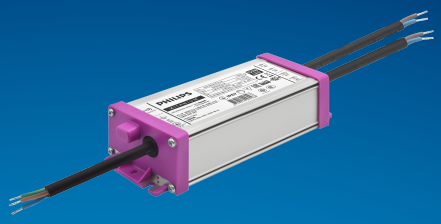
PHILIPS

Xitanium

LED driver



Datasheet

Xitanium LITE Prog LED drivers Independent

Xi LP 100W 0.5-1.5A S1 230V I155

9290 028 23180

Philips Xitanium Lite Programmable LED drivers are value engineered to deliver a carefully selected feature set and high-end performance, making it a preferred choice for many outdoor applications. The portfolio offers high flexibility with a customizable operating window, enabling differentiation in LED lighting designs via system tuning and being prepared for LED efficacy upgrades.

In this product family Philips introduces new drivers in a stretched form factor with a balanced feature set, which offer high value for both OEM customers and end-users. The products can replace the existing programmable outdoor LED drivers and will bring significant improvement in programming, assembly into a luminaire and electrical performance. One of the key features is SimpleSet®, an easy and fast way to configure the driver without the need to power the driver.

Benefits

- Ultimate robustness, offering peace of mind and lower maintenance costs
- Long lifetime and high survival rate
- Energy savings through high efficiency
- Balanced configurable feature set covering the most common applications
- Superior thermal management
- Consistent waterproof performance through the lifecycle
- Easy to design-in, configure and install for Class I applications

Features

- SimpleSet®, wireless configuration interface
- High surge protection
- Long lifetime and robust protection against moisture, vibration and temperature
- Configurable operating windows(AOC)
- External control interface (1-10V) available
- Digital Configuration Interface (DCI) via MultiOne Interface
- Autonomous or Fixed time based (FTBD) dimming via integrated 5-step DynaDimmer
- Programmable Constant Light Output (CLO)
- Integrated Driver Temperature protection

Application

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

October 2020

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	202…254	V_{ac}	Performance range
Rated input voltage	230	V_{ac}	
Rated input frequency range	47…63	Hz	Performance range
Rated input current	0.48	A	@ rated output power @ rated input voltage
Max. input current	0.56	A	@ rated output power @ minimum performance input voltage
Rated input power	112	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	≥ 90	%	@ rated output power @ rated input voltage
Input voltage AC range	85…305	V_{ac}	Safety Operational range
Input frequency AC range	45…66	Hz	Operational range
Isolation input to output	Basic		

Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	33…95	V_{dc}	
Output voltage max.	150	V	Maximum output voltage (rms)
Output current	0.5…1.5	A	
Output current min programmable	500	mA	
Output current min dimming	105	mA	
Output current tolerance ±	5	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average@ ≤1KHz
Output current ripple HF	≤ 15	%	
Output power	3.3…100	W	

Electrical data controls input

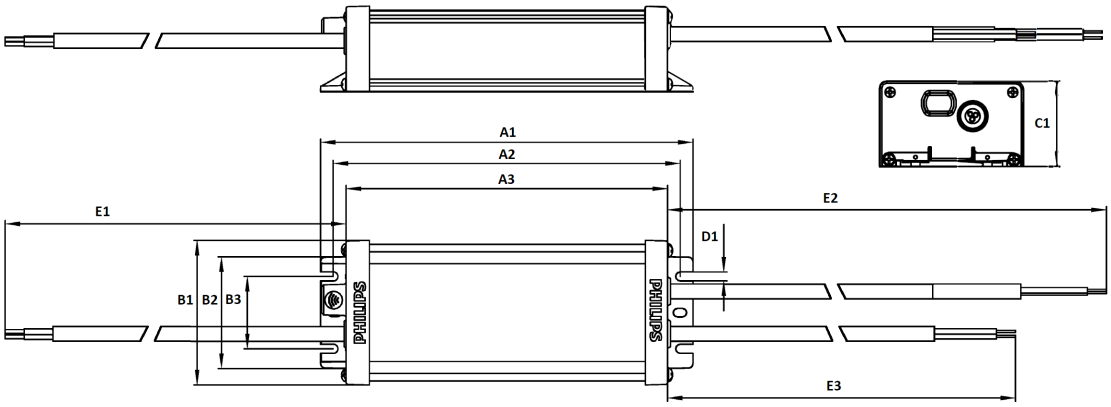
Specification item	Value	Unit	Condition
Control method			Default: 1-10V. Optional: reversed 1-10V, reversed 0-5V
Dimming range	10…100	%	Default range
Isolation controls input to output	Basic		acc. IEC61347-1

Wiring and Connections

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

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	155	mm	
Mounting hole distance (A2)	143	mm	
Width (B1)	68	mm	
Width (B2)	52.4	mm	
Height (C1)	40	mm	
Mounting hole diameter (D1)	4.2	mm	
Input cable length (E1)	450	mm	
Output cable length (E2)	450	mm	
Control cable length (E3)	250	mm	
Weight	640	gram	



