]</th> <th>Prated[W]</th> <th>Urated[V]</th> <th>Uout[V]</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>OFF</td> <td>200</td> <td>48</td> <td>120...240</td> <td rowspan="4"><275</td> </tr> <tr> <td>ON</td> <td>OFF</td> <td>250</td> <td>60</td> <td>120...240</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>300</td> <td>72</td> <td>120...240</td> </tr> <tr> <td>ON</td> <td>ON</td> <td>350</td> <td>84</td> <td>120...240</td> </tr> </tbody> </table> <p>⚡ 25 Ⓢ CE UK CA ENE CCC</p>	Pin1	Pin2	Irated[mA]	Prated[W]	Urated[V]	Uout[V]	OFF	OFF	200	48	120...240	<275	ON	OFF	250	60	120...240	OFF	ON	300	72	120...240	ON	ON	350	84	120...240	<p>8...9 mm 0,5...1,5 mm²</p> <p>tc ● $t_c=80^{\circ}C$ $t_a=25...50^{\circ}C$</p> <p>Non isolated</p> <p>LED+ ■ LED- ■</p>
Pin1	Pin2	Irated[mA]	Prated[W]	Urated[V]	Uout[V]																									
OFF	OFF	200	48	120...240	<275																									
ON	OFF	250	60	120...240																										
OFF	ON	300	72	120...240																										
ON	ON	350	84	120...240																										
<p>INPUT</p> <p>UN=220...240 V~</p> <p>IN = 335...305 mA fN = 50/60 Hz $\lambda = 0,92C...0,98$</p> <p>■ ⊕ ■ L ■ N</p>	<p>VSLIGHTING SOLUTIONS Vossloh-Schwabe Deutschland GmbH Stuttgarter Straße 61/1, 73614 Schorndorf</p> <p>Electronic Converter for LED LED 控制装置 Type ECXe 500.620 Ref.-No. 187327 Made in China</p>	<p>OUTPUT ---</p> <table border="1"> <thead> <tr> <th>Pin1</th> <th>Pin2</th> <th>Irated[mA]</th> <th>Prated[W]</th> <th>Urated[V]</th> <th>Uout[V]</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>OFF</td> <td>350</td> <td>45,5</td> <td>40...130</td> <td rowspan="4"><250</td> </tr> <tr> <td>ON</td> <td>OFF</td> <td>400</td> <td>52</td> <td>40...130</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>450</td> <td>58,5</td> <td>40...130</td> </tr> <tr> <td>ON</td> <td>ON</td> <td>500</td> <td>65</td> <td>40...130</td> </tr> </tbody> </table> <p>⚡ 25 Ⓢ CE UK CA ENE CCC</p>	Pin1	Pin2	Irated[mA]	Prated[W]	Urated[V]	Uout[V]	OFF	OFF	350	45,5	40...130	<250	ON	OFF	400	52	40...130	OFF	ON	450	58,5	40...130	ON	ON	500	65	40...130	<p>8...9 mm 0,5...1,5 mm²</p> <p>tc ● $t_c=80^{\circ}C$ $t_a=25...50^{\circ}C$</p> <p>Non isolated</p> <p>LED+ ■ LED- ■</p>
Pin1	Pin2	Irated[mA]	Prated[W]	Urated[V]	Uout[V]																									
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OFF	ON	450	58,5	40...130																										
ON	ON	500	65	40...130																										
