LEDLINE ECX

ELECTRONIC CONSTANT CURRENT DRIVERS

LED CONSTANT CURRENT DRIVERS

Electronic converters for LED modules operated with constant current

To ensure the safe operation of LEDs that are wired in series, the operating current must be limited to a constant value by the LED driver,

Light-emitting diodes are semiconductor devices with a light-emitting p-n junction, Due to the specific diode characteristics, the current can only flow through an LED in one direction, Coupled with the special properties of a semiconductor, this non-linear behaviour can increase the current and power uptake of an LED as it heats up,

If this effect is not limited, uncontrolled heating can finally destroy the semiconductor junction, For this reason, VS recommends using an external constant current driver to operate all constant current driven LED modules, To ensure that the same current flows through every LED, constant current driven LED modules can only be wired in series,

The constant current source has to be selected to suit the respective application, i,e, it must supply the required current and also provide sufficient voltage for the LED string,

The number of VS LED modules that can be connected to a single operating device is dependent on the forward voltage of the respective modules,

LEDLine ECX

- **OVERLOAD PROTECTION**
- **SHORT CIRCUITING PROTECTION**
- **SELV**

VS LIGHTING SOLUTIONS

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Product Classification and Overview of LED Drivers

The electronic constant current drivers are optimised to operate constant current driven LED modules, Before connecting LED modules ensure that the power supply is disconnected from mains,

Most drivers are designed for DC-operation (mains frequency: 0 Hz) and can be used for emergency power supplies,

Product guarantee
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.

PrimeLine
Programmability
Intelligent functions
Maximum flexibility
Up to 100,000 hrs, expected service life time

ComfortLine
Convenient
Intelligent functions
Up to 100,000 hrs, expected service life time

EasyLine
Focus on core functions
Cost-efficient
Up to 50,000 hrs, expected service life time

Product overview by main application fields

Main application field	Capacity range W	Output current DC mA	Output voltage DC V	Ref, No,	Version	Current setting	Dimming	Max, service life time (hrs,)
Office	6/10/14	150/250/350	17–40	186530	EasyLine	Push-in terminal	–	50,000
	14	350	2–40	186229	ComfortLine	–	–	100,000
	15/18/21	500/600/700	17–30	186529	EasyLine	Push-in terminal	–	50,000
	27,5/33/38,5	125/150/175	110–220*	186486	ComfortLine	Push-in terminal	–	100,000
	2x14	2x250	160–120	186656	ComfortLine	Push-in terminal	–	100,000
	28,5	500	19–57	186554	ComfortLine	–	–	100,000
	35	500	30–70	186504	EasyLine	–	–	50,000
	4x9	4x60	110–150	186384	ComfortLine	–	DALI, PUSH	100,000
			110–150	186305	ComfortLine	–	–	100,000
	40	100–400	30–120*	186585	ComfortLine	LEDSet	–	100,000
		400–800	30–70*	186586	ComfortLine	LEDSet	–	100,000
		350/500/700	28–114*	186444	ComfortLine	Push-in terminal	–	100,000
	2x20	2x350	17–57	186407	ComfortLine	–	1–10 V	100,000
				186406	ComfortLine	–	–	100,000
	42	350–700	34–120*	186446, 186575, 186576	PrimeLine	Programmable	DALI, PUSH	100,000
			34–120*	186565	ComfortLine	Resistor	DALI, PUSH	100,000
		350	80–120	186414	EasyLine	–	–	50,000
	44/47/47	200/225/250	94–220*	186487	ComfortLine	Push-in terminal	–	100,000
	46,8	275/300/325	72–170*	186488	ComfortLine	Push-in terminal	–	100,000
	2x28,5/2x40	2x500/2x700	17–57	186410	ComfortLine	Dip switch	1–10 V	100,000
				186409	ComfortLine	Dip switch	–	100,000
	60	700	46–86	186429	EasyLine	–	–	50,000
	77/84	350–700	60–220*	186445, 186577 186578	PrimeLine	Programmable	DALI, PUSH	100,000
				186564	ComfortLine	Resistor	DALI, PUSH	100,000
	79/84/84	350/500/700	60–225*	186443	ComfortLine	Push-in terminal	–	100,000
	82,5/84,8/85	375/400/425	100–220*	186491	ComfortLine	Push-in terminal	–	100,000
	84,7/84,6/85,1	550/600/650	65–154*	186492	ComfortLine	Push-in terminal	–	100,000
	85	100–400	100–225*	186587	ComfortLine	LEDSet	–	100,000
		400–800	30–130*	186588	ComfortLine	LEDSet	–	100,000
	107	500	90–215	186460	ComfortLine	–	DALI, PUSH	100,000
				186315	ComfortLine	–	–	100,000
	2x70	2x700	42–100	186356	ComfortLine	–	DALI, PUSH	100,000
				186355	ComfortLine	–	1–10 V	100,000
				186354	ComfortLine	–	–	100,000

* Depends on the adjusted current output

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Product Classification and Overview of LED Drivers

Product overview by main application fields								
Main application field	Capacity range W	Output current DC mA	Output voltage DC V	Ref, No,	Version	Current setting	Dimming	Max, service life time (hrs,)
Retail	10/14/20	250/350/500	17–40	186463	EasyLine	Push-in terminal	–	50,000
	15	350	30–43	186591	EasyLine	–	–	50,000
	15/18/21	500/600/700	17–30	186464	EasyLine	Push-in terminal	–	50,000
	17/19/22	400/450/500	25–43	186651	ComfortLine	Push-in terminal	–	100,000
	21,5	500	30–43	186592	EasyLine	–	–	50,000
	22/24/26	500/550/600	25–43	186671	ComfortLine	Push-in terminal	–	100,000
	24	350–700	14–34	186465, 186573, 186574	PrimeLine	Programmable	DALI, PUSH	100,000
		700	14–34	186280	ComfortLine	–	DALI, PUSH	100,000
				186279	ComfortLine	–	1–10 V	100,000
				186278	ComfortLine	–	–	100,000
	25	500	25–50	186363	EasyLine	–	–	50,000
	26/28/30	600/650/700	25–43	186652	ComfortLine	Push-in terminal	–	100,000
	28,5/34,2/40	500/600/700	25–57	186531	EasyLine	Push-in terminal	–	50,000
	30	700	30–43	186593	EasyLine	–	–	50,000
	30/32/34	700/750/800	25–43	186670	ComfortLine	Push-in terminal	–	100,000
	34/37/39	800/850/900	25–43	186653	ComfortLine	Push-in terminal	–	100,000
	34,4/39,8/45	800/925/1050	25–43	186532	EasyLine	Push-in terminal	–	50,000
	35	700/1050	16–50	186364, 186365	EasyLine	–	–	50,000
	37	350–700	30–53	186503, 186571, 186572	PrimeLine	Programmable	DALI, PUSH	100,000
		700	30–53	186308	ComfortLine	–	DALI, PUSH	100,000
				186306	ComfortLine	–	–	100,000
				186556	ComfortLine	–	–	100,000
	38,5	700	30–55	186594	EasyLine	–	–	50,000
	38,7	900	30–43	186669	EasyLine	–	–	50,000
	39	300–900	25–43	186650	ComfortLine	LEDSet	–	100,000
	41/43/45	950/1000/1050	25–43	186654	ComfortLine	Push-in terminal	–	100,000
	45	300–1050	25–43	186653	ComfortLine	LEDSet	–	100,000
		1050	30–43	186595	EasyLine	–	–	50,000
Residential	5,2	700	50–30	186458	EasyLine	–	–	50,000
	5,6	700	2,8–8	186348	EasyLine	–	–	50,000
	6	150	27–41	186447	EasyLine	–	C	50,000
	7	350	8,4–20	186342	EasyLine	–	–	50,000
	8,75	350	3–25	186519	ComfortLine	–	–	100,000
	10	500	13–20	186448	EasyLine	–	C	50,000
	11	350	2–32	186679	ComfortLine	–	–	100,000
	12	250	27–48	186449	EasyLine	–	C	50,000
		500	8–24	186508	EasyLine	–	–	50,000
	12,6	350	8,4–36	186341	EasyLine	–	–	50,000
	15	500	8–30	186349	EasyLine	–	–	50,000
	16	500	2–32	186680	ComfortLine	–	–	100,000
	17	700	2–25	186681	ComfortLine	–	–	100,000
	18	350	32–52	186415	EasyLine	–	C	50,000
		700	16–26	186450	EasyLine	–	C	50,000
	20	350	18–57	186431	EasyLine	–	–	50,000
			40–57	186507	EasyLine	–	–	50,000
		1050	2–19	186682	ComfortLine	–	–	100,000
	20,3	700	8–29	186350	EasyLine	–	–	50,000
	21	500	28–42	186505	EasyLine	–	C	50,000

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Product Classification and Overview of LED Drivers

Product overview by main application fields								
Main application field	Capacity range W	Output current DC mA	Output voltage DC (V)	Ref, No,	Version	Current setting	Dimming	Max, service life time (hrs,)
Residential	25	700	22–36	186416	EasyLine	–	C	50,000
	25.2	700	22–36	186353	EasyLine	–	–	50,000
	30	350	57–86	186430	EasyLine	–	–	50,000
		700	17–42	186393	ComfortLine	–	–	100,000
	31	700	30–45	186501	EasyLine	–	–	50,000
	31.5	1050	20–30	186351	EasyLine	–	–	50,000
	37.8	700	32–52	186451	EasyLine	–	C	50,000
		1050	18–36	186394, 186395	ComfortLine	–	C	100,000
	47	1050	27–45	186502	EasyLine	–	–	50,000
	60	700	43–86	186548	EasyLine	–	–	50,000
		1050	40–58	186522	EasyLine	–	–	50,000
Street	38.5	700	32–55	186490	ComfortLine	–	1–10 V	100,000
				186489	ComfortLine	–	–	100,000
	40	350	78–114	186550	ComfortLine	–	–	100,000
		700	39–57	186551	ComfortLine	–	–	100,000
		1050	26–38	186552	ComfortLine	–	–	100,000
	60	1050	28–57	186316	ComfortLine	–	1–10 V	100,000
	75	700	54–107	186400	ComfortLine	–	1–10 V	100,000
		700/400	54–107	186397	ComfortLine	–	Power reduction	100,000
	100	700	70–143	186401	ComfortLine	–	1–10 V	100,000
		700/400	70–143	186398	ComfortLine	–	Power reduction	100,000
	150	350–1050	85–260*	186442	PrimeLine	Programmable	1–10 V	100,000
		700	107–214	186402	ComfortLine	–	1–10 V	100,000
		700/400	107–214	186509	ComfortLine	–	Power reduction	100,000
		700/400	48–375	186202, 186203	ComfortLine	–	Power reduction	100,000
		700	107–214	186399	ComfortLine	–	–	100,000
Industry	19.95/28.5/34.2/39.9	350/500/ 600/700	20–57	186581	ComfortLine	Rotary switch	1–10 V	100,000
	38.7/45.1/51.6/60.2	900/1050/1200/1400	20–43	186208	ComfortLine	Rotary switch	1–10 V	100,000
	50	700	35–72	186452	EasyLine	–	–	50,000
	75	1050	35–72	186453	EasyLine	–	–	50,000
	100	1400	30–72	186454	EasyLine	–	–	50,000
	112	700	85–160	186299, 186300	ComfortLine	–	DALI, PUSH	100,000
				186297, 186298	ComfortLine	–	–	100,000
	121.8	1050	60–116	186617	EasyLine	–	–	50,000
	122.4	1700	30–72	186455	EasyLine	–	–	50,000
	126	1050	85–120	186303, 186304	ComfortLine	–	DALI, PUSH	100,000
				186301, 186302	ComfortLine	–	–	100,000
	151.2	2100	45–72	186456	EasyLine	–	–	50,000
	172.8	2400	45–72	186510	EasyLine	–	–	50,000
	201.6	2800	45–72	186477	EasyLine	–	–	50,000
Accessories								
iProgrammer	Ref, No, 186428	The iProgrammer is designed to let you configure LED drivers using the 3C function.						

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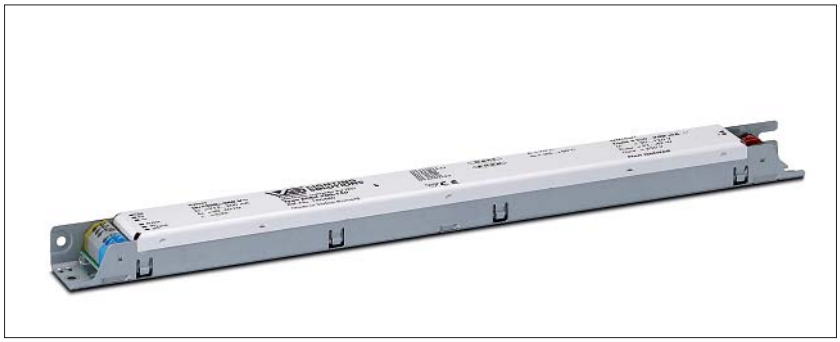
PrimeLine LED Drivers – Dimmable with Programmable Current

350–700 mA,
max. 42 W and max. 84 W
The linear LED constant-current drivers are designed for use in office and retail lighting.



Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load:
0.95 (ECXd 700.150)
0.97 (ECXd 700.149)
Standby losses: < 0.5 W

Dimming
Dimming function is realised by hybrid dimming.
Analogue dimming: ≥ 275 mA
PWM dimming: < 275 mA
Dimming range: 3 to 100%
If no dimming interface is connected, brightness will stay at 100%.

Programmability
The output current can be freely adjusted in 1 mA steps between 350 mA and 700 mA (factory setting: see table).
An iProgrammer (Ref. No. 186428) and a PC running the respective VS software are required for programming purposes.

