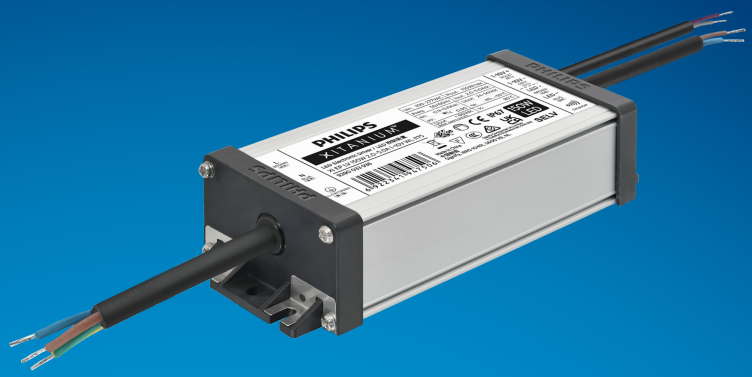
PHILIPS

Xitanium

LED driver



Datasheet

Xitanium Outdoor Essential Programmable Low Voltage LED Drivers

Xi EP LV 150W 2.0-5.0A 1-10V WL I175

9290 033 93680

Xitanium Essential Programmable (EP) LED drivers are designed for maximum reliability and flexibility, making it a preferred choice for different Outdoor applications. The key feature AOC (Adjustable Output Current) can be programmed with the new e-set tool, a simple and fast way to configure the driver without the need to power on the driver and without the need for any software configuration.

Xitanium EP Low Voltage (LV) drivers are specifically designed for low voltage outdoor applications. Having high surge immunity, these durable, independently housed drivers deliver consistent, high performance to luminaires. It is an ideal solution for OEMs who need reliable, adjustable output current in a rugged independent form factor.

Benefits

- Low voltage/high current output fits low voltage outdoor applications
- AOC (Adjustable Output Current) gives full flexibility to output different currents to spec-in different projects
- Compact housing saves luminaire space
- Easy adjustment of output current/voltage saves time and labor cost
- Robust design offers peace of mind and saves maintenance cost
- IP rated housing allows use in a non-fully sealed gearbox

Features

- 100-277V input voltage
- Low voltage/high current output
- Adjustable Output Current (AOC)
- Compact housing dimensions
- Digital way to adjust output current called e-set tool
- Robust specifications for moisture, vibration, and temperature protection
- IP67
- 1-10V dimming capability

Application

- Road and street lighting
- Area and flood lighting
- Tunnel lighting
- High-bay lighting

January 2022

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	200…254	V_{ac}	Performance range
Rated input voltage	230	V_{ac}	
Rated input frequency range	47…63	Hz	Performance range
Rated input current	0.71	A	@ rated output power @ rated input voltage
Max. input current	0.9	A	@ rated output power @ minimum performance input voltage
Rated input power	163	W	@ rated output power @ rated input voltage
Power factor	0.95		@ rated output power @ rated input voltage
Total harmonic distortion	10	%	@ rated output power @ rated input voltage
Efficiency	91	%	@ rated output power @ rated input voltage @max. Uout
Input voltage AC range	85…305	V_{ac}	Operational range
Input frequency AC range	45…66	Hz	Operational range
Isolation input to output	Double		

Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	24…50	V_{dc}	
Output voltage max.	60	V	Maximum output voltage (rms)
Output current	2…5	A	
Output current min programmable	2000	mA	
Output current min dimming	300	mA	
Output current tolerance ±	5	%	At max. output currentt, Ta=25°C
Output current ripple LF	≤ 5	%	Ripple = peak / average, < 1kHz
Output current ripple HF	≤ 5	%	
Output P_{st}^{LM}	≤ 0.1		In entire operating window
Output SVM	≤ 0.1		In entire operating window
Output power	7.2…150	W	

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	1-10V		
Dimming range	10…100	%	Default range
Isolation controls input to output	Basic		acc. IEC61347-1

Wiring and Connections

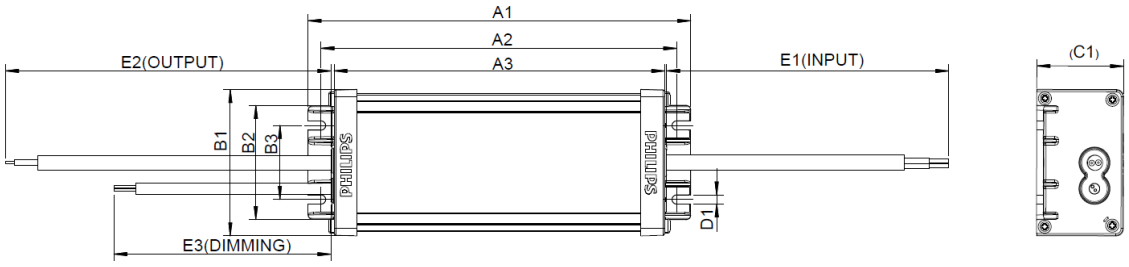
Specification item	Value	Unit	Type
Input wire cross-section	1 / 17	mm^2 / AWG	3x 1.0mm2 stranded wires, waterproof cable
Output wire cross-section	1 / 17	mm^2 / AWG	2x 1.0mm2 stranded wires, waterproof cable
Control wire cross-section	0.33 / 22	mm^2 / AWG	2-wire cable, AWG22
Maximum cable length	2	m	Total length of wiring including LED module, one way

