

# LED Drivers – EasyLine 24 V I-L IP

## EasyLine 24 V I-L IP

### Product features

- Compact casing shape IP67
- For use in applications with high capacity range of up to 100, 150, 200, 250 and 320 W

### Electrical features

- Mains voltage: 220–240 V ±10%
- Mains frequency: 50–60 Hz
- Pre-assembled connection leads  
186433, 186434: primary: 2x2.08 mm<sup>2</sup>, secondary: 2x2.08 mm<sup>2</sup>, length: 335 mm  
186634: primary: HO5RN-F 3x1 mm<sup>2</sup>, secondary: AWG14, length: 335 mm  
187040, 187041: primary: 3x1 mm<sup>2</sup>, secondary: 2x2.5 mm<sup>2</sup>, length: 335 mm
- Power factor at full load: > 0.95 C

### Safety features

- Protection against transient main peaks
- Electronic short-circuit protection
- Overload protection: reversible
- Protection against "no load" operation
- Degree of protection: IP67
- Protection class I
- SELV

### Packaging units

Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
186433	12	45	840
186434	12	45	840
186634	12	45	840
187040	4	27	1630
187041	4	27	1620

### 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](http://www.vossloh-schwabe.com)). We will be happy to send you these conditions upon request.



<b>IP67</b>	<b>SELV</b>							
			186634, 187040, 187041		186634			186433, 186434, 186634
<b>50000</b> hours Min. Service Lifetime	<b>Guarantee</b> <b>5</b> years							
			187040, 187041					

### Dimensions

Ref. No.	Casing	Length mm	Width mm	Height mm
186433	M58.1	206	68.6	37
186434	M58.1	206	68.6	37
186634	M58.1	206	68.6	37
187040	M86	258	86.2	47.2
187041	M86	258	86.2	47.2

### Applied standards

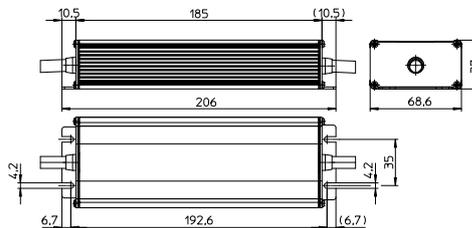
- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 61000-3-2
- EN 62384
- EN 55015

187040, 187041

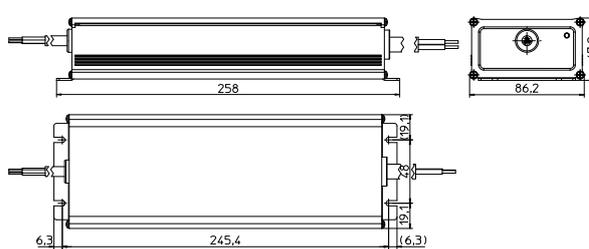
Type Approved Safety Regular Production Surveillance [www.tuv.com](http://www.tuv.com) to: 220000000

186634

### M58.1



### M86



**CE EAC**

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

## LED Drivers – EasyLine 24 V HL IP

### Electrical characteristics

Max. output W	Type	Ref. No.	Voltage 50–60 Hz V	Mains current mA	Inrush current A / $\mu$ 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 %
100	EDXe 1100/24.041	<b>186433</b>	220–240	540–480	65 / 178	0–4200	24	< 10	> 89	$\leq$ 3
150	EDXe 1150/24.042	<b>186434</b>	220–240	800–720	77 / 172	0–6250	24	< 10	> 90	$\leq$ 3
200	EDXe 1200/24.067	<b>186634</b>	220–240	1000–900	107 / 209	0–8300	24	< 10	> 94	$\leq$ 3
250	EDXe 1250/24.079	<b>187040</b>	220–240	1300–1185	117 / 227	0–10400	24	< 7	> 94	$\leq$ 3
320	EDXe 1320/24.080	<b>187041</b>	220–240	1600–1525	122 / 230	0–13300	24	< 7	> 92	$\leq$ 3