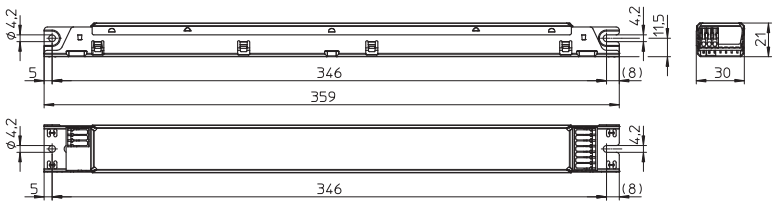
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
DC operation: 198–264 V DC, 0 Hz
(can be reduced to 176 V with reduced service life time)
Push-in terminals: 0.2–1.5 mm²

Safety features
Electronic short-circuit protection
Overload and overtemperature protection
Protection against "no load" operation
Degree of protection: IP20
Protection class I
Product guarantee: 5 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186446, 186575, 186576		Ref. No. 186445, 186577, 186578	
all	60 °C	50 °C	70 °C	65 °C
hrs.	50,000	100,000	50,000	100,000

M10



Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC programmable mA	Factory setting mA	Voltage output* DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M10 – Dimensions: 359x30x21 mm												
42	ECXd 700.150	**186446**	220–240	215–200	350–700 ±5%	350	34–120	< 250	> 91	–25 to 50	60	235
		186575				500			> 91			
		186576				700			> 90			
84	ECXd 700.149	**186445**	220–240	410–380	350–700 ±5%	350	60–220	< 250	> 94	–25 to 50	70	265
		186577				500			> 94			
		186578				700			> 93			

* Depends on the adjusted current output

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ComfortLine LED Drivers – Dimmable with Selectable Current

350–700 mA,
max. 42 W and max. 84 W
The linear LED constant-current drivers are designed for use in office and retail lighting.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.95
Standby losses: < 0.4 W

Dimming
Dimming function is realised by hybrid dimming.
Analogue dimming: ≥ 275 mA
PWM dimming: < 275 mA
Dimming range: 3 to 100%
If no dimming interface is connected, brightness will stay at 100%.

Adjustable
The output current can be freely adjusted between 350 mA and 700 mA by using a resistor (according LEDset standard).

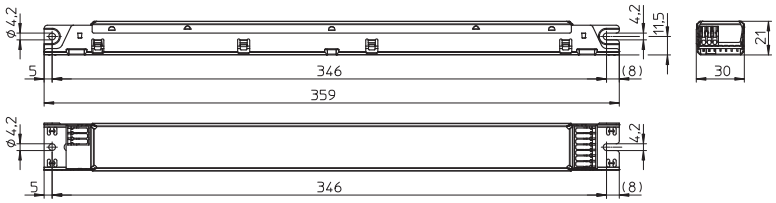
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
DC operation: 198–264 V DC, 0 Hz
(can be reduced to 176 V with reduced service life time)
Push-in terminals: 0.2–1.5 mm²

Safety features
Electronic short-circuit protection
Overload and overtemperature protection
Protection against "no load" operation
Degree of protection: IP20
Protection class I
Product guarantee: 5 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186565		186564	
all	60 °C	50 °C	70 °C	60 °C
hrs.	50,000	100,000	50,000	100,000

M10



Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC programmable mA	Voltage output* DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M10 – Dimensions: 359x30x21 mm											
42	ECXd 700.214	**186565**	220–240	210–190	350–700 ±5%	34–120	< 250	> 90	–25 to 50	60	235
77	ECXd 700.213	**186564**	220–240	410–380	350–700 ±5%	60–220	< 250	> 93	–25 to 50	70	265
84											

* Depends on the adjusted current output

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ComfortLine LED Drivers – Dimmable

2x700 mA / max. 2x70 W
The linear LED constant-current drivers are designed for use in office and retail lighting.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: 0.95
Standby losses: < 0.5 W

Dimming
The dimming function is achieved by applying a PWM signal to the nominal current.
Dimming range: 3 to 100%
If no dimming interface is connected, brightness will stay at 100%.

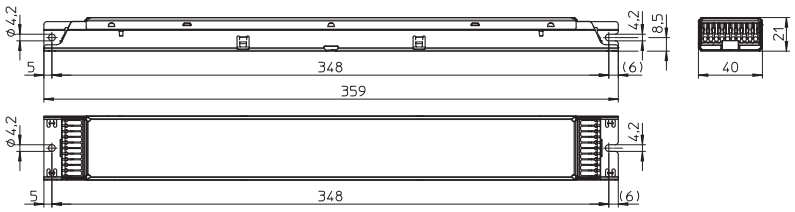
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
DC operation: 198–264 V DC, 0 Hz
(can be reduced to 176 V with reduced service life time)
Push-in terminals: 0.2–1.5 mm²

Safety features
Electronic short-circuit protection
Overload and overtemperature protection
Protection against "no load" operation
Degree of protection: IP20
Protection class I
SELV
Product guarantee: 5 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186356	
2x700 mA	85 °C	75 °C
hrs.	50,000	100,000

M12



Max. output W	Type	Ref. No.	Mains voltage 0 Hz, 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M12 – Dimensions: 359x40x21 mm											
2x70	ECXd 2700.089	**186356**	198–264	834–625	2x700 ±5%	42–100	< 120	> 90	–20 to 50	85	400
			220–240	750–688							

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ComfortLine LED Drivers – Dimmable

4x60 mA / max. 4x9 W
500 mA / max. 107 W
The linear LED constant-current drivers are designed for use in office and retail lighting.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.95
Standby losses: < 0.5 W

Dimming
The dimming function is achieved by applying a PWM signal to the nominal current.
Dimming range: 3 to 100%
If no dimming interface is connected, brightness will stay at 100%.

Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
DC operation: 198–264 V DC, 0 Hz
Push-in terminals: 0.2–1.5 mm²

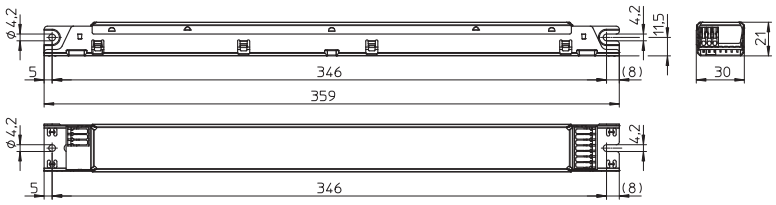
Safety features
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class I
Product guarantee: 5 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. all types	
all	70 °C	60 °C
hrs.	50,000	100,000

DALI
PUSH
LiCS INDOOR

M10



Max. output W	Type	Ref. No.	Mains voltage 0 Hz, 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M10 – Dimensions: 359x30x21 mm											
4x9	ECXd 460.110	**186384**	198–264	190–140	4x60 ±5%	110–150	< 450	> 91	–25 to 65	70	230
			220–240	170–150							
107	ECXd 500.163	**186460**	198–264	557–412	500 +5/–10%	90–215	< 450	> 90	–20 to 50	70	220
			220–240	502–460							

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ComfortLine LED Drivers – Dimmable

2x350 mA / max. 2x20 W
2x500 mA / max. 2x28.5 W
2x700 mA / max. 2x40 W
and max. 2x70 W

The linear LED constant-current drivers are designed for use in office and retail lighting.

Electrical characteristics

Secondary side switching of LED modules is not allowed.
Power factor at full load: 0.95

Dimming

The dimming function is achieved by applying a PWM signal to the nominal current (M12) or with an analogue dimming signal (M10/M11).
Dimming range: 3 to 100%
If no dimming interface is connected, brightness will stay at 100%.

Connection details

Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
DC operation: 198–264 V DC, 0 Hz
(can be reduced to 176 V with reduced service life time)
Push-in terminals: 0.2–1.5 mm²

Safety features

Electronic short-circuit protection
Overload and overtemperature protection
Protection against "no load" operation
Degree of protection: IP20
Protection class I
SELV
Product guarantee: 5 years

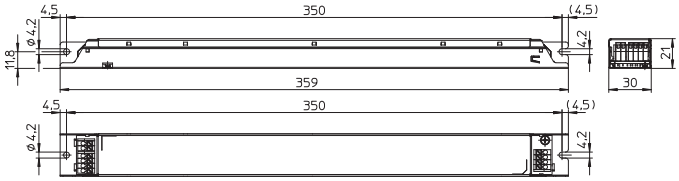
Expected service life time

at operation temperatures at t_c point

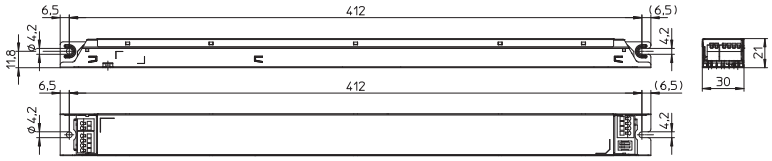
Operation current	Ref. No. 186407		186410		186355	
2x350 mA	75 °C	65°C	–	–	–	–
2x500 mA	–	–	75 °C	65 °C	–	–
2x700 mA	–	–	75 °C	65 °C	85 °C	75 °C
hrs.	50,000	100,000	50,000	100,000	50,000	100,000

1–10V

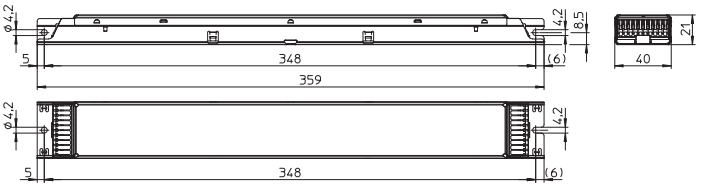
M10.1



M11.1



M12



Max. output W	Type	Ref. No.	Mains voltage 0 Hz, 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M10.1 – Dimensions: 359x30x21 mm											
2x20	ECXd 2350.124	**186407**	198–264	500–340	2x350 ±5%	17–57	42	> 85	–20 to 50	75	270
			220–240	400–370							
M11.1 – Dimensions: 425x30x21 mm											
2x28.5/ 2x40	ECXd 2700.127	**186410**	198–264	490–385	2x500 ±5%/ 2x700 ±5%	17–57	60	> 88	–20 to 50	75	310
			220–240	480–400							
M12 – Dimensions: 359x40x21 mm											
2x70	ECXd 2700.088	**186355**	198–264	834–625	2x700 ±5%	42–100	120	> 90	–20 to 50	85	400
			220–240	750–688							

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ComfortLine LED Drivers – with Selectable Current

125 to 650 mA / 27.5 W to 85.1 W
The linear LED constant-current drivers are designed for use in office and retail lighting.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: 0.97

Selectable current output
The required current output can be chosen by selecting the respective pin at the output terminal.

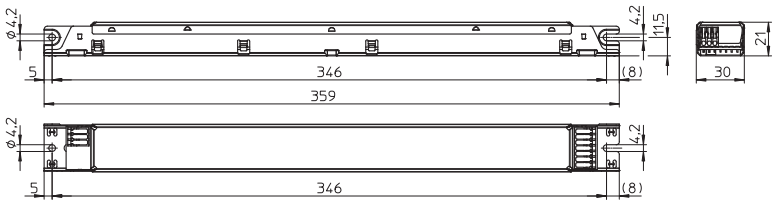
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
Push-in terminals: 0.2–1.5 mm²

Safety features
Electronic short-circuit protection
Overtemperature protection
Protection against "no load" operation
Degree of protection: IP20
Protection class I
Product guarantee: 5 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186486		186487, 186488		186491, 186492	
125–175 mA	55 °C	45 °C	–	–	–	–
200–325 mA	–	–	60 °C	50 °C	–	–
375–550 mA	–	–	–	–	65 °C	55 °C
600–650 mA	–	–	–	–	70 °C	60 °C
hrs.	50,000	100,000	50,000	100,000	50,000	100,000

M10



Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M10 – Dimensions: 359x30x21 mm											
27.5	ECXe 175.173	**186486**	220–240	150–140	125 ±5%	155–220	< 250	> 90	–20 to 60	70	220
33				175–165	150 ±5%	130–220		> 91			
38.5				200–190	175 ±5%	110–220		> 92			
44	ECXe 250.174	**186487**	220–240	220–205	200 ±5%	112–220	< 250	> 93	–20 to 60	70	220
47				230–220	225 ±5%	104–208		> 92			
47				235–220	250 ±5%	94–188		> 92			
46.8	ECXe 325.175	**186488**	220–240	235–220	275 ±5%	85–170	< 250	> 91	–20 to 60	75	220
46.8				235–220	300 ±5%	78–156		> 91			
46.8				235–220	325 ±5%	72–144		> 91			
82.5	ECXe 425.178	**186491**	220–240	410–375	375 ±5%	113–220	< 250	> 93	–20 to 50	65	243
84.8				420–385	400 ±5%	105–212		> 94			
85				420–390	425 ±5%	100–200		> 94			
84.7	ECXe 650.179	**186492**	220–240	420–390	550 ±5%	77–154	< 250	> 93	–20 to 50	65	244
84.6				420–390	600 ±5%	71–141		> 93		70	
85.1				420–390	650 ±5%	65–131		> 93		70	

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ComfortLine LED Drivers – with Selectable Current

350/500/700 mA,
max. 40 W and max. 84 W
The linear LED constant-current drivers are designed for use in office and retail lighting.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: 0.97

Selectable current output
The required current output can be chosen by selecting the respective pin at the output terminal.

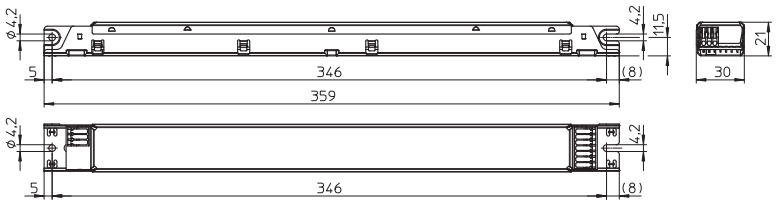
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
Push-in terminals: 0.2–1.5 mm²

Safety features
Electronic short-circuit protection
Overtemperature protection
Protection against "no load" operation
Degree of protection: IP20
Protection class I
Product guarantee: 5 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186444		186443	
350 mA	60 °C	50 °C	70 °C	60 °C
500 mA	65 °C	55 °C	75 °C	65 °C
700 mA	70 °C	60 °C	80 °C	70 °C
hrs.	50,000	100,000	50,000	100,000

M10



Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M10 – Dimensions: 359x30x21 mm											
40	ECXe 700.148	**186444**	220–240	200–190	350 ±5%	57–114	< 250	> 90	–20 to 60	70	227
				205–190	500 ±5%	40–80		> 89		75	
				210–195	700 ±5%	28–57		> 88		80	
79	ECXe 700.147	**186443**	220–240	400–370	350 ±5%	120–225	< 250	> 94	–20 to 50	75	250
84				420–390	500 ±5%	80–170		> 93		75	
				420–390	700 ±5%	60–120		> 92		80	

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ComfortLine LED Drivers

2x250 mA / max. 2x14 W
2x350 mA / max. 2x20 W
2x500 mA / max. 2x28.5 W
2x700 mA / max. 2x40 W
and max. 2x70 W

The linear LED constant-current drivers are designed for use in office and retail lighting.

