

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium Xtreme LED Drivers Dimmable (1-10V)

Xitanium 150W 0.70A 1-10V 230V S240 sXt

9290 014 05506

LED-based light sources are an excellent solution for outdoor environments. They are long-lasting and require low maintenance. However, to get the best out of the LEDs, these light sources require highly reliable and efficient LED Drivers. Philips Xitanium Dimmable (1-10V) LED Xtreme Drivers for Outdoor and Industry applications are specifically designed to deliver reliable performance and protection while meeting the strict performance, approbation and application requirements.

Benefits

- Reliable
- Robust design
- Long lifetime
- Superior surge protection
- 5 years warranty
- Waterproof performance
- Proven robustness & reliability secure the lowest luminaire maintenance over time
- Extreme compact size, suitable for a wide range of luminaires
- Easy to design-in based on good thermal management and extra EMI margin

Features

- Proven robust and reliable electronic driver design
- Achieving highest efficiencies based on advanced technology
- Long lifetime
- Solid surge protection
- DC operation for industry applications (150W)
- Suitable for Insulation Class I and Class II luminaires
- CE, ENEC, and CB certified

Application

- Road and Street Lighting
- Tunnel Lighting
- Area and Flood Lighting
- High-bay lighting

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	220...240	V _{ac}	Performance range
Rated input voltage	230	V _{ac}	
Rated input frequency range	50...60	Hz	Performance range
Rated input current	0.72	A	@ rated output power @ rated input voltage
Max. input current	0.82	A	@ rated output power @ minimum performance input voltage
Rated input power	165	W	@ rated output power @ rated input voltage
Power factor	0.99		@ rated output power @ rated input voltage
Total harmonic distortion	7	%	@ rated output power @ rated input voltage
Efficiency	92	%	@ rated output power @ rated input voltage
Rated input voltage DC range	186...250	V _{dc}	Performance range
Input voltage AC range	198...264	V _{ac}	Operational range
Input frequency AC range	45...66	Hz	Operational range
Input voltage DC range	168...275	V _{dc}	Operational range
Isolation input to output	Double		

Electrical output data

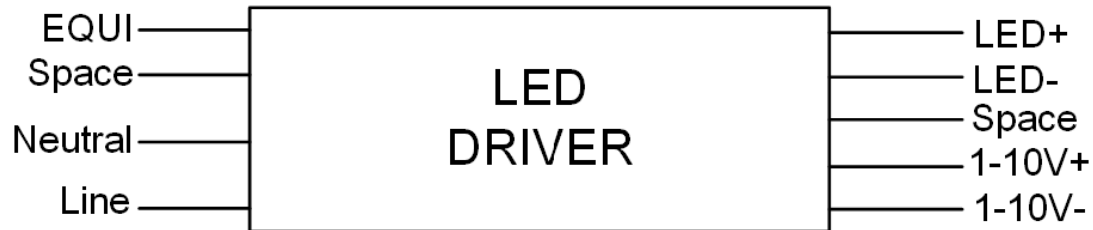
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	100...214	V _{dc}	
Output voltage max.	320	V	Maximum output voltage (rms)
Output current	0.7	A	
Output current min dimming	70	mA	
Output current tolerance ±	5	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average, < 3kHz
Output current ripple HF	≤ 15	%	
Output power	7...150	W	

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	1-10V		Amplitude dimming
Dimming range	10...100	%	1-8V dimming curve
Isolation controls input to output	Double		acc. IEC61347-1

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.5...2.5 / 20...14	mm ² / AWG	WAGO804, solid / stranded wire
Input wire strip length	10...11	mm	
Output wire cross-section	0.5...1.5 / 20...16	mm ² / AWG	WAGO250 (pitch 3.5 mm), solid / stranded wire
Output wire strip length	8.5...9.5	mm	
Maximum cable length	1.5	m	Total length of wiring including LED module, one way