### 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.		
186433, 186434	-15	+45	10	90	-40	+85	5	95	+80	IP67
186634	-15	+60	10	90					+85	
187040, 187041	-40	+50	10	90					+90	

### Expected service life time

at operation temperatures at  $t_c$  point

Operation current	Ref. No.					
	186433, 186434		186634		187040, 187041	
All	70 °C*	80 °C	75 °C*	85 °C	80 °C*	90 °C
hrs.	50,000	30,000	50,000	30,000	100,000	50,000

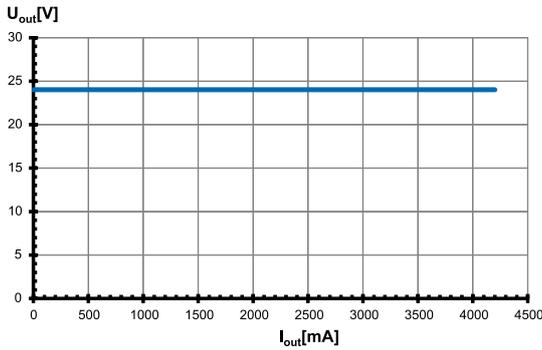
\* recommended operation temperature

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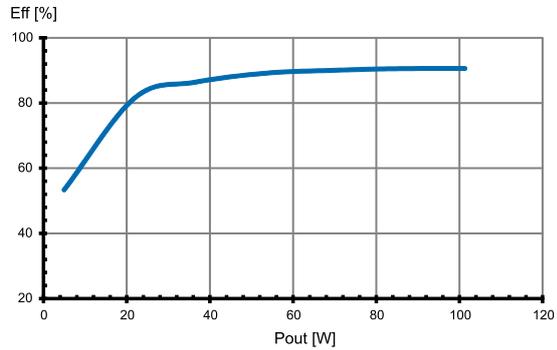
## LED Drivers – EasyLine 24 V HL IP