Electrical characteristics

Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.9 C

Connection details

Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
DC operation: 198–264 V DC, 0 Hz
(can be reduced to 176 V with reduced service life time)
Push-in terminals: 0.2–1.5 mm²

Safety features

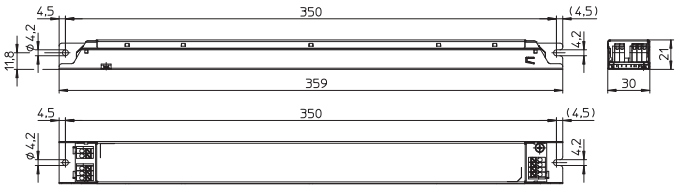
Electronic short-circuit protection
Overload and overtemperature protection
Protection against "no load" operation
Degree of protection: IP20
Protection class I
SELV
Product guarantee: 5 years

Expected service life time

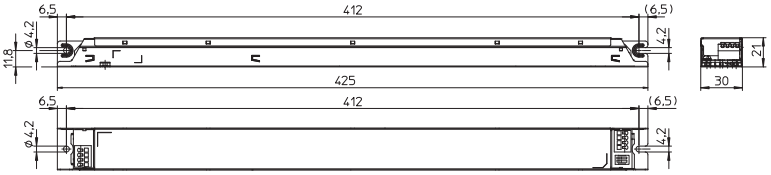
at operation temperatures at t_c point

Operation current	Ref. No. 186406, 186656		186409		186354	
2x350 mA	75 °C	65°C	–	–	–	–
2x500 mA	–	–	75 °C	65 °C	–	–
2x700 mA	–	–	75 °C	65 °C	85 °C	75 °C
hrs.	50,000	100,000	50,000	100,000	50,000	100,000

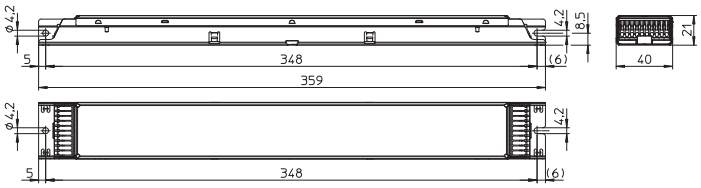
M10.1



M11.1



M12



Max. output W	Type	Ref. No.	Mains voltage 0 Hz, 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M10.1 – Dimensions: 359x30x21 mm											
2x14	ECXe 2250.246	**186656**	198–264	160–120	2x250	15–57	< 60	> 85	–25 to 50	75	306
			220–240	170–155							
2x20	ECXe 2350.123	**186406**	198–264	500–340	2x350 ±5%	17–57	< 60	> 85	–20 to 50	75	270
			220–240	400–370							
M11.1 – Dimensions: 425x30x21 mm											
2x28.5/	ECXe 2700.126	**186409**	198–264	260–175	2x500 ±5%/	17–57	< 60	> 88	–20 to 50	75	310
2x40			220–240	200–190	2x700 ±5%						
M12 – Dimensions: 359x40x21 mm											
2x70	ECXe 2700.087	**186354**	198–264	834–625	2x700 ±5%	42–100	< 120	> 90	–20 to 50	85	400
			220–240	750–688							

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ComfortLine LED Drivers

4x60 mA / max. 4x9 W
500 mA / max. 107 W
The linear LED constant-current drivers are designed for use in office and retail lighting.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.96

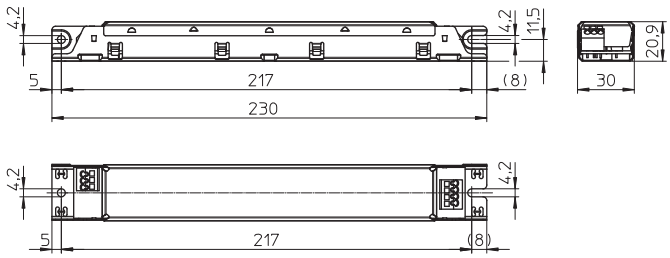
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
DC operation (except 186305):
198–264 V DC, 0 Hz
(can be reduced to 176 V with reduced service life time)
Push-in terminals: 0.2–1.5 mm²

Safety features
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class I
Product guarantee: 5 years

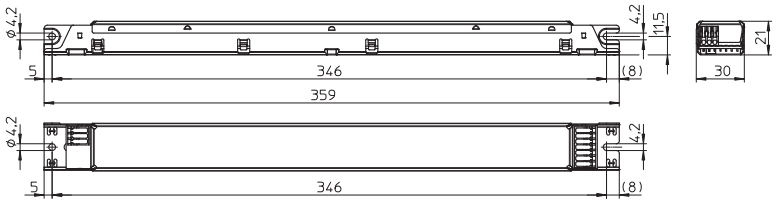
Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. all types	
all	70 °C	60 °C
hrs.	50,000	100,000

M6.1



M10



Max. output W	Type	**Ref. No.**	Mains voltage 0 Hz, 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M6.1 – Dimensions: 230x30x20.9 mm											
4x9	ECXe 460.061	**186305**	–	–	4x60 ±5%	110–150	450	> 88	–20 to 60	70	156
			220–240	180–165							
M10 – Dimensions: 359x30x21 mm											
107	ECXe 500.068	**186315**	198–264	650–410	500 ±5%	90–215	450	> 94	–25 to 50	70	273
			220–240	520–440							

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ComfortLine LED Drivers

350 mA / max. 14 W
The linear LED constant-current drivers are designed for use in office and retail lighting.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: 0.55 C

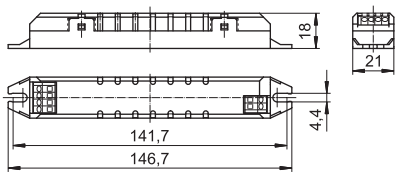
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
DC operation: 176–264 V DC, 0 Hz
Push-in terminals: 0.2–1.5 mm²

Safety features
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
SELV
Product guarantee: 5 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186229	
350 mA	80 °C	70 °C
hrs.	50,000	100,000

K21



Max. output W	Type	Ref. No.	Mains voltage 0 Hz, 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K21 – Dimensions: 146.7x21x18 mm											
14	ECXe 350.031	**186229**	176–264 220–240	140–90 81–75	350 +5/–10%	2–40	42	> 81	–20 to 50	80	49

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ComfortLine LED Drivers

500 mA / max. 28.5 W
The linear LED constant-current drivers are designed for use in office and retail lighting.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.95

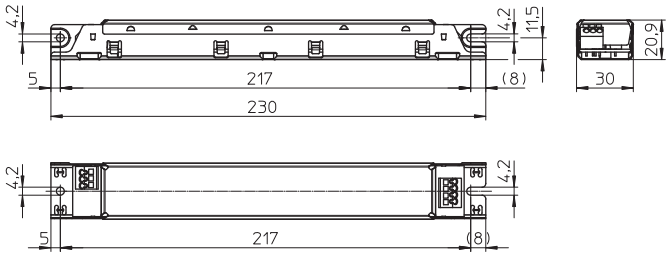
Connection details
Mains voltage: 120–240 V ±10%
Mains frequency: 50–60 Hz
Push-in terminals: 0.2–1.5 mm²

Safety features
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class I
Product guarantee: 5 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186554	
500 mA	70 °C	60 °C
hrs.	50,000	100,000

M6.1



Max. output W	Type	**Ref. No.**	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M6.1 – Dimensions: 230x30x20.9 mm											
28.5	ECXe 500.210	**186554**	120–240	280–140	500$^{\pm 5\,\%}$	19–57	< 250	> 83	–25 to 50	70	152

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EasyLine LED Drivers – with Selectable Current

150/250/350 mA / max. 14 W
500/600/700 mA / max. 21 W
The linear LED constant-current drivers are designed for use in office and retail lighting.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.94

Selectable current output
The required current output can be chosen by selecting the respective pin at the output terminal.

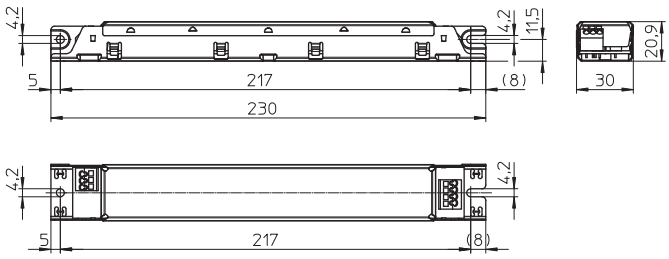
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
Push-in terminals: 0.2–1.5 mm²

Safety features
Electronic short-circuit protection
Overload and overtemperature protection
Protection against "no load" operation
Degree of protection: IP20
Protection class I
SELV
Product guarantee: 3 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186530		186529	
150–350 mA	65°C	55 °C	–	–
500–700 mA	–	–	70 °C	60 °C
hrs.	30,000	50,000	30,000	50,000

M6.1



Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M6.1 – Dimensions: 230x30x20.9 mm											
6	ECXe 350.198	**186530**	220–240	32–29	150 ±7.5%	17–40	< 60	> 84	–20 to 50	65	146
10				53–49	250 ±7.5%						
14				74–68	350 ±7.5%						
15	ECXe 700.197	**186529**	220–240	80–73	500 ±7.5%	17–30	< 60	> 84	–20 to 50	70	146
18				96–88	600 ±7.5%						
21				112–102	700 ±7.5%						

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EasyLine LED Drivers

500 mA / max. 35 W
The linear LED constant-current drivers are designed for use in office and retail lighting.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.9

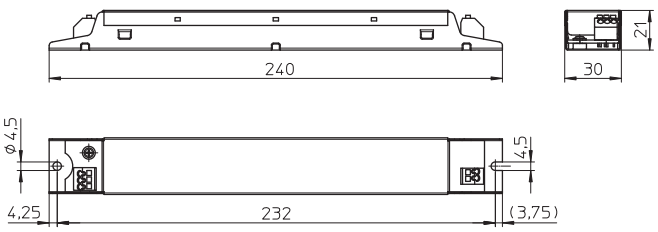
Connection details
Mains voltage: 120–240 V ±10%
Mains frequency: 50–60 Hz
Push-in terminals: 0.2–1.5 mm²

Safety features
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class I
Product guarantee: 3 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186504	
500 mA	75 °C	65 °C
hrs.	30,000	50,000

M5.3



Max. output W	Type	**Ref. No.**	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M5.3 – Dimensions: 240x30x21 mm											
35	ECXe 500.185	**186504**	120–240	330–165	500 ±5%	30–70	< 250	> 90	–15 to 50	75	158

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EasyLine LED Drivers

350 mA / max. 42 W
700 mA / max. 60 W
The linear LED constant-current drivers are designed for use in office and retail lighting.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.9 C

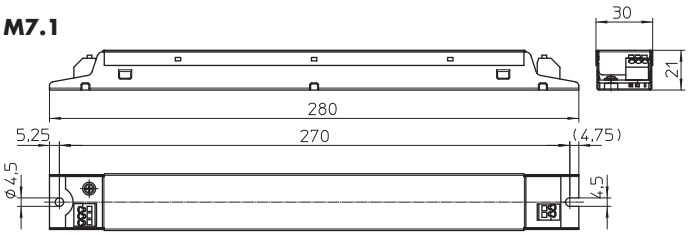
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
Push-in terminals: 0.2–1.5 mm²

Safety features
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class I
SELV (186429)
Product guarantee: 3 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186414		186429	
350 mA	70 °C	60 °C	–	–
700 mA	–	–	75 °C	65 °C
hrs.	30,000	50,000	30,000	50,000

M7.1



Max. output W	Type	**Ref. No.**	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M7.1 – Dimensions: 280x30x21 mm											
42	ECXe 350.129	**186414**	220–240	220–200	350 ±5%	80–120	< 130	> 88	–15 to 45	70	200
60	ECXe 700.140	**186429**	220–240	305–275	700 ±5%	46–86	< 95	> 89	–15 to 45	75	200

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PrimeLine LED Drivers – with Programmable Current

350–700 mA / max. 24 W and max. 37 W
Compact casing shape with integrated cord grip optional for built-in or independent operation.

Electrical characteristics
Secondary side switching of LED modules is allowed (hot wiring).
Power factor at full load: > 0.95
Standby losses: < 0.5 W

Dimming
The dimming function is achieved by applying a PWM signal to the nominal current.
Dimming range: 1 to 100%
If no dimming interface is connected, brightness will stay at 100%.

Programmability
The output current can be freely adjusted in 1 mA steps between 350 mA and 700 mA (factory setting: 350 mA).
An iProgrammer (Ref. No. 186428) and a PC running the respective VS software are required for programming purposes.

Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
DC operation: 198–264 V DC, 0 Hz
(can be reduced to 176 V with reduced service life time)
With integrated through-wiring
Push-in terminals: 0.2–1.5 mm²

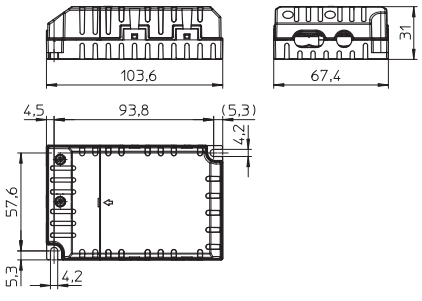
Safety features
Electronic short-circuit protection
Overload and overtemperature protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
SELV
Product guarantee: 5 years

DALI
PUSH
LiCS INDOOR

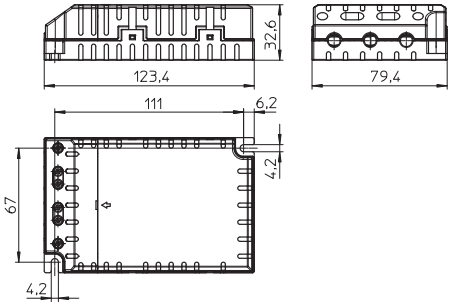
Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. all types	
all	75 °C	65 °C
hrs.	50,000	100,000

K2.1



K3.2



Max. output W	Type	Ref. No.	Mains voltage 0 Hz, 50–60 Hz V	Mains current mA	Current output DC programmable mA	Factory setting mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K2.1 – Dimensions: 103.6x67.4x31 mm												
24	ECXd 700.166	**186465**	198–264	160–100	350–700 ±5%	350	14–34	< 45	> 84	–25 to 50	75	145
			220–240	130–120								
		186573				500						
		186574				700						
K3.2 – Dimensions: 123.4x79.4x32.6 mm												
37	ECXd 700.184	**186503**	198–264	235–155	350–700 ±5%	350	30–53	< 60	> 87	–25 to 50	75	190
			220–240	200–180								
		186571				500						
		186572				700						

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ComfortLine LED Drivers – Dimmable

700 mA / max. 24 W and max. 37 W
Compact casing shape with integrated cord grip optional for built-in or independent operation.