Insulation

Insulation per IEC61347-1	Input	Output	1-10V	Ground
Input		Double	Reinforced	Basic
Output	Double		Basic	Basic
1-10V	Reinforced	Basic		Basic
Ground	Basic	Basic	Basic	

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	175	mm	± 2
Mounting hole distance (A2)	164	mm	± 2
Length (A3)	152.5	mm	± 2
Width (B1)	67	mm	± 1
Width (B2)	52.5	mm	± 1
Width (B3)	34	mm	± 1
Height (C1)	40	mm	± 1
Mounting hole diameter (D1)	4	mm	± 0.3
Input cable length (E1)	450	mm	± 30
Output cable length (E2)	450	mm	± 30
Control cable length (E3)	300	mm	± 30
Weight	730	gram	



Logistical data

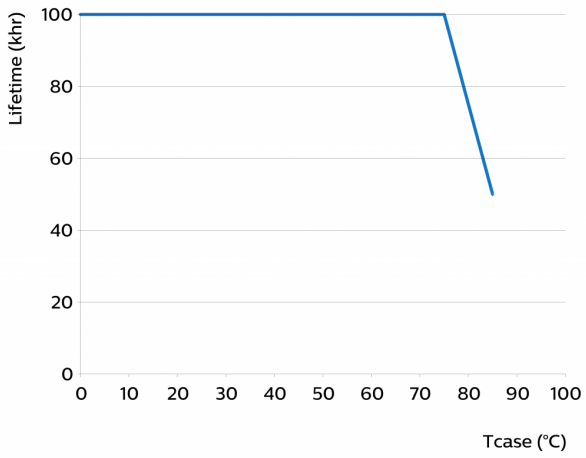
Specification item	Value
Product name	Xi EP LV 150W 2.0-5.0A 1-10V WL I175
Logistic code 12NC	9290 033 93680
Pieces per box	12

Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40…+55	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded
Tcase-max	85	°C	Maximum temperature measured at T_{case}-point
Tcase-life	75	°C	Measured at T_{case}-point
Relative humidity	10…90	%	Non-condensing

Lifetime

Specification item	Value	Unit	Condition
Driver lifetime	50,000	hours	Measured temperature at Tcase-point is Tcase-max. Maximum failures = 10%



Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40…+80	°C	
Relative humidity	5…95	%	Non-condensing

Programmable features

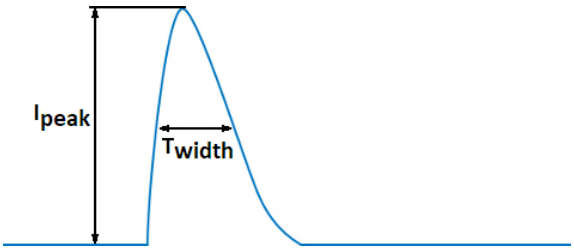
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	NFC	3000 mA	

Features

Specification item	Value		Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I		per IEC60598
Overtemperature protection	Yes		Automatic recovering, refer to thermal guard curve

Inrush current

Specification item	Value	Unit	Condition
Inrush current	71	A	Input voltage 230V
Inrush peak width	212	µs	Input voltage 230 V, measured at 50% height
Drivers / MCB 16A type B	≤ 5	pcs	Indicative value at 230V



Please refer to the driver design in guide if you use other MCB-types.

Driver touch current / protective conductor current

Specification item	Value	Unit	Condition
Typical Protective Conductor Current (ins. Class I)	0.7	mA rms	Acc. IEC60598-1. LED module contribution not included

Surge immunity

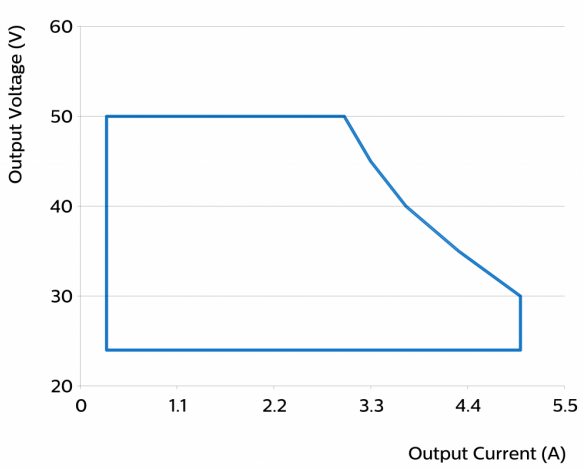
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	6	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	6	kV	Acc.IEC61000-4-5. 12 Ohm 1.2/50us,8/20us