### Typ. performance graphs for 186433 / Type EDXe 1100/24.041

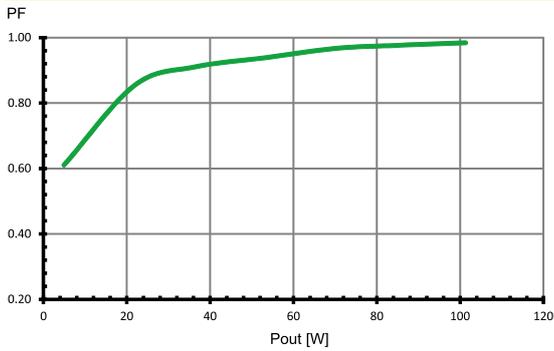
#### Working area



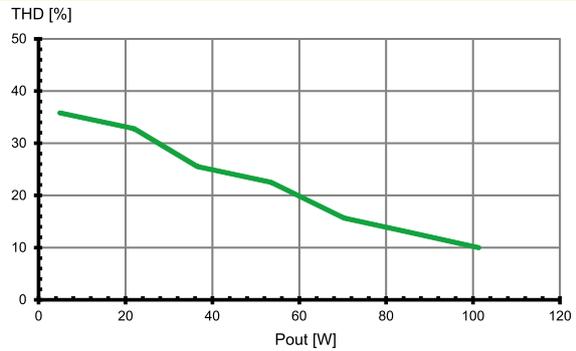
#### Efficiency



#### Power factor

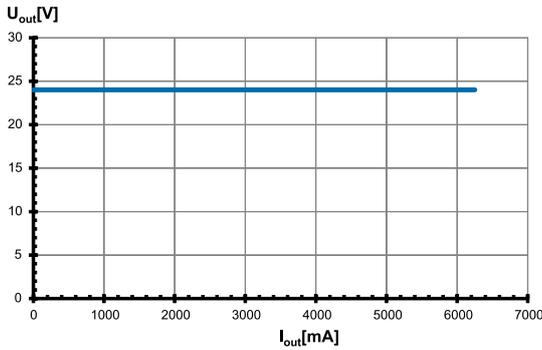


#### Total harmonic factor (THD)

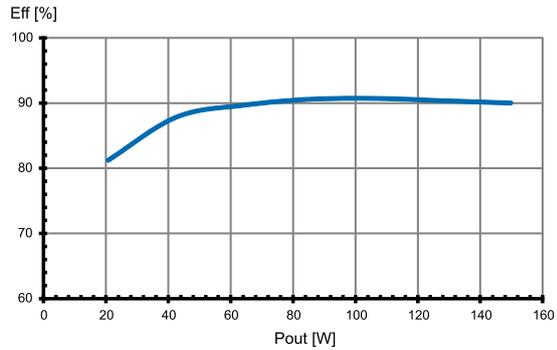


### Typ. performance graphs for 186434 / Type EDXe 1150/24.042

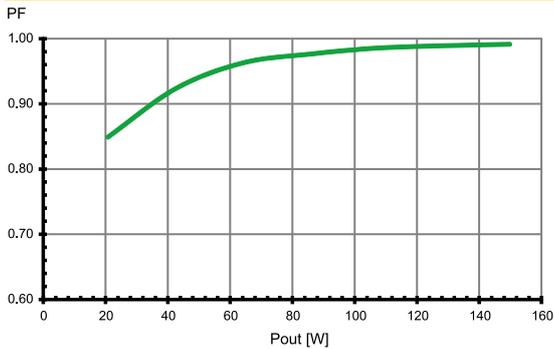
#### Working area



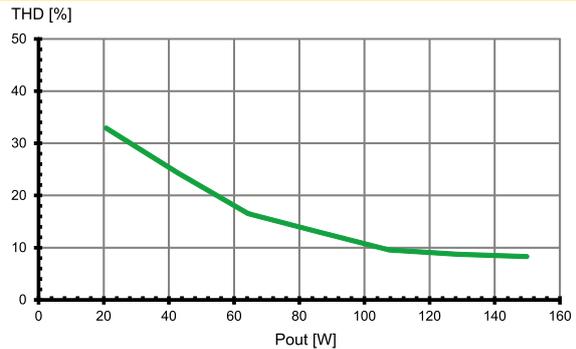
#### Efficiency



#### Power factor



#### Total harmonic factor (THD)

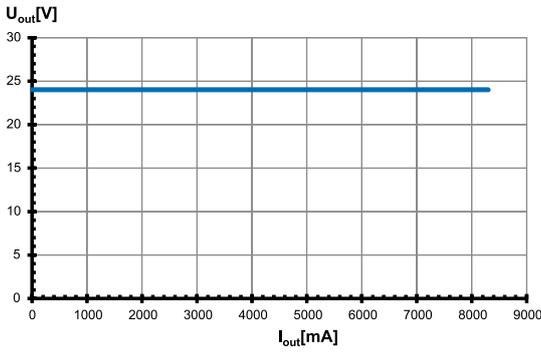


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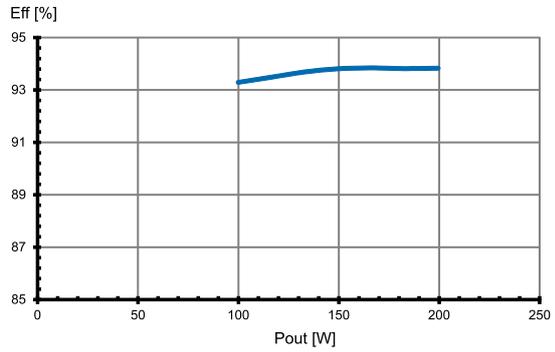
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## Typ. performance graphs for 186634 / Type EDXe 1200/24.067