Date sheet	
Item	Dimensions
A1	155±1
A2	143±1
A3	131±1
B1	68±0.5
B2	52.4±0.5
B3	34±0.3
D1	4.2±0.2
C1	40±1
E1	450±30
E2	450±30
E3	250±30

Logistical data

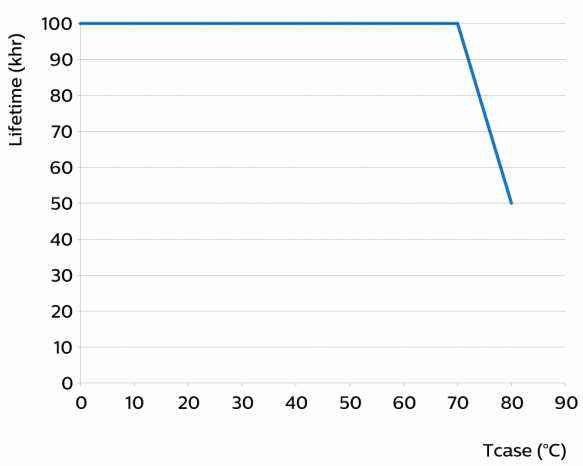
Specification item	Value
Product name	Xi LP 100W 0.5-1.5A S1 230V I155
EOC	871951429560500
Logistic code 12NC	9290 028 23180
EAN1 (GTIN)	8719514295605
EAN3	8719514295612
Pieces per box	12

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	80	°C	Maximum temperature measured at T_{case}-point
Tcase-life	70	°C	Measured at T_{case}-point
Maximum housing temperature	130	°C	In case of a failure, inherent by design
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

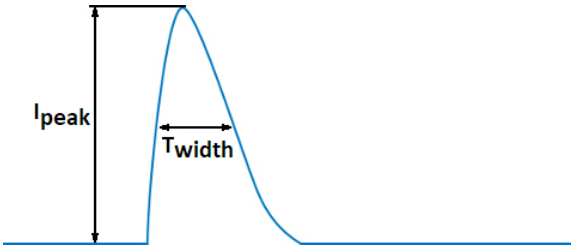
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)		1050 mA	
Constant Light Output (CLO)	Yes		
Dynadimmer	Yes		

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
Diagnostics	Yes		

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	44	A	Input voltage 230V
Inrush current T_{width}	270	µs	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 9	pcs	Indicative value



MCB	Rating	Relative number of LED drivers
B	4A	25%
B	6A	40%
B	10A	63%
B	13A	81%
B	16A	100% (stated in datasheet)
B	20A	125%
B	25A	156%
B	32A	200%
B	40A	250%
C	4A	42%
C	6A	63%
C	10A	104%
C	13A	135%
C	16A	170%
C	20A	208%
C	25A	260%
C	32A	340%
C	40A	415%

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

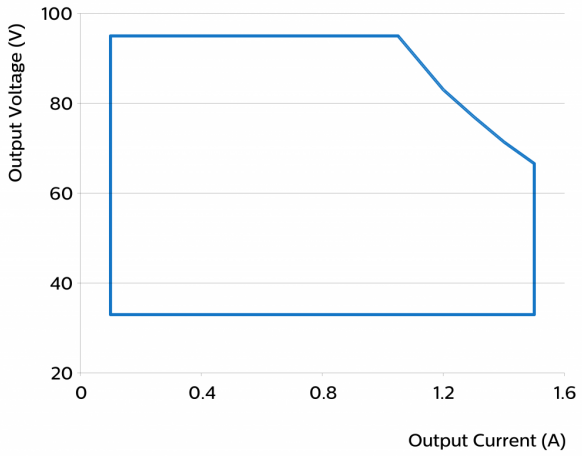
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	6	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	10	kV	Acc. IEC61000-4-5. 12 Ohm 1.2/50us,8/20us

Application Info

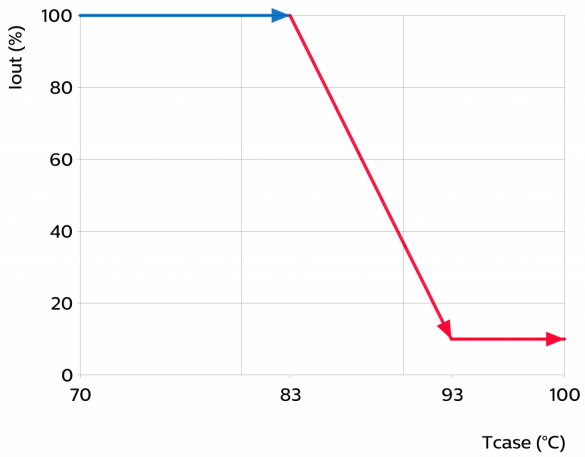
Specification item	Value
Approval marks	CB / CCC / CE / ENEC
Ingress Protection classification (IP)	67