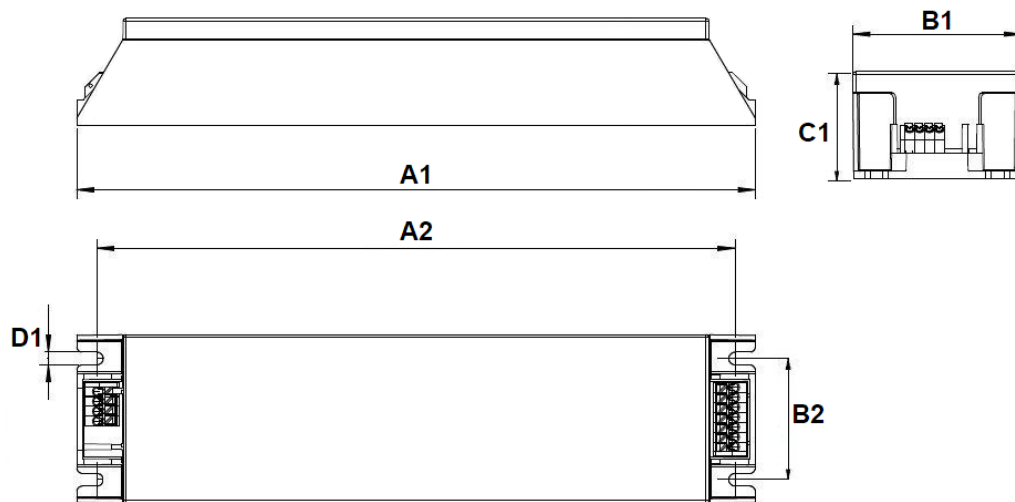


Insulation

Insulation per IEC61347-1	Mains	LED	1-10V	EQUI
Mains		Double	Double	Double
LED	Double		Double	Basic
1-10V	Double	Double		Basic
EQUI	Double	Basic	Basic	

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	240	mm	
Mounting hole distance (A2)	226	mm	
Width (B1)	59.7	mm	
Width (B2)	42.9	mm	
Height (C1)	37.8	mm	
Mounting hole diameter (D1)	4.5	mm	
Weight	710	gram	



Logistical data

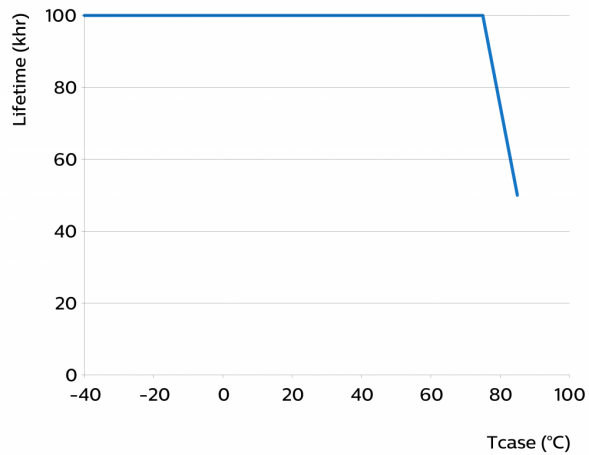
Specification item	Value
Product name	Xitanium 150W 0.70A 1-10V 230V S240 sXt
EOC	871869664623600
Logistic code 12NC	9290 014 05506
EAN1 (GTIN)	8718696646236
EAN3 (box)	8718696646243
Pieces per box	10

Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+55	°C	Higher ambient temperature allowed as long as T _{case} -max is not exceeded
Starting Ambient temperature	-40...+55	°C	
T _{case} -max	85	°C	Maximum temperature measured at T _{case} -point
T _{case} -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	100,000	hours	Measured temperature at Tcase-point is Tcase-life. 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

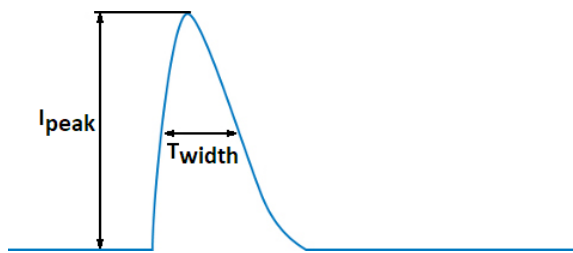
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	No	700 mA	

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 and II		per IEC60598
Overtemperature protection	Yes		Automatic recovering

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	34	A	Input voltage 230V
Inrush current T_{width}	475	μs	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 8	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 Touch Current (ins. Class II)	0.45	mA peak	Acc. IEC61347-1. LED module contribution not included

Surge immunity

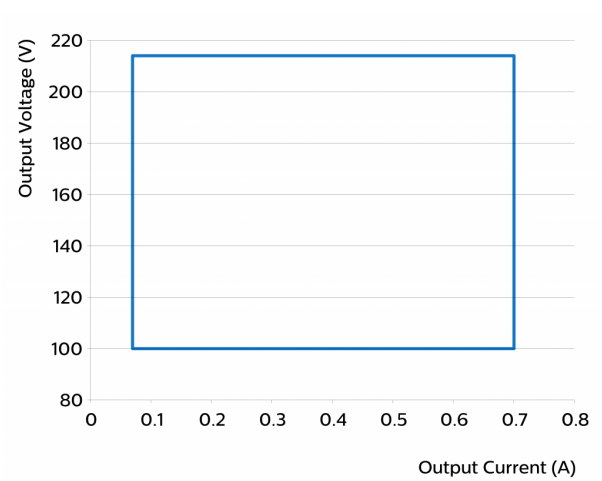
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	6	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	8	kV	Acc. IEC61000-4-5. 12 Ohm 1.2/50us, 8/20us
Control surge immunity (diff. mode)	0.5	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge immunity (comm. mode)	2.5	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Application Info