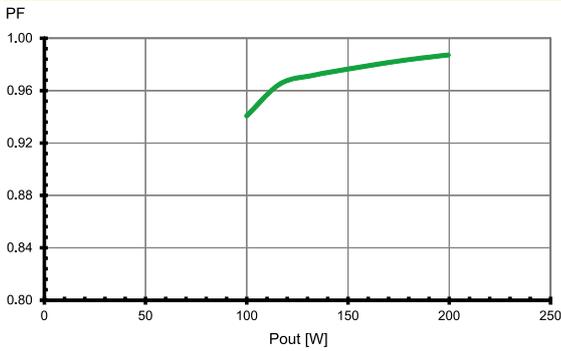
### Working area



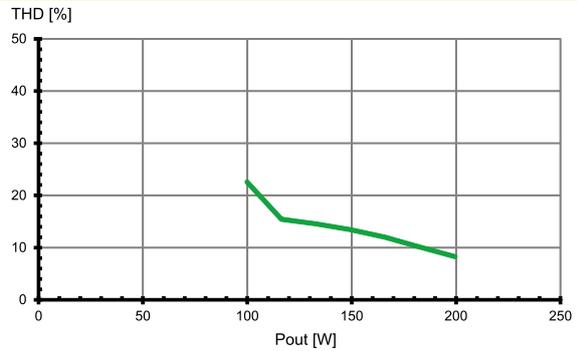
### Efficiency



### Power factor

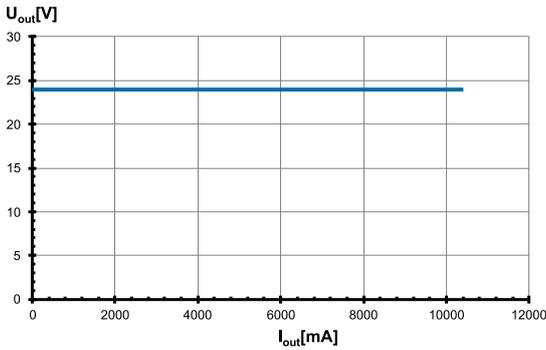


### Total harmonic factor (THD)

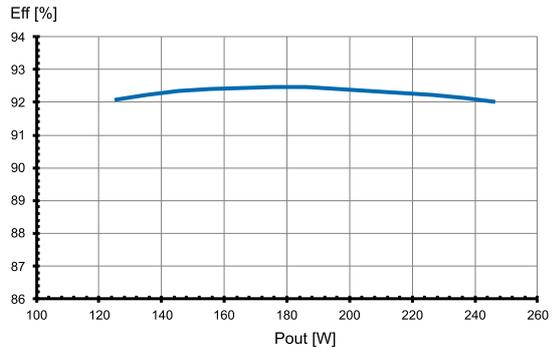


## Typ. performance graphs for 187040 / Type EDXe 1250/24.079

### Working area



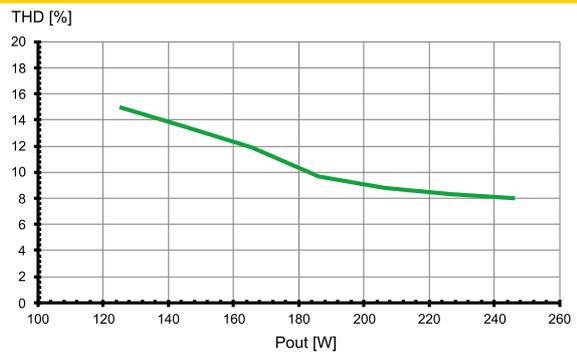
### Efficiency



### Power factor



### Total harmonic factor (THD)

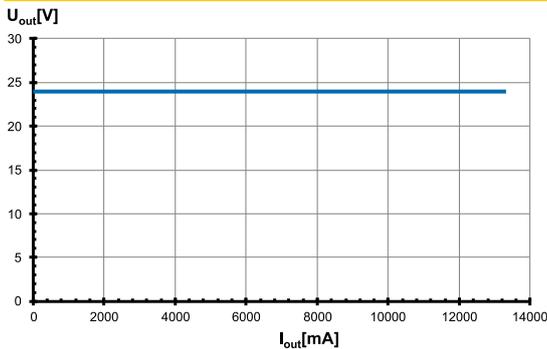


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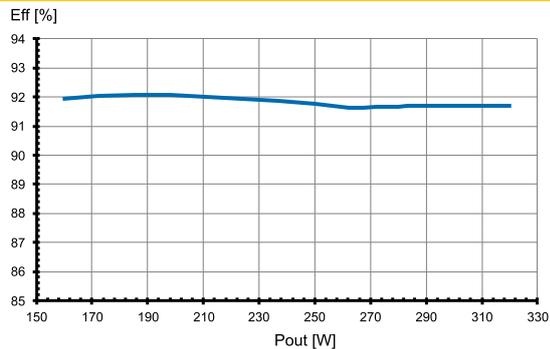
## LED Drivers – EasyLine 24 V I-L IP

### Typ. performance graphs for 187041 / Type EDXe 1320/24.080

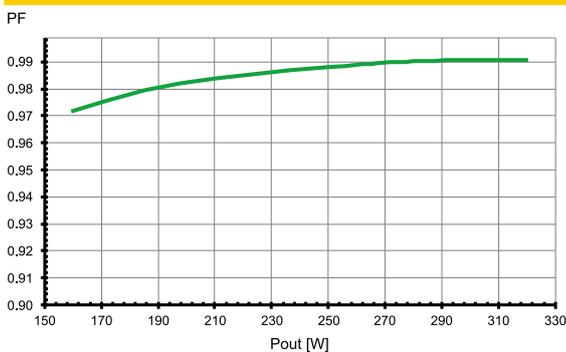
#### Working area



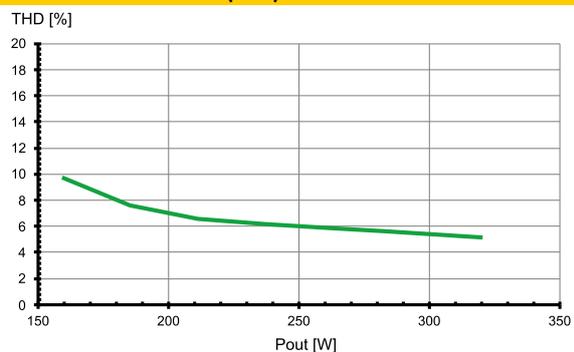
#### Efficiency



#### Power factor



#### Total harmonic factor (THD)



### Safety features

- Transient mains peaks protection:
  - Values are in compliance with EN 61547 (interference immunity).
  - Surges between L-N and between L/N-PE: up to 6 kV
  - 186433, 186434, 186634: Surges between L-N: up to 1 kV and between L/N-PE: up to 2 kV
  - 187040, 187041: Surges between L-N and between L/N-PE: up to 6 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 that the selected LED load is suitable (see Electrical Characteristics on this 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.

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## LED Drivers – EasyLine 24 V I-L IP

### 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

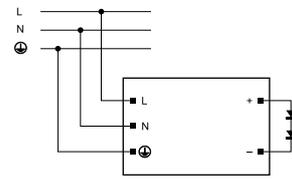
#### Mechanical mounting

- Mounting position: Drivers 186634, 187040 and 187041 are suitable for independent operation. Drivers 186433 and 186434 are not suitable for independent operation.
- Mounting location: LED drivers 186433, 186434 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  $\geq 4$  (e.g. IP54 required).
- Degree of protection: IP67
- 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

- 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: 0.8 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.

- 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 mm<sup>2</sup>] 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.					
		B 10 A	B 13 A	B 16 A	C 10 A	C 13 A	C 16 A
<b>Automatic cut-out type</b>							
EDXe 1100/24.041	<b>186433</b>	7	9	11	11	15	19
EDXe 1150/24.042	<b>186434</b>	6	8	9	10	13	16
EDXe 1200/24.067	<b>186634</b>	3	4	6	6	8	10
EDXe 1250/24.079	<b>187040</b>	3	3	4	5	6	8
EDXe 1320/24.080	<b>187041</b>	2	3	4	4	6	7

- 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.