Graphs

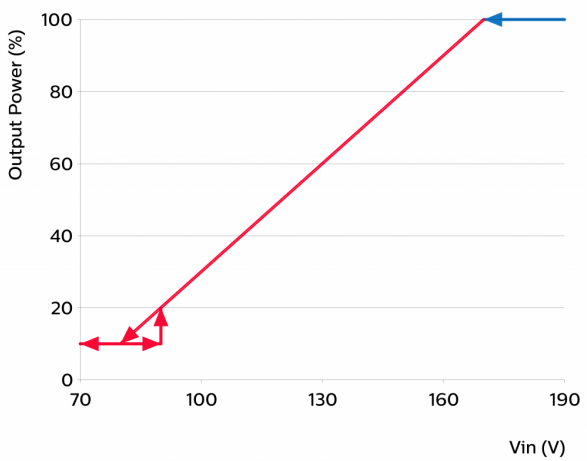
Operating window



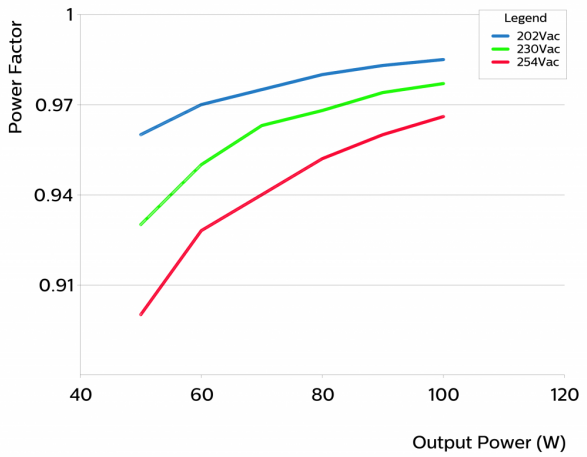
Thermal Guard



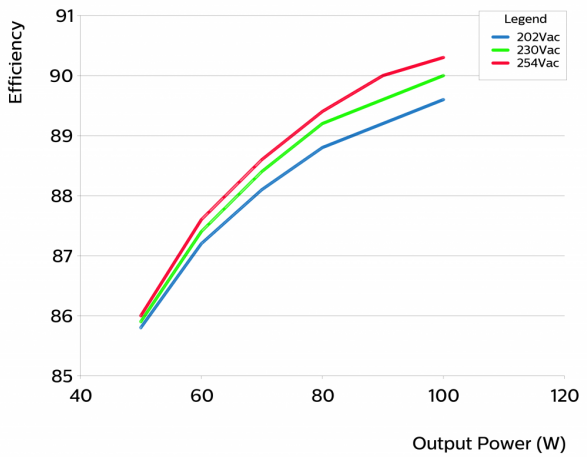
Mains Guard



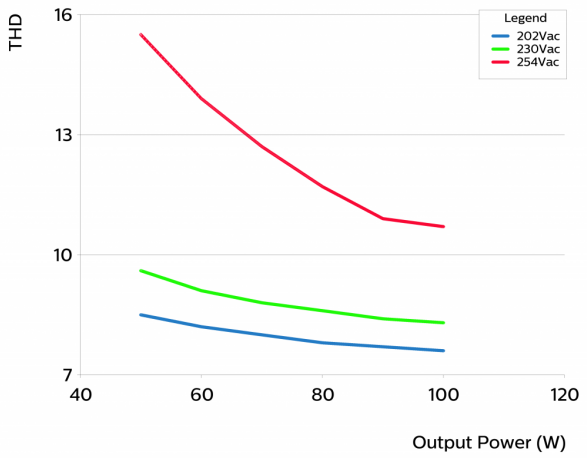
Power factor versus output power



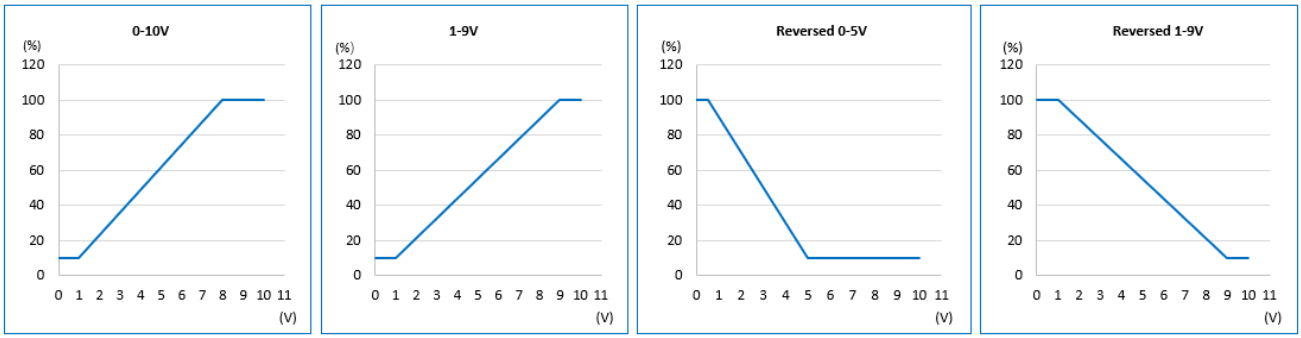
Efficiency versus output power



THD versus output power



I_{out} as function of 1-10V interface



Note:
During reversed dimming mode, when the DIM+/DIM- is open, the driver will be at maximum output current.

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