Electrical characteristics
Secondary side switching of LED modules is allowed (hot wiring).
Power factor at full load: > 0.9
Standby losses: < 0.5 W

Dimming
The dimming function is achieved by applying a PWM signal to the nominal current.
Dimming range: 1 to 100%
If no dimming interface is connected, brightness will stay at 100%.

Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
DC operation: 198–264 V DC, 0 Hz
(can be reduced to 176 V with reduced service life time)
With integrated through-wiring
Push-in terminals: 0.2–1.5 mm²

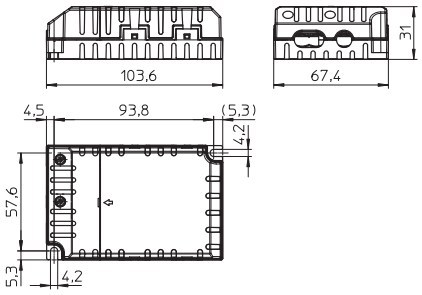
Safety features
Electronic short-circuit protection
Overload and overtemperature protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
SELV
Product guarantee: 5 years

Expected service life time
at operation temperatures at t_c point

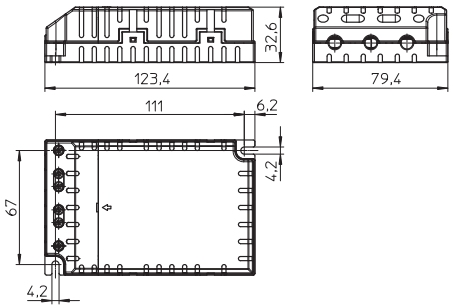
Operation current	Ref. No. all types	
all	75 °C	65 °C
hrs.	50,000	100,000

DALI
PUSH
LiCS INDOOR

K2.1



K3.2



Max. output W	Type	Ref. No.	Mains voltage 0 Hz, 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K2.1 – Dimensions: 103.6x67.4x31 mm											
24	ECXd 700.044	**186280**	198–264	160–100	700 ±5%	14–34	< 45	> 84	–25 to 50	75	145
			220–240	130–120							
K3.2 – Dimensions: 123.4x79.4x32.6 mm											
37	ECXd 700.064	**186308**	198–264	235–155	700 ±5%	30–53	< 60	> 87	–25 to 50	75	190
			220–240	200–180							

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ComfortLine LED Drivers – Dimmable

700 mA / max. 24 W
Compact casing shape with integrated cord grip optional for built-in or independent operation.

Electrical characteristics
Secondary side switching of LED modules is allowed (hot wiring).
Power factor at full load: > 0.9

Dimming
The dimming function is achieved by applying a PWM signal to the nominal current.
Dimming range: 1 to 100%
If no dimming interface is connected, brightness will stay at 100%.

Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
DC operation: 198–264 V DC, 0 Hz
(can be reduced to 176 V with reduced service life time)
With integrated through-wiring
Push-in terminals: 0.2–1.5 mm²

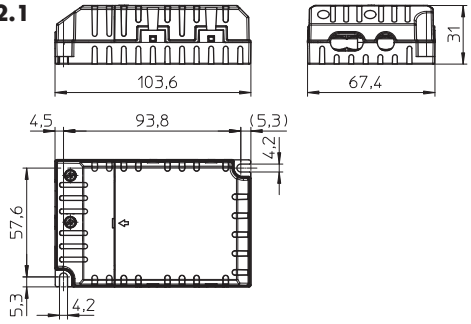
Safety features
Electronic short-circuit protection
Overload and overtemperature protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
SELV
Product guarantee: 5 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186279	
700 mA	75 °C	65 °C
hrs.	50,000	100,000

1–10V

K2.1



Max. output W	Type	Ref. No.	Mains voltage 0 Hz, 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K2.1 – Dimensions: 103.6x67.4x31 mm											
24	ECXd 700.043	**186279**	198–264	160–100	700 ±5%	14–34	< 45	> 84	–25 to 50	75	145
			220–240	130–120							

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ComfortLine LED Drivers

700 mA / max. 37 W

Electrical characteristics
Secondary side switching of LED modules is allowed. (hot wiring)
Power factor at full load: > 0.9

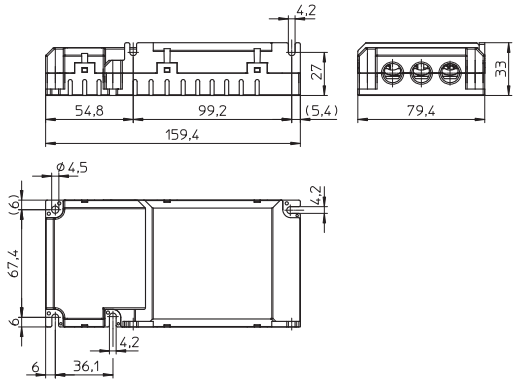
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
DC operation: 198–264 V DC, 0 Hz
(can be reduced to 176 V with reduced service life time)
With integrated through-wiring for L/N/PE
Push-in terminals: 0.25–2.5 mm²

Safety features
Electronic short-circuit protection
Overload and overtemperature protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
SELV
Product guarantee: 5 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186556	
700 mA	75 °C	65 °C
hrs.	50,000	100,000

K3 with cord grip



Max. output W	Type	Ref. No.	Mains voltage 0 Hz, 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K3 with cord grip – Dimensions: 159.4x79.4x33 mm											
37	ECXe 700.211	**186556**	198–264	235–155	700 ±5%	30–53	< 60	> 87	–25 to 50	75	230
			220–240	200–180							

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ComfortLine LED Drivers

700 mA / max. 24 W and max. 37 W
Compact casing shape with integrated cord grip optional for built-in or independent operation.

Electrical characteristics
Secondary side switching of LED modules is allowed (hot wiring).
Power factor at full load: > 0.9

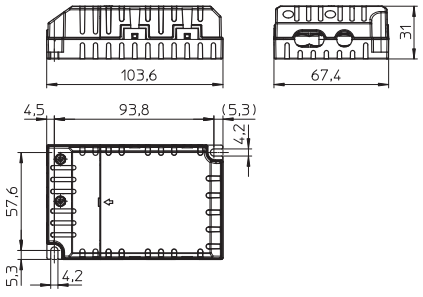
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
DC operation: 198–264 V DC, 0 Hz
(can be reduced to 176 V with reduced service life time)
With integrated through-wiring
Push-in terminals: 0.2–1.5 mm²

Safety features
Electronic short-circuit protection
Overload and overtemperature protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
SELV
Product guarantee: 5 years

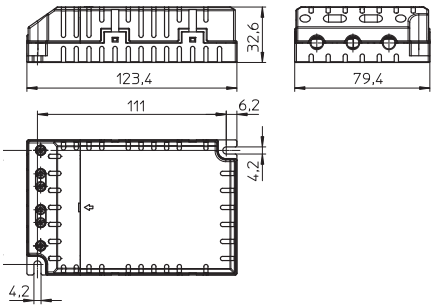
Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. all types	
700 mA	75 °C	65 °C
hrs.	50,000	100,000

K2.1



K3.2



Max. output W	Type	Ref. No.	Mains voltage 0 Hz, 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K2.1 – Dimensions: 103.6x67.4x31 mm											
24	ECXe 700.042	**186278**	198–264	160–100	700 ±5%	14–34	< 45	> 84	–25 to 50	75	135
			220–240	130–120							
K3.2 – Dimensions: 123.4x79.4x32.6 mm											
37	ECXe 700.062	**186306**	198–264	235–155	700 ±5%	30–53	< 60	> 87	–25 to 50	75	170
			220–240	200–180							

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EasyLine LED Drivers

500 mA / max. 25 W
700 mA / max. 35 W
1050 mA / max. 35 W
Compact casing shape with integrated cord grip optional for built-in or independent operation.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.9

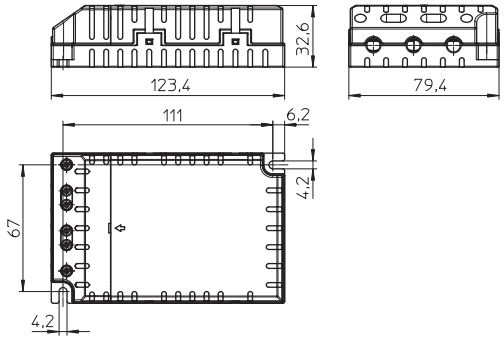
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
Push-in terminals: 0.2–1.5 mm²

Safety features
Temporary electronic short-circuit protection
Overload and overtemperature protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
SELV
Product guarantee: 3 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. all types	
all	70 °C	60 °C
hrs.	30,000	50,000

K3.2



Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K3.2 – Dimensions: 123.4x79.4x32.6 mm											
25	ECXe 500.093	**186363**	220–240	135–125	500 ±7.5%	25–50	< 60	> 89	–20 to 50	70	170
35	ECXe 700.094	**186364**	220–240	185–170	700 ±7.5%	25–50	< 60	> 89	–20 to 50	70	170
35	ECXe 1050.095	**186365**	220–240	185–170	1050 ±7.5%	16–34	< 60	> 90	–20 to 50	70	180

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EasyLine LED Drivers

350 mA / max. 15 W
500 mA / max. 21.5 W
700 mA / max. 30 W / 38.5 W
900 mA / max. 38.7 W
1050 mA / max. 45 W
Compact casing shape with integrated cord grip optional for built-in or independent operation.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.9

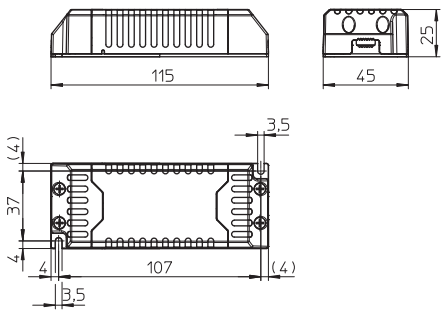
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
Push-in terminals: 0.5–2.5 mm²

Safety features
Temporary electronic short-circuit protection
Overload and overtemperature protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
SELV
Product guarantee: 3 years

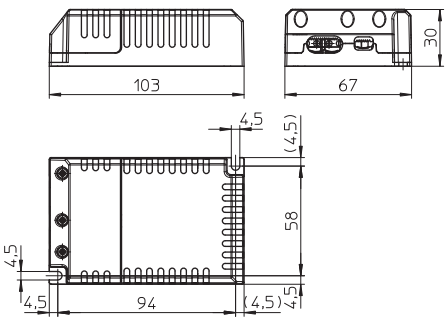
Expected service life time
at operation temperatures at t_c point

Operation current	Best.-Nr. 186591, 186592		186593, 186594, 186595, 186669	
all	75 °C	65 °C	80 °C	70 °C
hrs.	30,000	50,000	30,000	50,000

K51.1



K26.1



Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K51.1 – Dimensions: 115x45x25 mm											
15	ECXe 350.229	**186591**	220–240	90–70	350 ±7.5 %	30–43	< 60	> 80	–20 to 50	75	82
21.5	ECXe 500.230	**186592**	220–240	130–100	500 ±7.5 %	30–43	< 60	> 80	–20 to 50	75	94
K26.1 – Dimensions: 103x67x30 mm											
30	ECXe 700.231	**186593**	220–240	160–140	700 ±7.5 %	30–43	< 60	> 80	–20 to 50	80	120
38.5	ECXe 700.232	**186594**	220–240	205–180	700 ±7.5 %	40–55	< 60	> 80	–20 to 50	80	140
38.7	ECXe 900.253	**186669**	220–240	200–185	900 ±7.5 %	30–43	< 48	> 80	–20 to 50	80	140
45	ECXe 1050.233	**186595**	220–240	235–210	1050 ±7.5 %	30–43	< 60	> 80	–20 to 50	80	140

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ComfortLine LED Drivers – Dimmable

700 mA / max. 30 W
1050 mA / max. 37,8 W

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.9

Dimming (except 186393)
Dimmable with phase-cutting trailing-edge dimmer
Minimum dimmer load has to be observed.
The compatibility of the driver and the dimmer has to be confirmed prior to installation to avoide flickering and/or noises.

