

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium LITE Prog LED drivers Independent

Xi LP 320W 0.7-2.1A S1 WL AUX I230

9290 028 82780

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

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	1.52	A	@ rated output power @ rated input voltage
Max. input current	1.8	A	@ rated output power @ minimum performance input voltage
Rated input power	350	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	92.5	%	@ rated output power @ rated input voltage @ max. U _{out}
Input voltage AC range	85...305	V _{ac}	Operational range
Input frequency AC range	45...66	Hz	Operational range
Standby Power	0.39	W	
Isolation input to output	Basic		

Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	114...228	V _{dc}	
Output voltage max.	300	V	Maximum voltage at open load
Output current	0.7...2.1	A	
Output current min programmable	700	mA	
Output current min dimming	140	mA	
Output current tolerance ±	5	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average @ ≤1KHz
Output current ripple HF	≤ 4	%	Ripple = peak / average @ >1KHz
Output P _{st} ^{LM}	≤ 0.14		In entire operating window
Output SVM	≤ 0.07		In entire operating window
Output power	16...320	W	

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	1-10V, Dynadimmer		Output current amplitude dimming
Dimming range	10...100	%	See 1-10V dimming graph. Dim to off.
Isolation controls input to output	Double		acc. IEC61347-1

Wiring and Connections

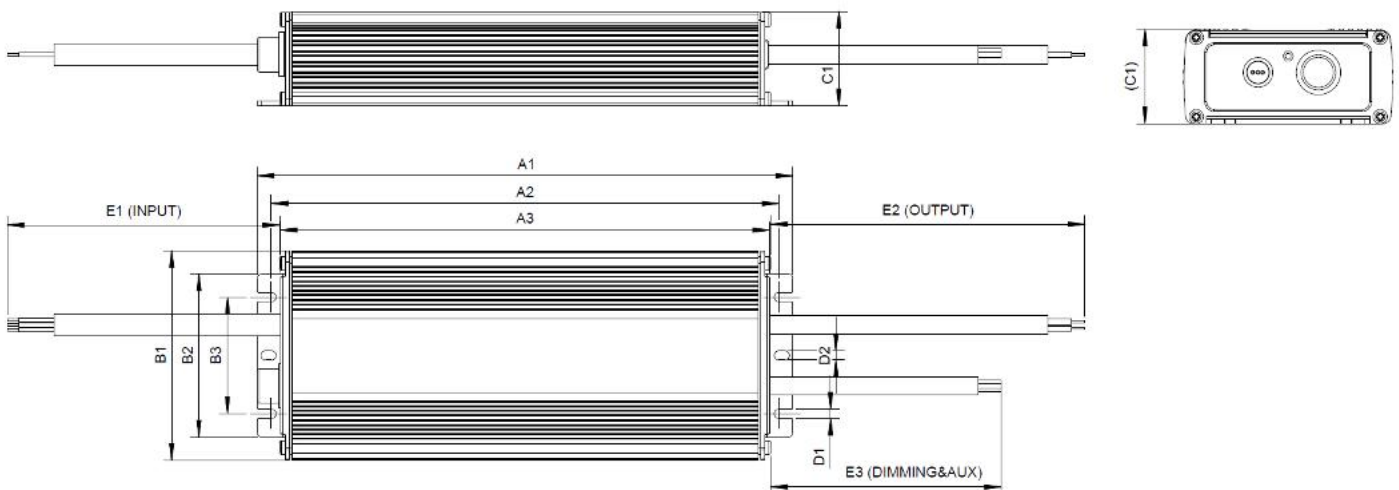
Specification item	Value	Unit	Type
Input wire cross-section	1	mm ²	3x 1.0mm ² stranded wires, waterproof cable
Output wire cross-section	1	mm ²	2x 1.0mm ² stranded wires, waterproof cable
Control wire cross-section	0.33	mm ²	3x 0.33mm ² stranded wires, waterproof cable
Maximum cable length	2	m	Total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

Insulation

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

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	230	mm	± 2
Mounting hole distance (A2)	218	mm	± 2
Length (A3)	211	mm	± 2
Width (B1)	90	mm	± 1
Width (B2)	70	mm	± 0.3
Width (B3)	50	mm	± 0.3
Height (C1)	40	mm	± 1
Mounting hole diameter (D1)	4	mm	± 0.3
Mounting hole diameter (D2)	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	1450	gram	
Housing color	black		