<p>INPUT</p> <p>UN=220...240 V~</p> <p>IN = 465...415 mA fN = 50/60 Hz $\lambda = 0,96...0,99$</p> <p>■ ⊕ ■ L ■ N</p>	<p>VSLIGHTING SOLUTIONS Vossloh-Schwabe Deutschland GmbH Stuttgarter Straße 61/1, 73614 Schorndorf</p> <p>Electronic Converter for LED LED 控制装置 Type ECXe 500.621 Ref.-No. 187328 Made in China</p>	<p>OUTPUT ---</p> <table border="1"> <thead> <tr> <th>Pin1</th> <th>Pin2</th> <th>Irated[mA]</th> <th>Prated[W]</th> <th>Urated[V]</th> <th>Uout[V]</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>OFF</td> <td>350</td> <td>63</td> <td>90...180</td> <td rowspan="4"><250</td> </tr> <tr> <td>ON</td> <td>OFF</td> <td>400</td> <td>72</td> <td>90...180</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>450</td> <td>81</td> <td>90...180</td> </tr> <tr> <td>ON</td> <td>ON</td> <td>500</td> <td>90</td> <td>90...180</td> </tr> </tbody> </table> <p>⚡ 25 Ⓢ CE UK CA ENE CCC</p>	Pin1	Pin2	Irated[mA]	Prated[W]	Urated[V]	Uout[V]	OFF	OFF	350	63	90...180	<250	ON	OFF	400	72	90...180	OFF	ON	450	81	90...180	ON	ON	500	90	90...180	<p>8...9 mm 0,5...1,5 mm²</p> <p>tc ● $t_c=80^{\circ}C$ $t_a=25...50^{\circ}C$</p> <p>Non isolated</p> <p>LED+ ■ LED- ■</p>
Pin1	Pin2	Irated[mA]	Prated[W]	Urated[V]	Uout[V]																									
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ON	ON	500	90	90...180																										
<p>INPUT</p> <p>UN=220...240 V~</p> <p>IN = 470...420 mA fN = 50/60 Hz $\lambda = 0,91C...0,98$</p> <p>■ ⊕ ■ L ■ N</p>	<p>VSLIGHTING SOLUTIONS Vossloh-Schwabe Deutschland GmbH Stuttgarter Straße 61/1, 73614 Schorndorf</p> <p>Electronic Converter for LED LED 控制装置 Type ECXe 700.622 Ref.-No. 187329 Made in China</p>	<p>OUTPUT ---</p> <table border="1"> <thead> <tr> <th>Pin1</th> <th>Pin2</th> <th>Irated[mA]</th> <th>Prated[W]</th> <th>Urated[V]</th> <th>Uout[V]</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>OFF</td> <td>550</td> <td>71,5</td> <td>40...130</td> <td rowspan="4"><250</td> </tr> <tr> <td>ON</td> <td>OFF</td> <td>600</td> <td>78</td> <td>40...130</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>650</td> <td>84,5</td> <td>40...130</td> </tr> <tr> <td>ON</td> <td>ON</td> <td>700</td> <td>91</td> <td>40...130</td> </tr> </tbody> </table> <p>⚡ 25 Ⓢ CE UK CA ENE CCC</p>	Pin1	Pin2	Irated[mA]	Prated[W]	Urated[V]	Uout[V]	OFF	OFF	550	71,5	40...130	<250	ON	OFF	600	78	40...130	OFF	ON	650	84,5	40...130	ON	ON	700	91	40...130	<p>8...9 mm 0,5...1,5 mm²</p> <p>tc ● $t_c=80^{\circ}C$ $t_a=25...50^{\circ}C$</p> <p>Non isolated</p> <p>LED+ ■ LED- ■</p>
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OFF	ON	650	84,5	40...130																										
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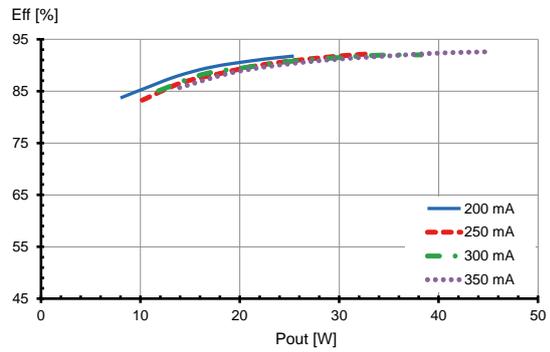
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Typ. performance graphs for 187325 / Type ECXe 350.618