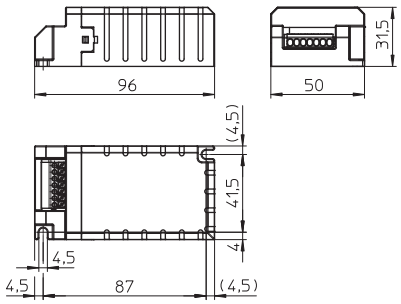
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
Push-in terminals: 0.2–1.5 mm²

Safety features
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
SELV
Product guarantee: 5 years

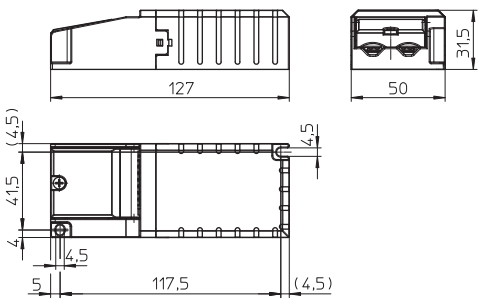
Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186393		186394, 186395	
700 mA	75 °C	65°C	–	–
1050 mA	–	–	75 °C	65 °C
hrs.	50,000	100,000	50,000	100,000

K35



K35 with cord grip



Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K35 – Dimensions: 96x50x31.5 mm											
30	ECXe 700.112	**186393**	220–240	155–140	700 ±5%	17–42	< 60	> 88	–25 to 50	75	130
K35 – Dimmable – Dimensions: 96x50x31.5 mm											
37,8	ECXd 1050.113	**186394**	220–240	200–180	1050 ±10%	18–36	< 60	> 85	–10 to 40	75	140
K35 with cord grip – Dimmable – Dimensions: 127x50x31.5 mm											
37,8	ECXd 1050.113	**186395**	220–240	200–180	1050 ±10%	18–36	< 60	> 85	–10 to 40	75	155

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ComfortLine LED Drivers

350 mA / max. 11 W
500 mA / max. 16 W
700 mA / max. 17 W
1050 mA / max. 20 W

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.55 C

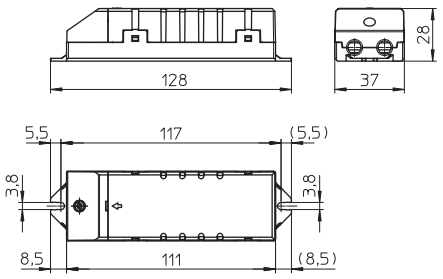
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
DC operation: 176–264 V DC, 0 Hz
(can be reduced to 176 V with reduced service life time)
Screw terminals: 2.5 mm²
With integrated cord grip

Safety features
Protection against transient main peaks up to 1 kV (between L and N)
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
SELV
Product guarantee: 5 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186679		186680		186681		186682	
350 mA	70 °C	60 °C	–	–	–	–	–	–
500 mA	–	–	75 °C	65 °C	–	–	–	–
700 mA	–	–	–	–	75 °C	65 °C	–	–
1050 mA	–	–	–	–	–	–	75 °C	65 °C
hrs.	50,000	100,000	50,000	100,000	50,000	100,000	50,000	100,000

K39



Max. output W	Type	Ref. No.	Mains voltage 0 Hz, 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K39 – Dimensions: 128x37x28 mm											
11	ECXe 350.009	**186679**	176–264	75–51	350 ±5%	2–32	34	> 87	–20 to 50	70	71
			220–240	122–117							
16	ECXe 500.010	**186680**	176–264	106–72	500 ±5%	2–32	34	> 88	–20 to 50	75	71
			220–240	160–155							
17	ECXe 700.011	**186681**	176–264	117–79	700 ±5%	2–25	34	> 87	–20 to 50	75	71
			220–240	188–178							
20	ECXe 1050.012	**186682**	176–264	137–92	1050 ±5%	2–19	34	> 87	–20 to 45	75	71
			220–240	210–202							

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ComfortLine LED Drivers

350 mA / max. 8.75 W

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.6

Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
DC operation: 198–264 V DC, 0 Hz
(can be reduced to 176 V with reduced service life time)
Screw terminals: 2.5 mm²

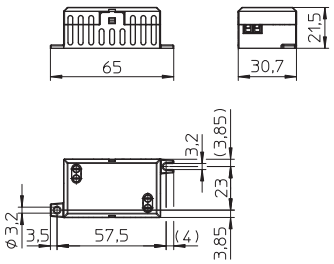
Safety features
Protection against transient main peaks up to 1 kV (between L and N)
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
SELV
Product guarantee: 5 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186519	
350 mA	80 °C	70 °C
hrs.	50,000	100,000

Special Feature
Protection against transient main peaks up to 1 kV (between L and N)

K29



Max. output W	Type	Ref. No.	Mains voltage 0 Hz, 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K29 – Dimensions: 65x30.7x21.5 mm											
8.75	ECXe 350.192	**186519**	176–264 220–240	60–39 79–73	350 ±5%	3–25	26	> 78	–25 to 50	80	35

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EasyLine LED Drivers – Dimmable

150–700 mA / max. 6–36 W

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.85

Dimming
Dimmable with phase-cutting trailing-edge dimmer.
Minimum dimmer load has to be observed.
The compatibility of the driver and the dimmer has to be confirmed prior to installation to avoide flickering and/or noises.

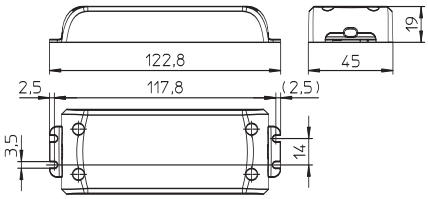
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
Screw terminals: 0.5–2.5 mm²

Safety features
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
SELV
Product guarantee: 3 years

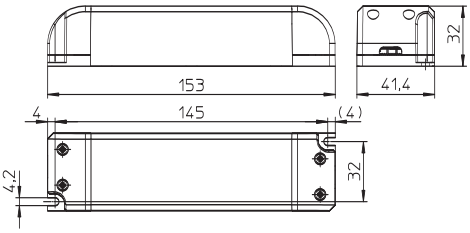
Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186415, 186416, 186451		186505		186447, 186448, 186449, 186450	
all	80 °C	70 °C	75 °C	65 °C	70 °C	60 °C
hrs.	30,000	50,000	30,000	50,000	30,000	50,000

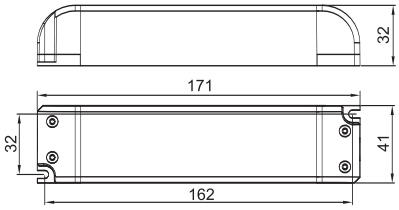
K52



K53



K55



Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K52 – Dimensions: 122.8x45x19 mm											
6	ECXd 150.151	**186447**	220–240	40–35	150 ±8%	27–41	60	> 78	–15 to 45	70	70
10	ECXd 500.152	**186448**	220–240	60–50	500 ±8%	13–20	30	> 80	–15 to 45	70	70
12	ECXd 250.153	**186449**	220–240	70–60	250 ±8%	27–48	60	> 80	–15 to 45	70	70
K53 – Dimensions: 153x41.4x32 mm											
18	ECXd 350.130	**186415**	220–240	100–90	350 ±8%	32–52	60	> 85	–15 to 45	80	70
18	ECXd 700.134	**186450**	220–240	95–85	700 ±8%	16–26	35	> 85	–15 to 45	70	140
21	ECXd 500.186	**186505**	220–240	110–100	500 ±8 %	28–42	50	> 85	–15 to 45	75	100
25	ECXd 700.131	**186416**	220–240	140–120	700 ±8%	22–36	60	> 85	–15 to 45	80	140
K55 – Dimensions: 171x41x32 mm											
36	ECXd 700.155	**186451**	220–240	190–170	700 ±8%	32–52	60	> 83	–15 to 45	80	170

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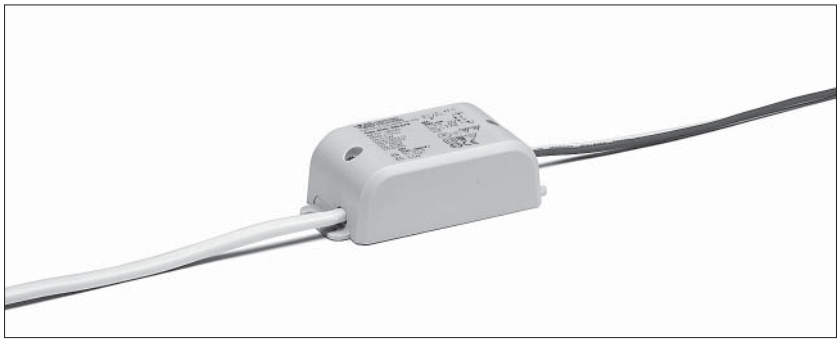
EasyLine LED Drivers

700 mA / max. 5.2 W
For applications according to EN 60335

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.5

Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
Pre-assembled connection leads
primary: 2x0.75 mm², length: 180 mm
secondary: 2x0.5–0.75 mm², length: 180 mm

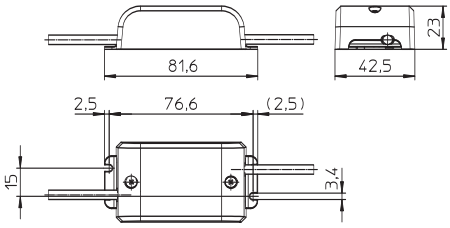
Safety features
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
SELV
Product guarantee: 3 years



Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186458	
700 mA	70 °C	60 °C
hrs.	30,000	50,000

K51



Max. output W	Type	**Ref. No.**	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K51 – Dimensions: 82x42.5x23 mm											
5.2	ECXe 700.161	**186458**	220–240	50–30	700 ±8%	2.8–7.4	< 60	> 70	–15 to 45	70	45

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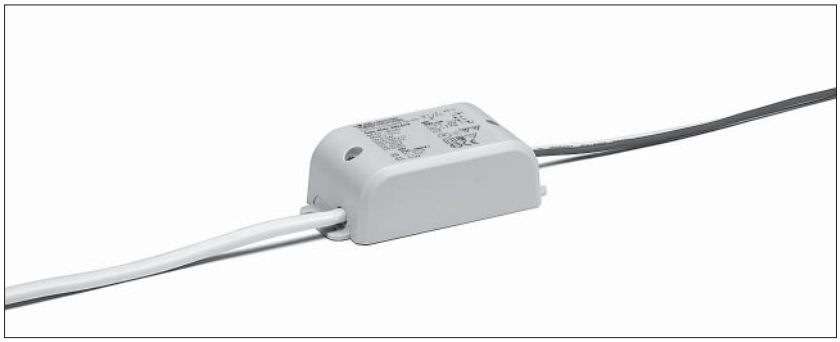
EasyLine LED Drivers

350 mA / max. 7 W
700 mA / max. 5.6 W



Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.5

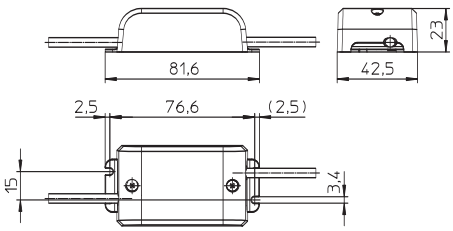
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
Pre-assembled connection leads
primary: 2x0.75 mm², length: 180 mm
secondary: 2x0.5–0.75 mm², length: 180 mm

Safety features
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
SELV
Product guarantee: 3 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. all types	
all	75 °C	65 °C
hrs.	30,000	50,000

K51



Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K51 – Dimensions: 81.6x42.5x23 mm											
5.6	ECXe 700.081	**186348**	220–240	45–30	700 ±5%	2.8–8	< 60	> 70	–15 to 45	75	45
7	ECXe 350.079	**186342**	220–240	50–36	350 ±5%	8.4–20	< 60	> 70	–15 to 45	75	45

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EasyLine LED Drivers

350 mA / max. 20 W
500 mA / max. 12 W
The LED constant-current drivers are designed for use in residential lighting.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.9

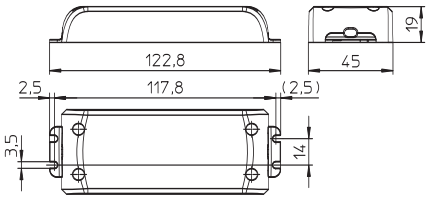
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
Screw terminals: 0.5–2.5 mm²

Safety features
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
SELV
Product guarantee: 3 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186508		186507	
350 mA	–	–	75 °C	65 °C
500 mA	70 °C	60 °C	–	–
hrs.	30,000	50,000	30,000	50,000

K52



Products under development; preliminary technical datas

Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K52 – Dimensions: 122.8x45x19 mm											
12	ECXe 500.189	**186508**	220–240	64–58	500 ±5 %	8–24	< 60	> 85	–15 to 45	70	65
20	ECXe 350.188	**186507**	220–240	107–98	350 ±5 %	40–57	< 60	> 85	–15 to 45	75	70

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EasyLine LED Drivers

350 mA / max. 12.6 W and 20 W
500 mA / max. 15 W
700 mA / max. 20.3 W and 25.2 W
The LED constant-current drivers are designed for use in residential lighting.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.5 or > 0.95 (186353)

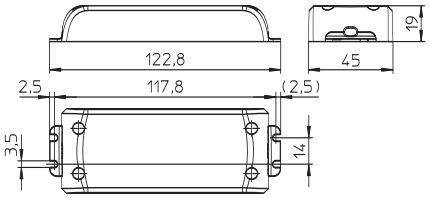
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
Screw terminals: 0.5–2.5 mm²

Safety features
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
SELV
Product guarantee: 3 years

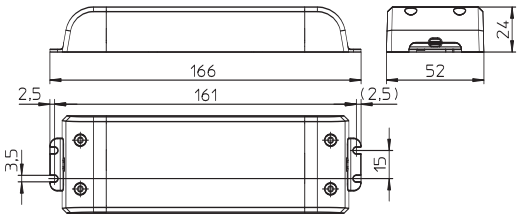
Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186341, 186431		186349		186350		186353	
350 mA	75 °C	65 °C	–	–	–	–	–	–
500 mA	–	–	75 °C	65 °C	–	–	–	–
700 mA	–	–	–	–	75 °C	65 °C	70 °C	60 °C
hrs.	30,000	50,000	30,000	50,000	30,000	50,000	30,000	50,000

K52



K54



Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K52 – Dimensions: 122.8x45x19 mm											
12.6	ECXe 350.078	**186341**	220–240	100–70	350 ±5%	8.4–36	< 60	> 83	–15 to 45	75	65
15	ECXe 500.082	**186349**	220–240	90–70	500 ±5%	8–30	< 60	> 83	–15 to 45	75	70
20	ECXe 350.142	**186431**	220–240	190–170	350 ±5%	18–57	< 63	> 85	–15 to 45	75	140
20.3	ECXe 700.083	**186350**	220–240	115–100	700 ±5%	8–29	< 60	> 83	–15 to 45	75	70
K54 – Dimensions: 166x52x24 mm											
25.2	ECXe 700.086	**186353**	220–240	130–115	700 ±8%	22–36	< 60	> 88	–15 to 45	70	140

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EasyLine LED Drivers

700 mA / max. 31 W
1050 mA / max. 47 W
The LED constant-current drivers are designed for use in residential lighting.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.95

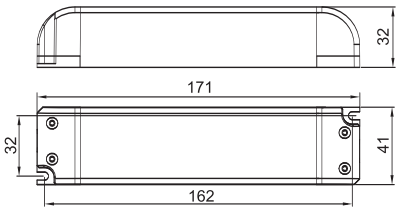
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
Screw terminals: 0.5–2.5 mm²

Safety features
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
SELV
Product guarantee: 3 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186501		186502	
700 mA	75 °C	65 °C	–	–
1050 mA	–	–	80 °C	70 °C
hrs.	30,000	50,000	30,000	50,000

K55



Max. output W	Type	**Ref. No.**	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K55 – Dimensions: 171x41x32 mm											
31	ECXe 700.182	**186501**	220–240	160–140	700 ±8%	30–45	< 55	> 87	–15 to 45	75	110
47	ECXe 1050.183	**186502**	220–240	245–215	1050 ±8%	27–45	< 57	> 89	–15 to 45	80	110