Logistical data

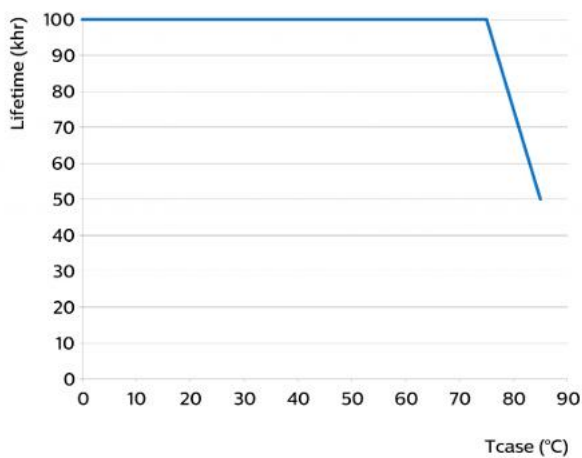
Specification item	Value
Product name	Xi LP 320W 0.7-2.1A S1 WL AUX I230
EOC	692234194422200
Logistic code 12NC	9290 028 82780
EAN1 (GTIN)	6922341944222
EAN3 (box)	06922341944239
Pieces per box	6

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
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

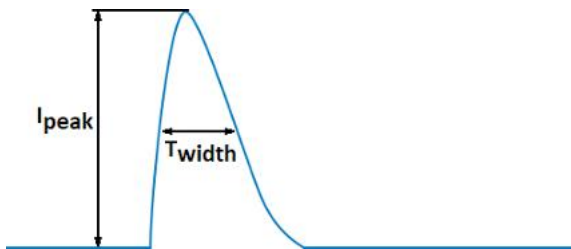
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	SimpleSet	1400 mA	
Adjustable Light Output (ALO)	Yes		
Constant Light Output (CLO)	Yes		
1-10V	Yes		Default: 1-10V. Optional: 0-10V
Dynadimmer	Yes	—	

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	
+12V Auxiliary Power Supply	Yes	Max current: 200mA

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	58	A	Input voltage 230V
Inrush current T_{width}	444	μ s	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 3	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

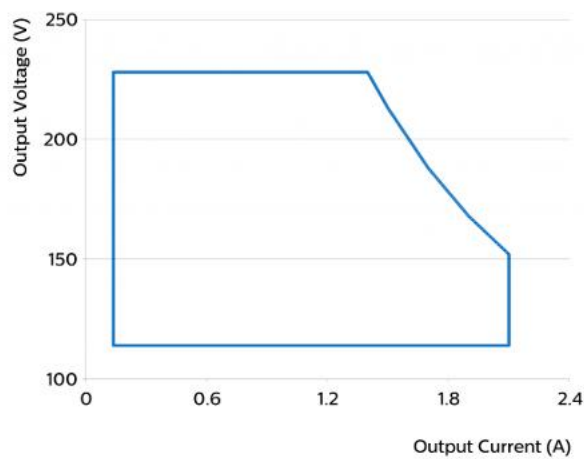
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	6	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	10	kV	Acc. IEC61000-4-5. 12 Ohm 1.2/50us,8/20us

Application Info

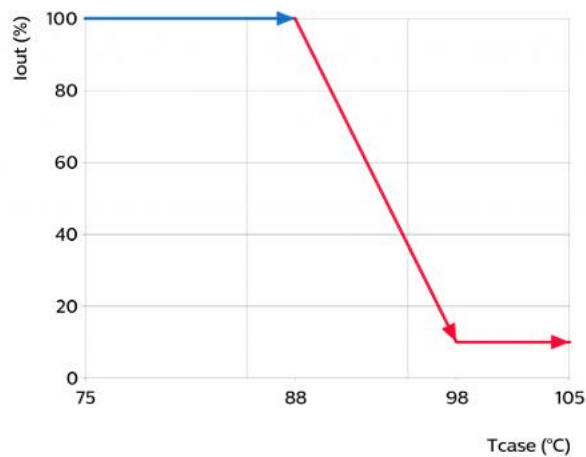
Specification item	Value
Approval marks	CB / CCC / CE / ENEC / RCM / UKCA
Ingress Protection classification (IP)	67
Application	Outdoor
Mounting Type	Independent