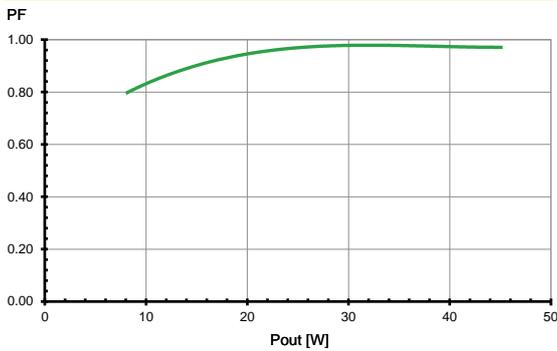
Working area



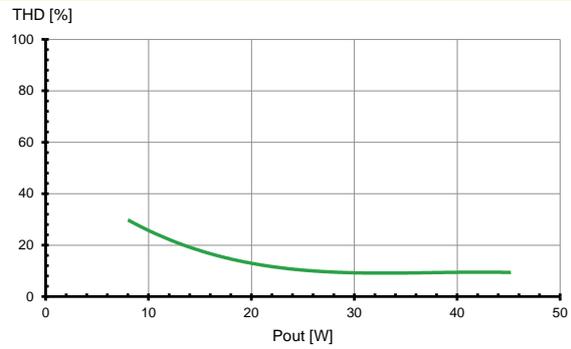
Efficiency



Power factor

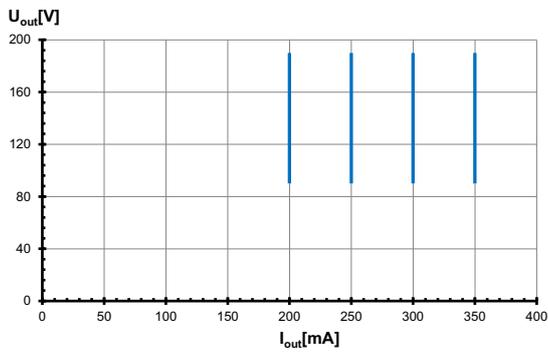


Total harmonic factor (THD)

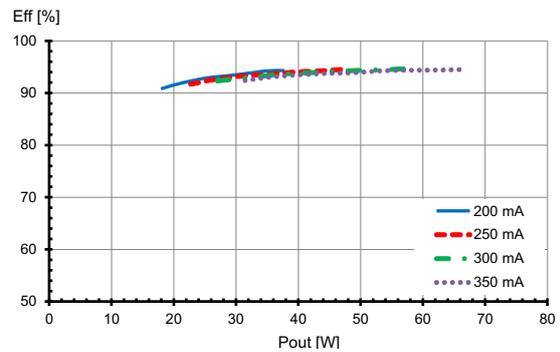


Typ. performance graphs for 187415 / Type ECXe 350.664

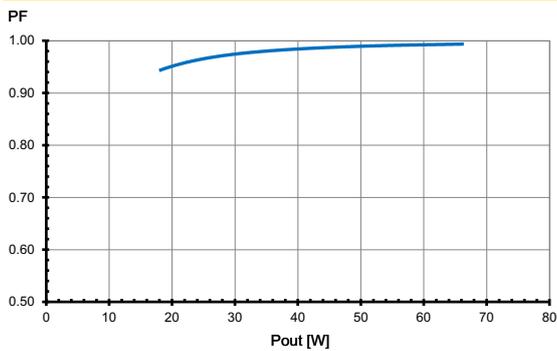
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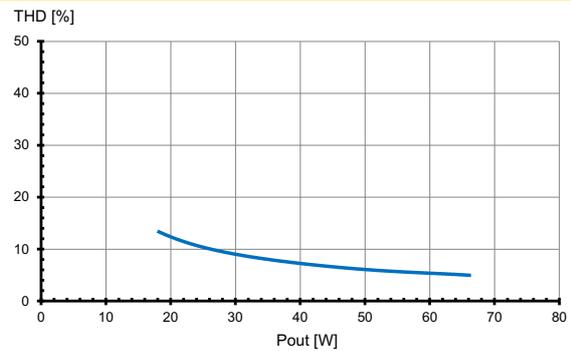
Efficiency