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EasyLine LED Drivers

350–1050 mA / max. 30–60 W
The LED constant-current drivers are designed for use in residential lighting.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.95

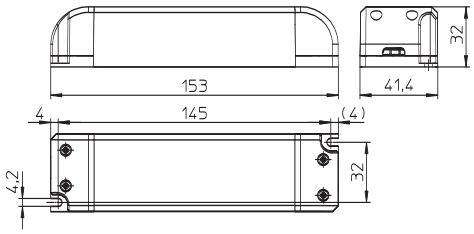
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
Screw terminals: 0.5–2.5 mm²

Safety features
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
SELV
Product guarantee: 3 years

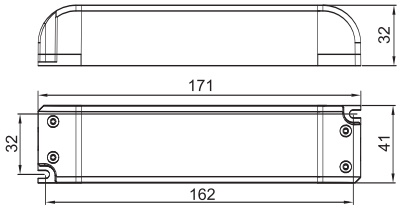
Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186430		186351, 186522		186548	
350 mA	70 °C	60 °C	–	–	–	–
750 mA	–	–	–	–	75 °C	65 °C
1050 mA	–	–	75 °C	65 °C	–	–
hrs.	30,000	50,000	30,000	50,000	30,000	50,000

K53



K55



Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K53 – Dimensions: 153x41.4x32 mm											
30	ECXe 350.141	**186430**	220–240	160–140	350 ±6%	57–86	< 90	> 89	–15 to 45	70	200
31.5	ECXe 1050.084	**186351**	220–240	150–145	1050 ±6%	20–30	< 60	> 88	–15 to 45	75	140
K55 – Dimensions: 171x41x32 mm											
60	ECXe 700.206	**186548**	220–240	320–294	700 ±8%	43–86	< 120	> 85	–15 to 45	75	180
60	ECXe 1050.183	**186522**	220–240	320–294	1050 ±8%	40–58	< 70	> 85	–15 to 45	75	180

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PrimeLine LED Drivers – Dimmable with Programmable Current

350–1050 mA / max. 150 W
These electronic LED constant current drivers are especially designed for use in street lighting systems.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.95
Constant lumen output

Dimming
The dimming function is achieved by applying an analogue dimming signal to the nominal current.
Dimming range: 10 to 100%
If no dimming interface is connected, brightness will stay at 100%.

Programmability
The output current can be freely adjusted in 1 mA steps between 350 mA and 1050 mA (factory setting: 350 mA).
An iProgrammer (Ref. No. 186428) and a PC running the respective VS software are required for programming purposes.

Connection details
Mains voltage: 220–240 V
Mains frequency: 50–60 Hz
Pre-assembled connection leads:
primary: 0.75 mm², length: 300 mm
secondary: 0.75 mm², length: 300 mm

Safety features
Protection against transient main peaks up to 6 kV (between L and N)

Double isolated
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP65

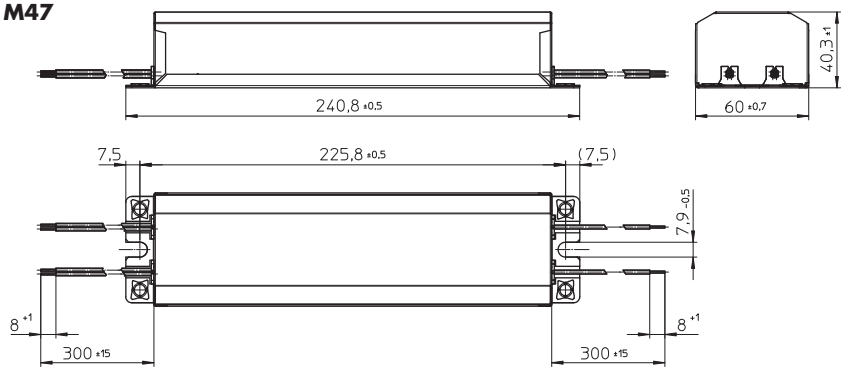
Protection class II
The LEDs are thermally protected by the driver's NTC interface, which ensures the current will be reduced when a critical temperature is reached
Product guarantee: 5 years

1–10V

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. all types	
350–1050 mA	80 °C	70 °C
hrs.	50,000	100,000

M47



Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output* DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
Dimensions: 240.8x60x40.3 mm											
150	ECXd 1050G.146	**186442**	220–240	757–694	350–1050±5%	85–260	< 310	> 91	–40 to 60	80	1050

* Depends on the adjusted current output

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ComfortLine LED Drivers – for Power Reduction

700/400 mA / max. 150 W

These electronic LED constant current drivers are especially designed for use in street lighting systems. They provide a simple power-reduction option by connecting a further phase, which makes it possible to switch between 700 mA and 400 mA.

Electrical characteristics

Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.95

Power reduction

The nominal current output will be reduced by connecting the control phase (LST) to 57%.
Connecting L (black) and LST (orange) to the mains voltage reduces output by lowering the output current. If this function is not used, an additional terminal should be provided in the luminaire to fix the LST wire.

Connection details

Mains voltage: 220–277 V ± 10%
Mains frequency: 50–60 Hz
K37: Push-in terminals: 0.75–2.5 mm²
K37 with cord grip:
- Pre-assembled connection leads:
  primary: 5x1 mm², 200 mm
  secondary: 2x1.5 mm², 200 mm
- Suitable for independent operation when capable connector acc. to EN 60598 is used.

Safety features

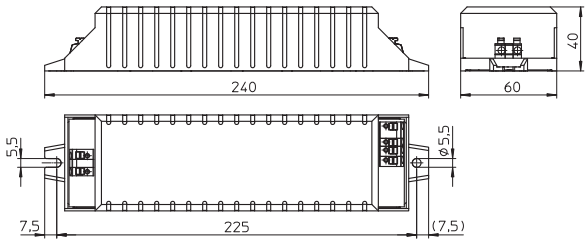
Protection against transient main peaks up to 3 kV (between L and N) and up to 4 kV (between L, N and PE)
Electronic short-circuit protection
Overload and overtemperature protection
Protection against "no load" operation
Degree of protection: IP20 or IP66 (K37 with cord grip)
Protection class I
Product guarantee: 5 years

Expected service life time

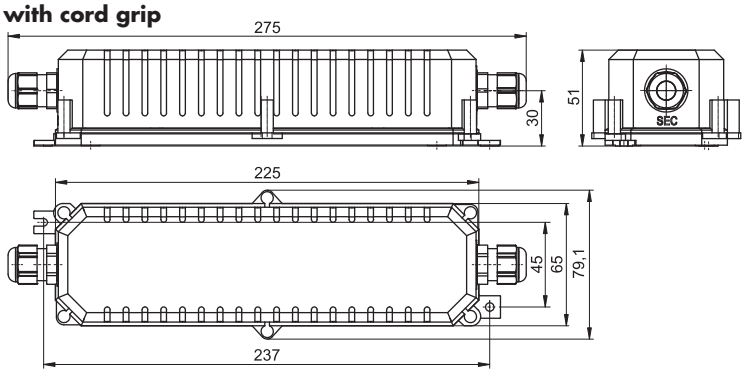
at operation temperatures at t_c point

Operation current	Ref. No. all types	
all	75 °C	65 °C
hrs.	50,000	100,000

K37



K37 with cord grip



Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K37 – Dimensions: 240x60x40 mm											
150	ECXd 700.023	**186202**	220–277	735–585	700 +5/–10%	48–215	445	> 93	–40 to 60	75	440
					400 +5/–10%	48–375					
K37 with cord grip – Dimensions: 275x79.1x51 mm											
150	ECXd 700.023	**186203**	220–277	735–585	700 +5/–10%	48–215	445	> 93	–40 to 60	75	560
					400 +5/–10%	48–375					

Power reduction can be effected with VS Power Switches PR12 K LC and PR12 K D.
These power switches are used to switch the 230-V power reduction input on the LED driver of a luminaire.

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ComfortLine LED Drivers – Dimmable

700 mA / max. 75, 100 and 150 W
These electronic LED constant current drivers are especially designed for use in street lighting systems.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.9

Dimming
The dimming function is achieved by applying an analogue dimming signal to the nominal current.
Dimming range: 10 to 100%
If no dimming interface is connected, brightness will stay at 100%.

Connection details
Mains voltage: 120–277 V ±10%
Mains frequency: 50–60 Hz
Pre-assembled connection leads:
primary: 2x0.75 mm²
secondary: 4x0.75 mm²

Safety features
Protection against transient main peaks up to 6 kV (between L and N)
Electronic short-circuit protection
Overload protection
Overtemperature protection (186402)
Protection against "no load" operation
Degree of protection: IP65
Protection class II
Product guarantee: 5 years

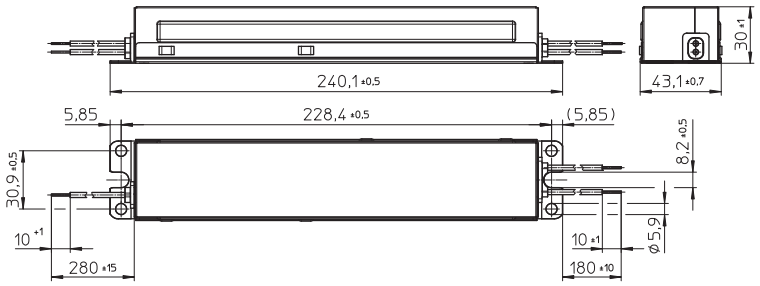
Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186400, 186402		186401	
700 mA	85 °C	75 °C	80 °C	70 °C
hrs.	50,000	100,000	50,000	100,000

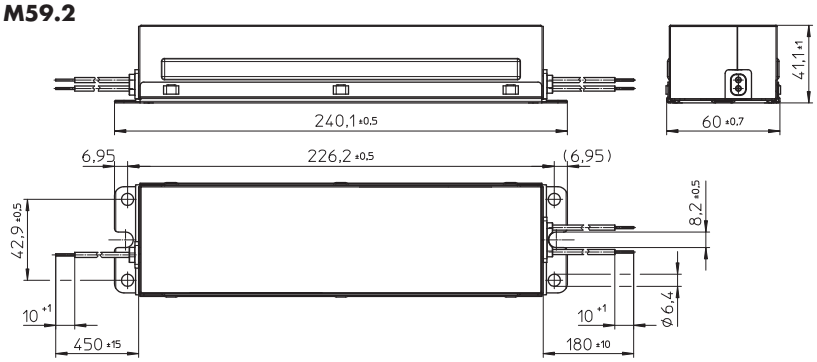
1–10V

LiCS OUTDOOR

M59.1



M59.2



Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M59.1 – Dimensions: 240.1x43.1x30 mm											
75	ECXd 700G.117	**186400**	120–277	700–304	700 ±5%	54–107	< 250	> 88	–40 to 55	85	625
M59.2 – Dimensions: 240.1x60x41.1 mm											
100	ECXd 700G.118	**186401**	120–277	917–398	700 ±5%	70–143	< 250	> 88	–40 to 55	80	1070
150	ECXd 700G.119	**186402**	120–277	1363–591	700 ±5%	107–214	< 250	> 88	–40 to 55	85	1070

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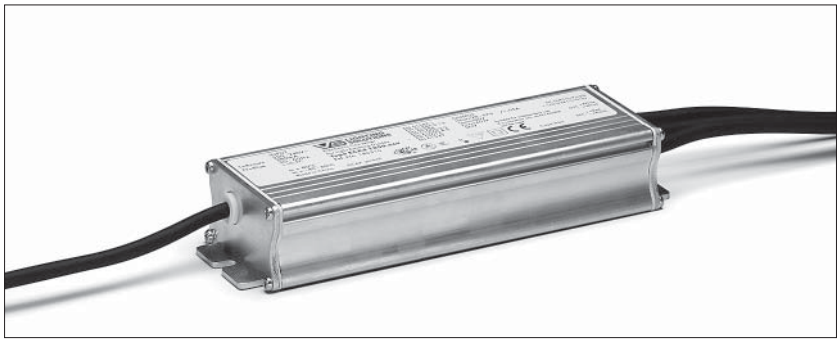
ComfortLine LED Drivers – Dimmable

1050 mA / max. 60 W
These electronic LED constant current drivers are especially designed for use in street lighting systems.



Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.96

Dimming
The dimming function is achieved by applying an analogue dimming signal to the nominal current.
Dimming range: 10 to 100%
If no dimming interface is connected, brightness will stay at 100%.

Connection details
Mains voltage: 220–240 V ± 10%
Mains frequency: 50–60 Hz
Pre-assembled connection leads:
primary: 2x0.75 mm², length: 300 mm
secondary: 6x0.75 mm², length: 300 mm

Safety features
Protection against transient main peaks up to 4 kV (between L and N)
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP67
Protection class II
SELV
Product guarantee: 5 years

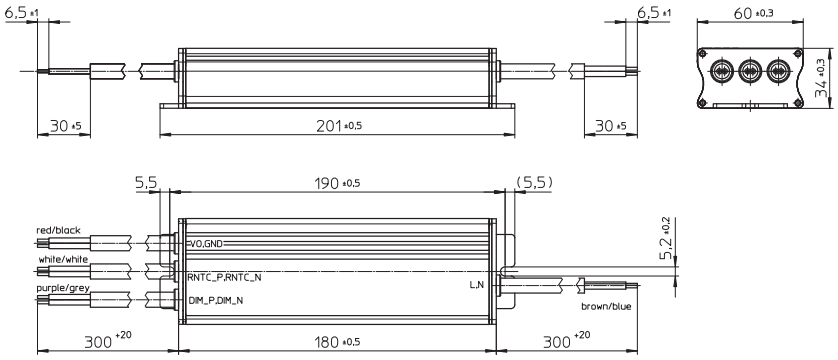
Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186316	
1050 mA	80 °C	70 °C
hrs.	50,000	100,000

1–10V

LiCS OUTDOOR

M57



Max. output W	Type	**Ref. No.**	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M57 – Dimensions: 201x60x34 mm											
60	ECXd 1050.069	**186316**	220–240	310–280	1050 ±5%	28–57	< 60	> 88	–40 to 50	80	730

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ComfortLine LED Drivers – Dimmable

700 mA / max. 38.5 W
These electronic LED constant current drivers are especially designed for use in street lighting systems.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.96

Dimming
The dimming function is achieved by applying analogue dimming signal to the nominal current.
Dimming range: 10 to 100%
If no dimming interface is connected, brightness will stay at 100%.