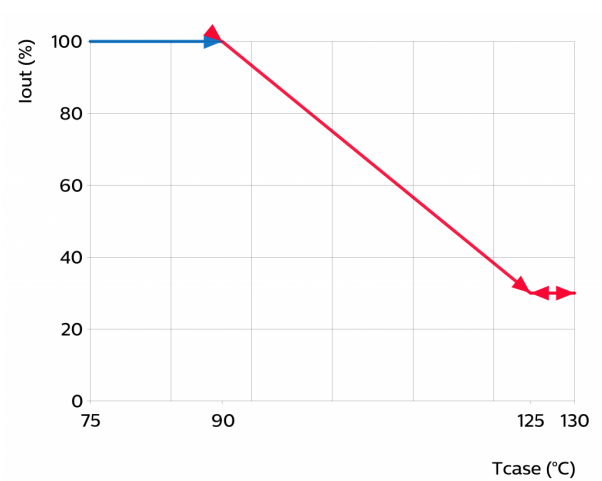
Specification item	Value
Approval marks	130 / CB / CE / Double-insulated Built-In / EAC / EL / ENEC / UA
Ingress Protection classification (IP)	20
Application	Outdoor
Mounting Type	Built-in

Graphs

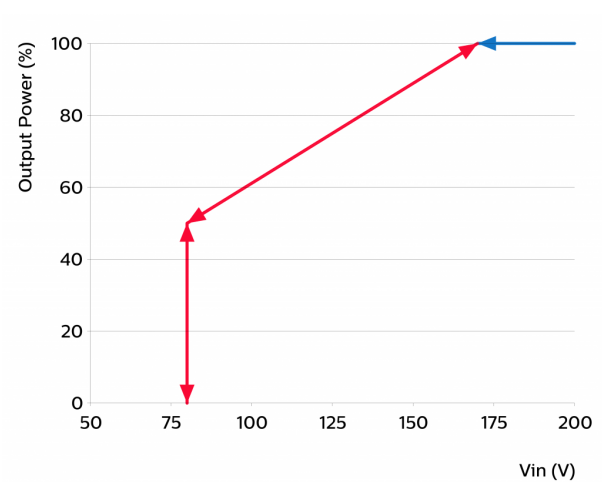
Operating window



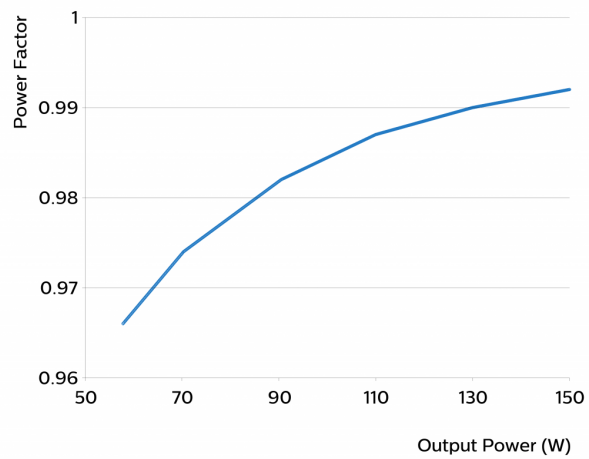
Thermal Guard



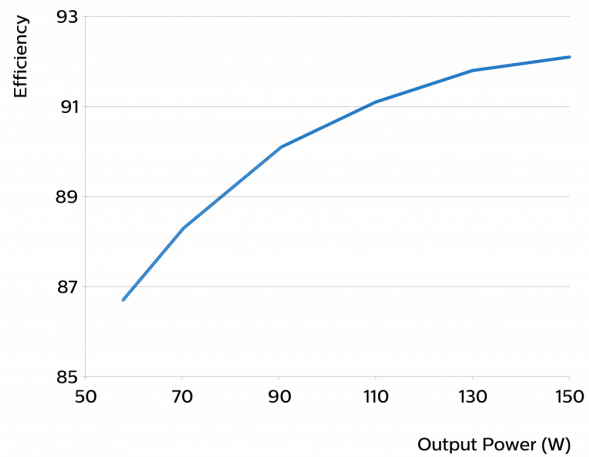
Mains Guard



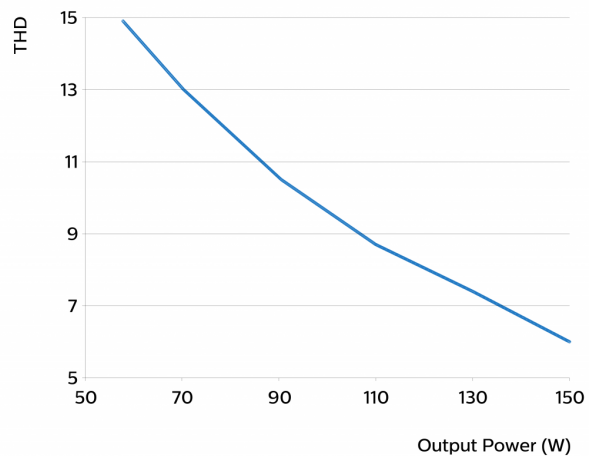
Power factor versus output power



Efficiency versus output power



THD versus output power





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Date of release: March 19, 2021 v2

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