Application Info

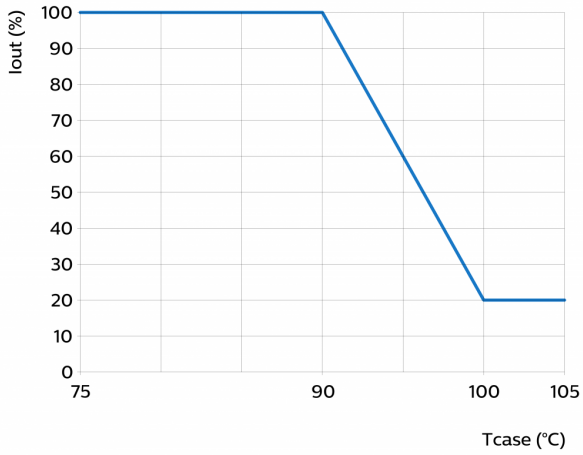
Specification item	Value
Approval marks and Certifications	CB / CCC / CE / ENEC / RCM / SELV / UKCA
Ingress Protection classification (IP)	67
Application	Outdoor
Mounting Type	Independent

Graphs

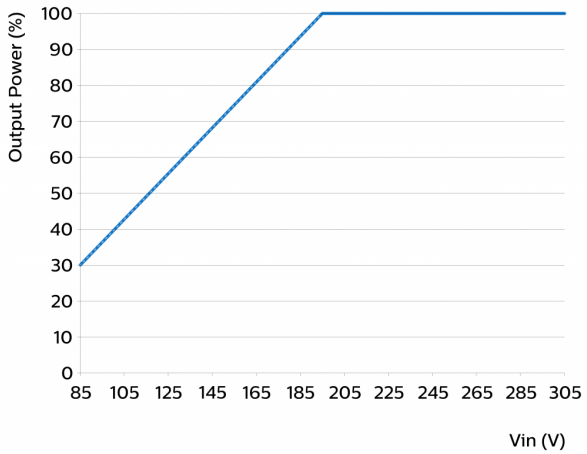
Operating window



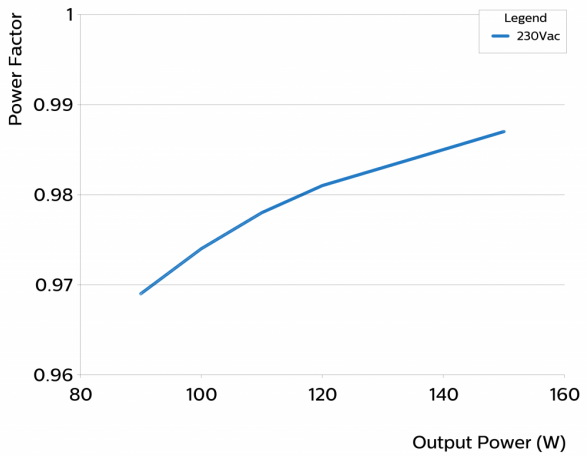
Thermal Guard



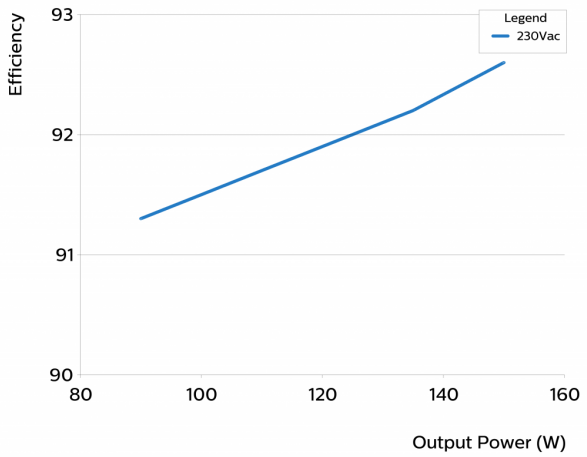
Mains Guard



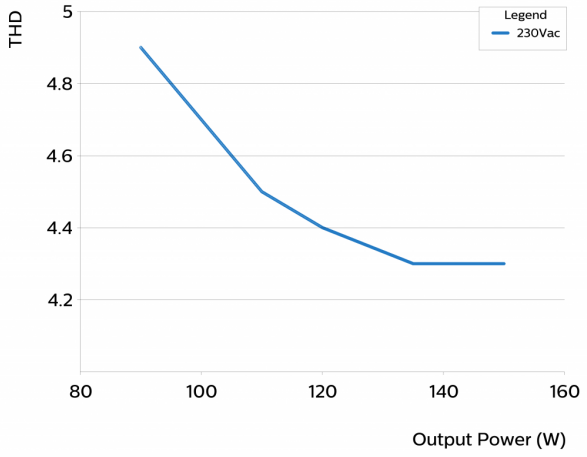
Power factor versus output power



Efficiency versus output power



THD versus output power



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