Power factor



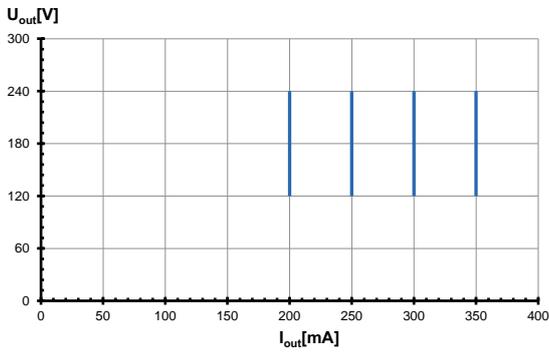
Total harmonic factor (THD)



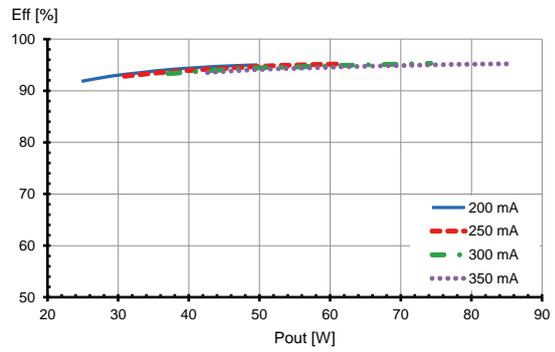
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Typ. performance graphs for 187326 / Type ECXe 350.619

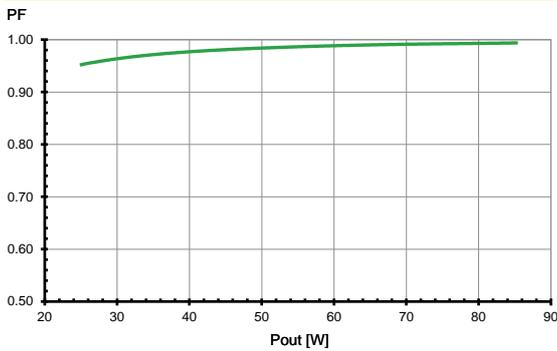
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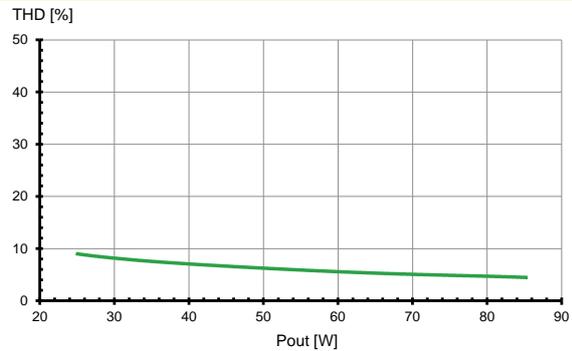
Efficiency



Power factor

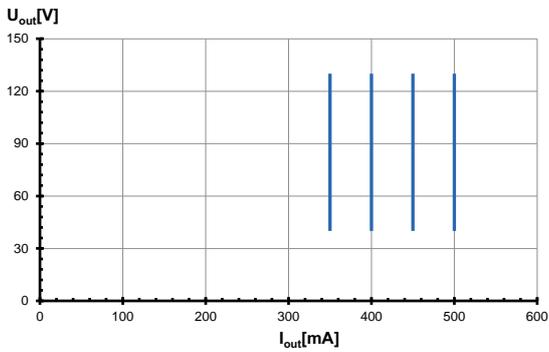


Total harmonic factor (THD)