Connection details
Mains voltage: 120–277 V ±10%
Mains frequency: 50–60 Hz
Pre-assembled connection leads:
primary: 2x0.75 mm², length: 228 mm
secondary: 4x0.75 mm², length: 228 mm

Safety features
Protection against transient main peaks up to 6 kV (between L and N)
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP54
Protection class II
SELV
Product guarantee: 5 years

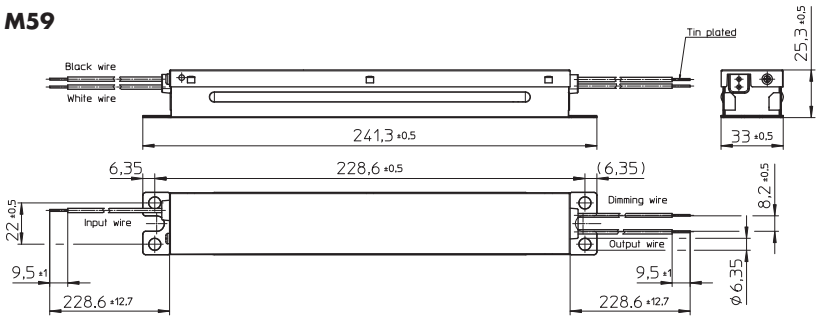
Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186490	
700 mA	80 °C	70 °C
hrs.	50,000	100,000

1–10V

LiCS OUTDOOR

M59



Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M59 – Dimensions: 241.3x33x25.3 mm											
38.5	ECXd 700G.177	**186490**	120–277	440–200	700 ±5%	32–55	60	> 85	–30 to 55	80	398

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ComfortLine LED Drivers – for Power Reduction

700/400 mA / max. 75, 100 and 150 W

These electronic LED constant current drivers are especially designed for use in street lighting systems. They provide a simple power-reduction option by connecting a further phase, which makes it possible to switch between 700 mA and 400 mA.

Electrical characteristics

Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.9

Connection details

Mains voltage: 120–277 V ±10%
Mains frequency: 50–60 Hz
Pre-assembled connection leads:
primary: 3x0.75 mm²
secondary: 2x0.75 mm²

Power reduction

The nominal current output will be reduced by connecting the control phase (L_{ST}) to 57%.
Connecting L (black) and L_{ST} (orange) to the mains voltage reduces output by lowering the output current. If this function is not used, an additional terminal should be provided in the luminaire to fix the L_{ST} wire.

Safety features

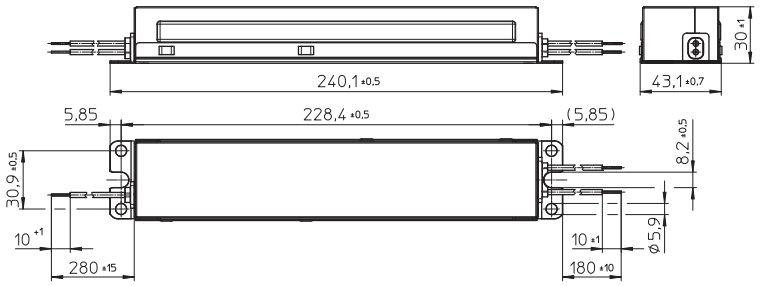
Protection against transient main peaks up to 6 kV (between L and N)
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP65
Protection class II
Product guarantee: 5 years

Expected service life time

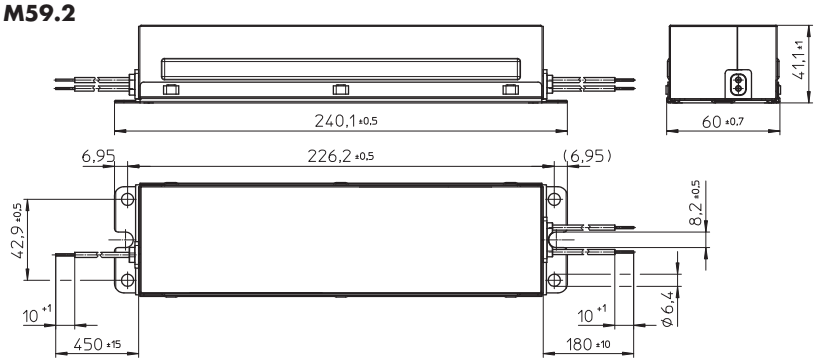
at operation temperatures at t_c point

Operation current	Ref. No. 186397, 186509		Ref. No. 186398	
700 mA	85 °C	75 °C	80 °C	70 °C
hrs.	50,000	100,000	50,000	100,000

M59.1



M59.2



Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M59.1 – Dimensions: 240.1x43.1x30 mm											
75	ECXe 700G.114	**186397**	120–277	700–304	700 ±5% 400 ±5%	54–107	< 250	> 88	–40 to 55	85	625
M59.2 – Dimensions: 240.1x60x41.1 mm											
100	ECXe 700G.115	**186398**	120–277	917–398	700 ±5% 400 ±5%	70–143	< 250	> 88	–40 to 55	80	1070
150	ECXe 700G.190	**186509**	120–277	1363–591	700 ±5% 400 ±5%	107–214	< 250	> 88	–40 to 55	85	1070

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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ComfortLine LED Drivers

700 mA / max. 38.5 W
These electronic LED constant current drivers are especially designed for use in street lighting systems.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.9

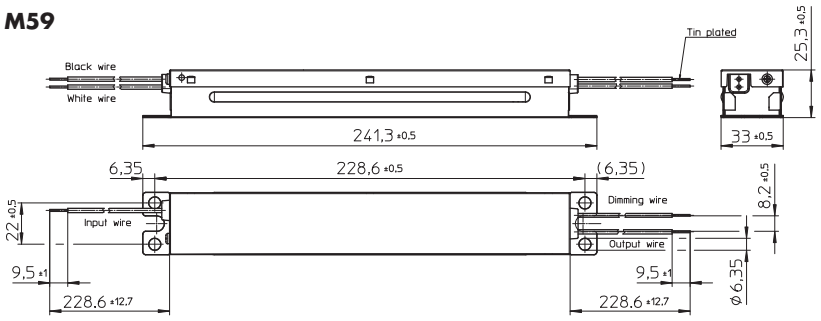
Connection details
Mains voltage: 120–277 V ±10%
Mains frequency: 50–60 Hz
Pre-assembled connection leads:
primary: 2x0.75 mm², length: 228 mm
secondary: 2x0.75 mm², length: 228 mm

Safety features
Protection against transient main peaks up to 6 kV (between L and N)
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP54
Protection class II
SELV
Product guarantee: 5 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186489	
700 mA	80 °C	70 °C
hrs.	50,000	100,000

M59



Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M59 – Dimensions: 241.3x33x25.3 mm											
38.5	ECXe 700G.176	**186489**	120–277	440–200	700 ±5%	32–55	60	> 85	–30 to 55	80	393

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ComfortLine LED Drivers

700 mA / max. 150 W
These electronic LED constant current drivers are especially designed for use in street lighting systems.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.9

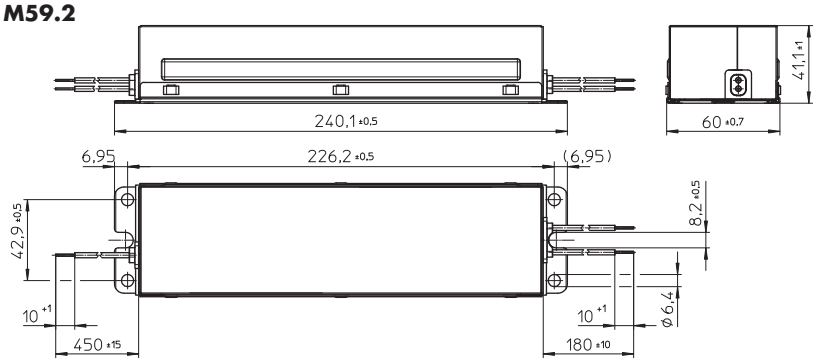
Connection details
Mains voltage: 120–277 V ±10%
Mains frequency: 50–60 Hz
Pre-assembled connection leads:
primary: 2x0.75 mm², length: 450 mm
secondary: 2x0.75 mm², length: 180 mm

Safety features
Protection against transient main peaks up to 6 kV (between L and N)
Electronic short-circuit protection
Overload and overtemperature protection
Protection against "no load" operation
Degree of protection: IP65
Protection class II
Product guarantee: 5 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186399	
700 mA	85 °C	75 °C
hrs.	50,000	100,000

M59.2



Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M59.2 – Dimensions: 240.1x60x41.1 mm											
150	ECXe 700G.116	**186399**	120–277	1363–591	700 ±5%	107–214	< 250	> 88	–40 to 55	85	1070

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ComfortLine LED Drivers

350 mA / max. 40 W
700 mA / max. 40 W
1050 mA / max. 40 W
These electronic LED constant current drivers are especially designed for use in street lighting systems.

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.9

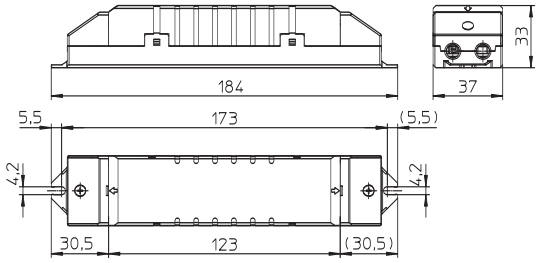
Connection details
Mains voltage: 120–277 V ±10%
Mains frequency: 50–60 Hz
Push-in terminals: 0.75–2.5 mm²

Safety features
Protection against transient main peaks up to 4 kV (between L and N)
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
Product guarantee: 5 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186550		186551		186552	
350 mA	70 °C	60 °C	–	–	–	–
700 mA	–	–	70 °C	60 °C	–	–
1050 mA	–	–	–	–	75 °C	65 °C
hrs.	50,000	100,000	50,000	100,000	50,000	100,000

K39.2



Products under development; preliminary technical datas

Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K39.2 – Dimensions: 184x37x33 mm											
40	ECXe 350.207	**186550**	120–277	387–168	350 ±5%	78–114	< 120	> 86	–25 to 50	70	160
40	ECXe 700.208	**186551**	120–277	387–168	700 ±5%	39–57	< 60	> 86	–25 to 50	70	160
40	ECXe 1050.209	**186552**	120–277	387–168	1050 ±5%	26–38	< 60	> 86	–25 to 50	75	160

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ComfortLine LED Drivers – Dimmable

700 mA / max. 112 W
1050 mA / max. 126 W
With 12 V interface

These electronic LED constant current drivers are designed for use in industrial hall lighting systems.

Electrical characteristics

Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.95
Standby losses: < 0.5 W

Dimming

The dimming function is achieved by applying a PWM signal to the nominal current.
Dimming range: 3 to 100%
If no dimming interface is connected, brightness will stay at 100%.

Connection details

Mains voltage: 220–240 V ± 10%
Mains frequency: 50–60 Hz
DC operation: 198–264 V DC, 0 Hz
(can be reduced to 176 V with reduced service life time)
Push-in terminals: 0.2–1.5 mm²

Safety features

Electronic short-circuit protection
Overload and overtemperature protection
Protection against "no load" operation
Degree of protection: IP20
Protection class I
The LEDs are thermally protected by the driver's NTC interface, which ensures the current will be reduced when a critical temperature is reached.
Product guarantee: 5 years

NTC at LED module 10 k (Type Nurata NCP18XH103J03RB)	
R (k)	Nominal current (%)
10	100
< 1.49	60
< 1.13	0 (off)

DALI

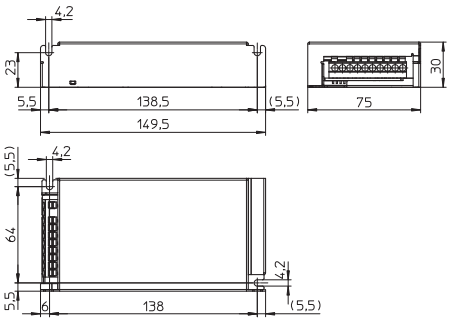
PUSH

Expected service life time

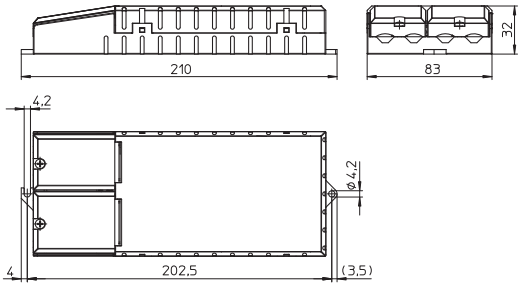
at operation temperatures at t_c point

Operation current	Ref. No. 186299		186303		186300		186304	
700 mA	70 °C	60 °C	–	–	80 °C	70 °C	–	–
1050 mA	–	–	75 °C	65 °C	–	–	90 °C	80 °C
hrs	50.000	100.000	50.000	100.000	50.000	100.000	50.000	100.000

M36



K38 with cord grip



Max. output W	Type	Ref. No.	Mains voltage 0 Hz, 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	12 V interface max. 2 W	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M36 – Dimensions: 149.5x75x30 mm												
112	ECXd 700.058	**186299**	198–264	595–445	700 ±5%	85–160	< 450	> 91	yes	–25 to 50	70	288
			220–240	550–510								
126	ECXd 1050.060	**186303**	198–264	660–495	1050 ±5%	85–120	< 450	> 91	yes	–25 to 50	75	288
			220–240	630–590								
K38 with cord grip – Dimensions: 210x83x32 mm												
112	ECXd 700.058	**186300**	198–264	595–445	700 ±5%	85–160	< 450	> 91	yes	–25 to 50	80	335
			220–240	550–510								
126	ECXd 1050.060	**186304**	198–264	660–495	1050 ±5%	85–120	< 450	> 91	yes	–25 to 50	90	335
			220–240	630–590								

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ComfortLine LED Drivers – Dimmable and Adjustable

900/1050/1200/1400 mA / max. 60.2 W
The dial can be used to set the current output to 900 mA (1), 1050 mA (2), 1200 mA (3) or 1400 mA (4).

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.95

Dimming
The dimming function is achieved by applying a PWM signal.
Dimming range: 3 to 100%
If no dimming interface is connected, brightness will stay at 100%.