Graphs

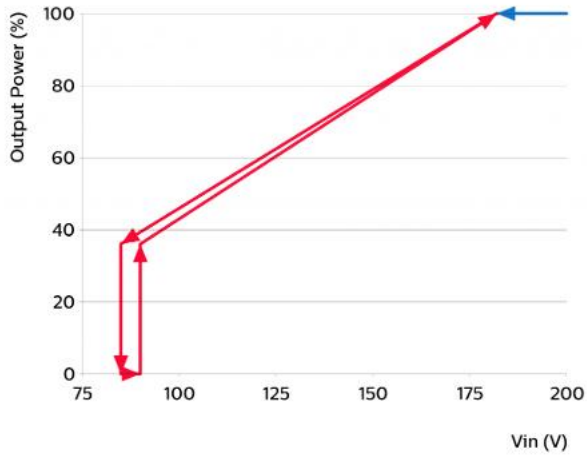
Operating window



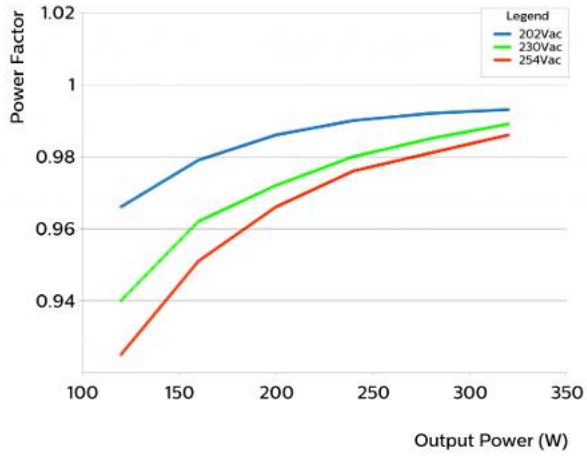
Thermal Guard



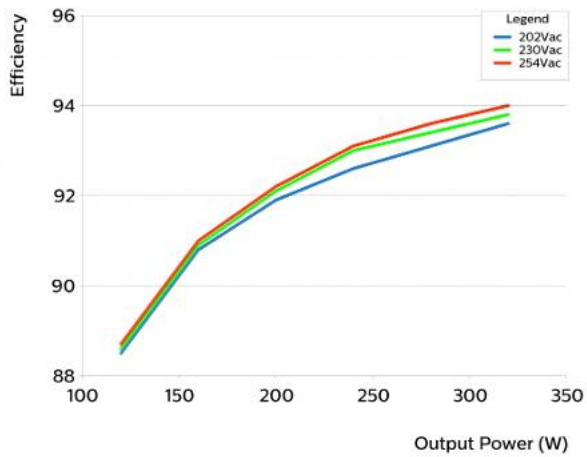
Mains Guard



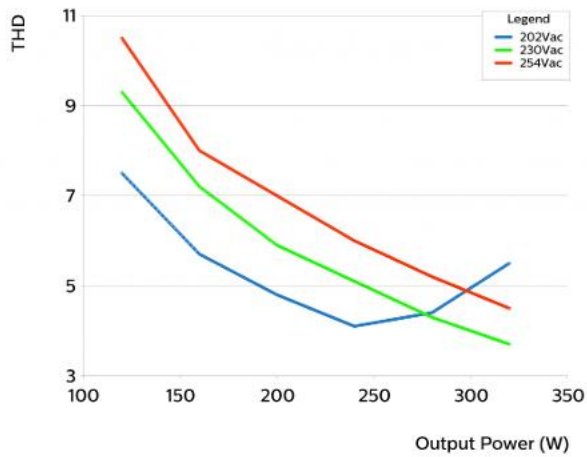
Power factor versus output power



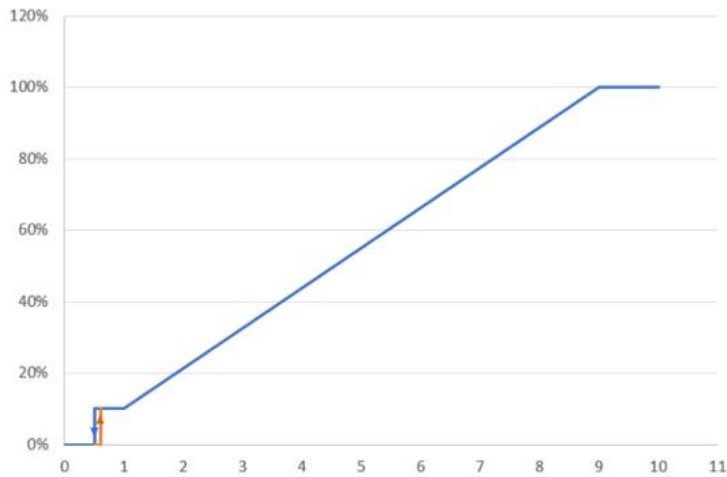
Efficiency versus output power



THD versus output power



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



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