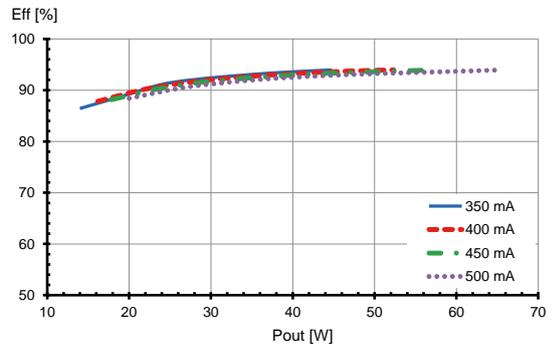


Typ. performance graphs for 187327 / Type ECXe 500.620

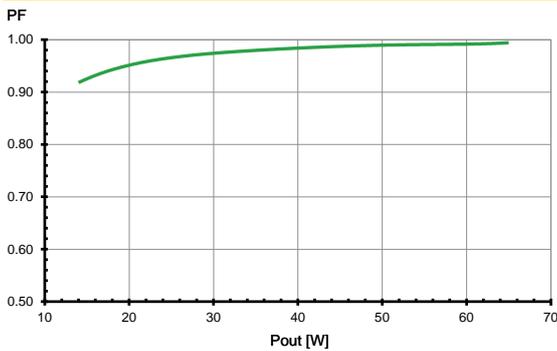
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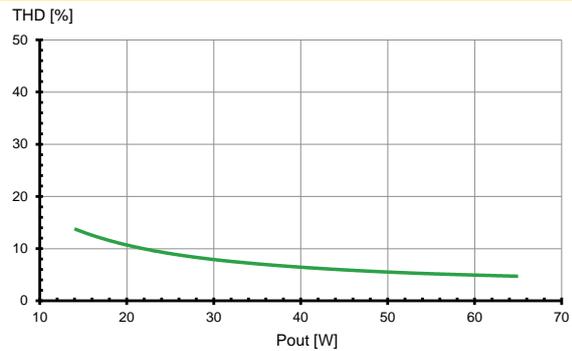
Efficiency



Power factor



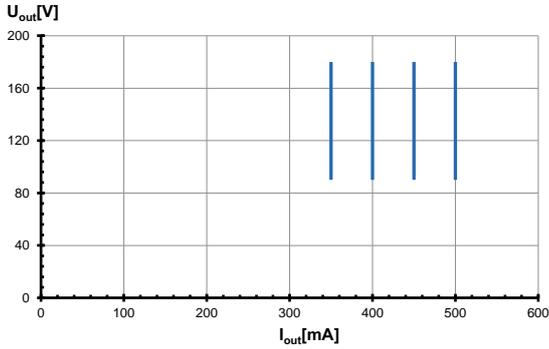
Total harmonic factor (THD)



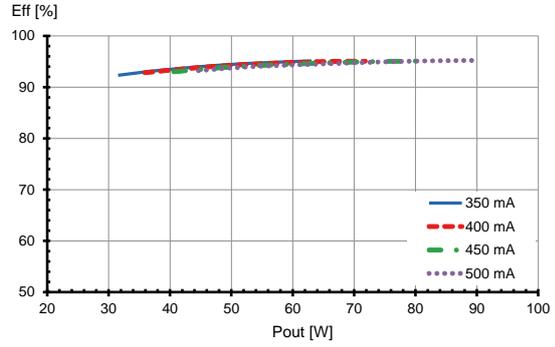
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Typ. performance graphs for 187328 / Type ECXe 500.621