Connection details
Mains voltage: 220–240 V ± 10%
Mains frequency: 50–60 Hz
DC operation: 198–264 V DC, 0 Hz
Push-in terminals: 0.2–1.5 mm²
(NTC interface: 0.2–0.5 mm²)

Safety features
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class I

SELV
The LEDs are thermally protected by the driver's NTC interface, which ensures the current will be reduced when a critical temperature is reached.
Product guarantee: 5 years

NTC at LED module 220 k	
R (k)	Nominal current (%)
34	100
27	60
16	0 (off)

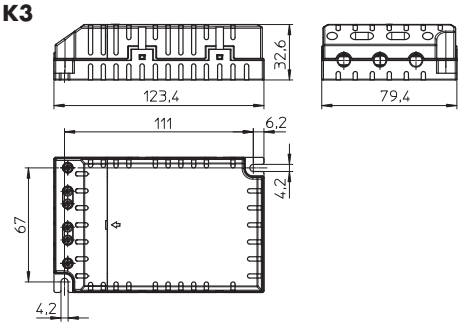
1–10V

LiCS OUTDOOR

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. 186208	
all	85 °C	75 °C
hrs.	50,000	100,000

K3



Max. output W	Type	Ref. No.	Mains voltage 0 Hz, 50/60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K3 – Dimensions: 123.4x79.4x33 mm											
38.7/ 45.1/ 51.6/ 60.2	ECXd 1400.025	**186208**	198–264 220–240	315–290 350–265	900 +5/–10%/ 1050 +5/–10%/ 1200 +5/–10%/ 1400 +5/–10%	20–43	< 52	> 85	–20 to 50	85	230

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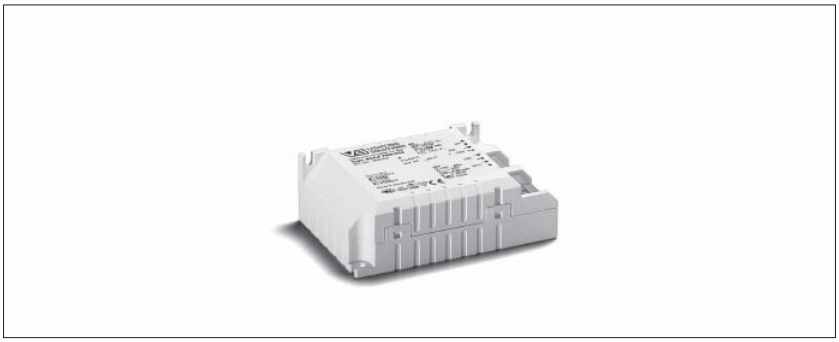
ComfortLine LED Drivers – Dimmable and Adjustable

350/500/600/700 mA / max. 39.9 W
The dial can be used to set the current output to 350 mA (1), 500 mA (2), 600 mA (3) or 700 mA (4).



NTC at LED module 220 kΩ	
R (kΩ)	Nominal current (%)
34	100
27	60
16	0 (off)

1–10V

LiCS OUTDOOR

Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: 0.95

Dimming
The dimming function is achieved by applying a PWM signal.
Dimming range: 3 to 100%
If no dimming interface is connected, brightness will stay at 100%.

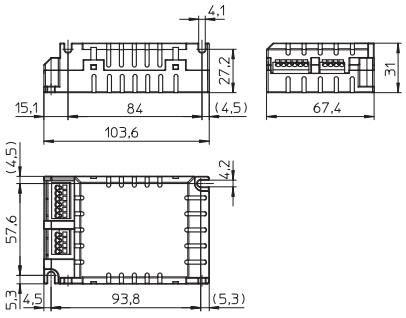
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
DC operation: 176–264 V DC, 0 Hz
Push-in terminals: 0.2–1.5 mm²
(NTC interface: 0.2–0.5 mm²)

Safety features
Electronic short-circuit protection
Overvoltage protection: 2 kV acc. to EN 51000-4-5
Overload protection
Protection against "no load" operation
Degree of protection: IP20
Protection class II
SELV
The LEDs are thermally protected by the driver's NTC interface, which ensures the current will be reduced when a critical temperature is reached.
Product guarantee: 5 years

Expected service life time
at operation temperatures at t_c point

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

K2



Max. output W	Type	Ref. No.	Mains voltage 0 Hz, 50/60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
K2 – Dimensions: 103.6x67.4x31 mm											
19.95/ 28.5/ 34.2/ 39.9	ECXd 700.024	**186581**	176–264 220–240	265–175 220–200	350 +5/–10%/ 500 +5/–10%/ 600 +5/–10%/ 700 +5/–10%	20–57	60	> 85	–20 to 50	80	190

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ComfortLine LED Drivers

700 mA / max. 112 W
1050 mA / max. 126 W
With 12 V interface

These electronic LED constant current drivers are designed for use in industrial hall lighting systems.

Electrical characteristics

Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.95

Connection details

Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
DC operation: 198–264 V DC, 0 Hz
(can be reduced to 176 V with reduced service life time)
Push-in terminals: 0.2–1.5 mm²

Safety features

Electronic short-circuit protection
Overload and overtemperature protection
Protection against "no load" operation
Degree of protection: IP20
Protection class I
The LEDs are thermally protected by the driver's NTC interface, which ensures the current will be reduced when a critical temperature is reached.
Product guarantee: 5 years

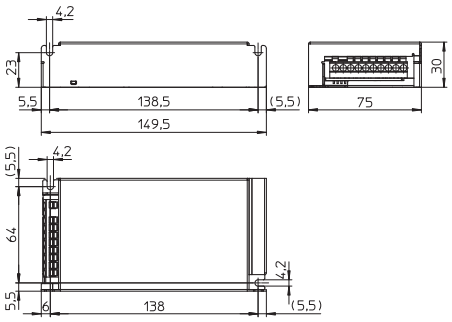
NTC at LED module 10 k (Type Nurata NCP18XH103J03RB)	
R (k)	Nominal current (%)
10	100
< 1.49	60
< 1.13	0 (off)

Expected service life time

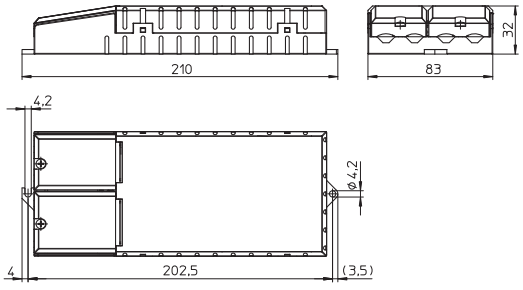
at operation temperatures at t_c point

Operation current	Ref. No. 186297		186301		186298		186302	
700 mA	70 °C	60 °C	–	–	80 °C	70 °C	–	–
1050 mA	–	–	75 °C	65 °C	–	–	90 °C	80 °C
hrs.	50,000	100,000	50,000	100,000	50,000	100,000	50,000	100,000

M36



K38 with cord grip



Max. output W	Type	Ref. No.	Mains voltage 0 Hz, 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	12 V interface max. 2 W	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M36 – Dimensions: 149.5x75x30 mm												
112	ECXe 700.057	**186297**	198–264	595–445	700 ±5%	85–160	< 450	> 91	yes	–25 to 50	70	288
			220–240	550–510								
126	ECXe 1050.059	**186301**	198–264	660–495	1050 ±5%	85–120	< 450	> 91	yes	–25 to 50	75	288
			220–240	630–590								
K38 with cord grip – Dimensions: 210x83x32 mm												
112	ECXe 700.057	**186298**	198–264	595–445	700 ±5%	85–160	< 450	> 91	yes	–25 to 50	80	335
			220–240	550–510								
126	ECXe 1050.059	**186302**	198–264	660–495	1050 ±5%	85–120	< 450	> 91	yes	–25 to 50	90	335
			220–240	630–590								

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EasyLine LED Drivers

700–2800 mA / max. 50–201.6 W
These electronic LED constant current drivers are especially designed for use in industrial hall lighting systems as well as for use in street lighting systems.

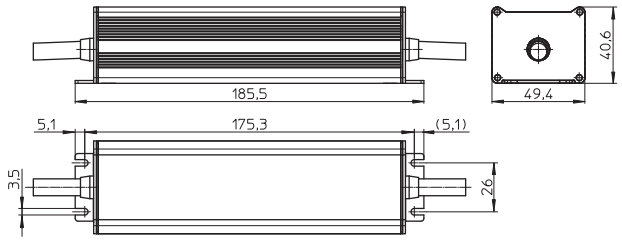
Electrical characteristics
Secondary side switching of LED modules is not allowed.
Power factor at full load: > 0.9

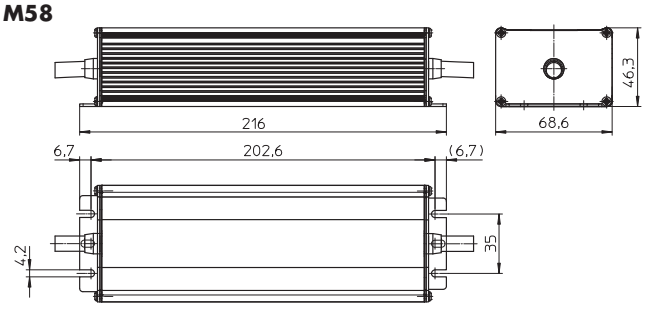
Connection details
Mains voltage: 220–240 V ±10%
Mains frequency: 50–60 Hz
Pre-assembled connection leads:
primary: 3x2.08 mm², length: 320 mm
secondary: 2x2.08 mm², length: 320 mm

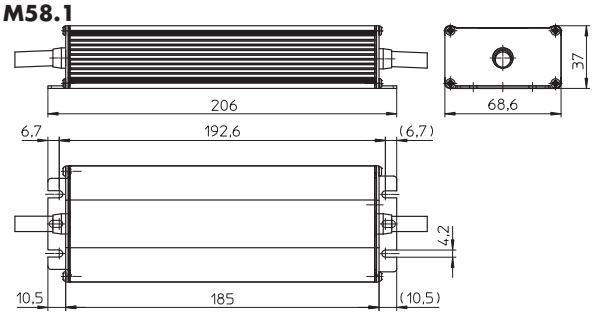
Safety features
Protection against transient main peaks up to 1.5 kV (between L and N)
(186617: up to 4 kV between L and N)
Electronic short-circuit protection
Overload protection
Protection against "no load" operation
Degree of protection: IP67 (186617: IP65)
Protection class I
Product guarantee: 3 years

Expected service life time
at operation temperatures at t_c point

Operation current	Ref. No. all types	
all	75 °C	65 °C
hrs.	30,000	50,000

M56


M58


M58.1


Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V	Mains current mA	Current output DC mA	Voltage output DC V	Max. voltage without load DC V	Efficiency at full load % (230 V)	Ambient temperature t_a °C	Casing temperature t_c °C	Weight g
M56 – Dimensions: 185.5x49.4x40.6 mm											
50	ECXe 700.156	**186452**	220–240	255–235	700 ±5%	35–72	75	> 88	–30 to 50	75	520
75	ECXe 1050.157	**186453**	220–240	380–350	1050 ±5%	35–72	75	> 88	–30 to 50	75	520
M58 – Dimensions: 216x68.6x46.3 mm											
100	ECXe 1400.158	**186454**	220–240	510–470	1400 ±5%	30–72	75	> 90	–30 to 50	75	600
122.4	ECXe 1700.159	**186455**	220–240	625–580	1700 ±5%	30–72	75	> 90	–30 to 50	75	600
M58.1 – Dimensions: 206x68.6x37 mm											
121.8	ECXe 1050.235	**186617**	220–240	630–570	1050 ±5 %	60–116	120	> 85	–40 to 50	75	840
151.2	ECXe 2100.160	**186456**	220–240	750–690	2100 ±5%	45–72	85	> 90	–30 to 50	75	840
172.8	ECXe 2400.167	**186510**	220–240	910–850	2400 ±5%	45–72	85	> 85	–30 to 50	75	840
201.6	ECXe 2800.168	**186477**	220–240	1040–960	2800 ±5%	45–72	85	> 85	–30 to 50	75	840

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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iProgrammer

For programming LED drivers
The iProgrammer is designed to let you configure LED drivers using the 3C function.

Using DALI commands, the iProgrammer enables various functions to be configured on all VS LED drivers that feature the "3C" symbol.
As an example, not only can the current be set to a precise level, but programming functions for the street lighting zone can also be transferred.
Please refer to the manual at product page under www.vossloh-schwabe.com for detailed configuration procedures.

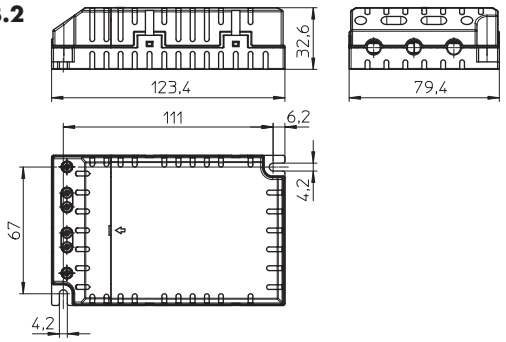
Technical notes
Configuration interface: DALI
Ambient temperature t_a: 5 to 50 °C
Push-in terminals: 0.2–1.5 mm²
Degree of protection: IP20

Connections
Mains connection: 220–240 V AC/50–60 Hz
Max. power consumption: 5 W
USB 2.0

Software download
See product page under www.vossloh-schwabe.com

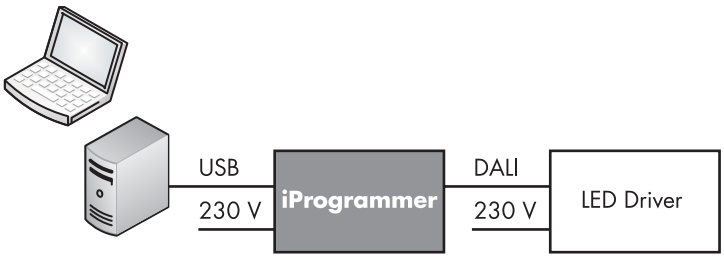
Functions
Configuring "3C" LED drivers

K3.2



3C convenient clever Communication

Connection



Type	Ref. No.	Connection to PC/Laptop	Functions	Dimensions mm (LxWxH)	Weight g
iProgrammer	**186428**	USB 2.0	Configuring "3C" LED drivers	123.4x79.4x32.6	135

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