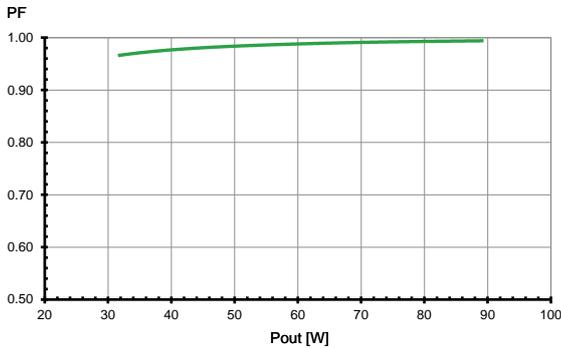
Working area



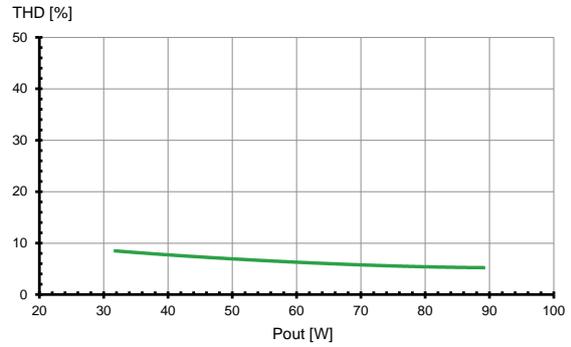
Efficiency



Power factor

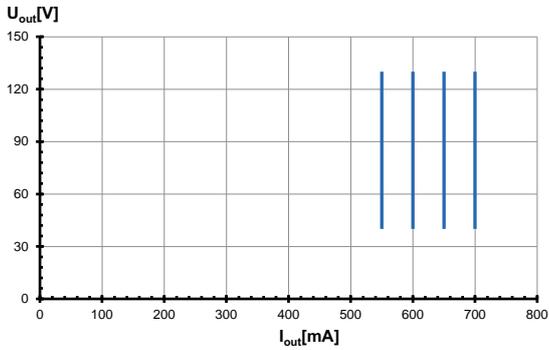


Total harmonic factor (THD)

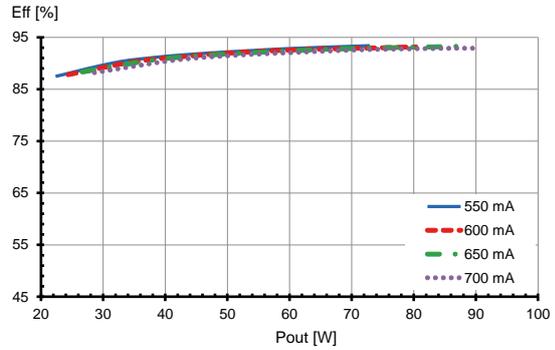


Typ. performance graphs for 187329 / Type ECXe 700.622

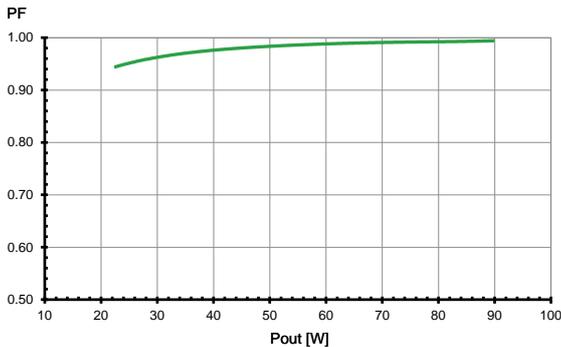
Working area



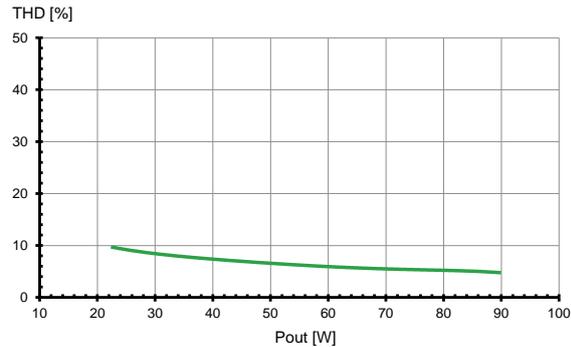
Efficiency



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.

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 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

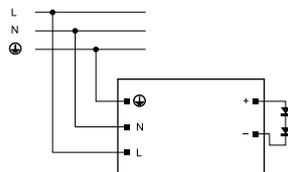
Mechanical mounting

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

Electrical installation

- Connection terminals: Push-in terminals for rigid conductors with a section of 0.5–1.5 mm²
- Stripped length: 8–9 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.

- 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 10 A	B 13 A	B 16 A	C 10 A	C 13 A	C 16 A
ECXe 350.618	187325	25	32	40	39	50	62
ECXe350.664	187415	12	15	19	20	26	32
ECXe 350.619	187326	11	15	18	19	25	31
ECXe 500.620	187327	11	15	19	19	25	31
ECXe 500.621	187328	11	14	17	18	23	29
ECXe 700.622	187329	12	15	19	19	25	30

- 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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