

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium Outdoor LED Drivers Independent 1-10V

Xitanium Dim 150W 1.05A 1-10V TWE I220

Xitanium LED-based light sources are an excellent solution for outdoor environment. 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. The new Philips Xitanium Fixed Output and Dimmable (1-10V) LED Outdoor Drivers are specifically designed to deliver reliable performance and protection while meeting the strict performance, approbation and application requirements.

Benefits

- Robust design; capable of withstanding harsh outdoor conditions
- Long lifetime and high survival rate
- Superior thermal management suitable for outdoor application
- Backed by 5 year warranty from a company you can trust
- Component integration in advanced IC enables cost effective design
- Proven robustness & reliability secure the lowest luminaire maintenance over time

Features

- Proven robustness and reliable electronics driver design
- 1-10V dimming interface for flexible dimming solutions
- Achieving highest efficiencies based on advanced technology
- Long lifetime @ high temperatures
- Extreme compact size, fitting with varied and critical luminaires

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	110...277	V _{ac}	
Rated input voltage	230	V _{ac}	
Rated input frequency range	50...60	Hz	
Rated input current	0.57	A	@ rated output power @ rated input voltage
Max. input current	1.7	A	@ rated output power @ minimum performance input voltage
Rated input power	185	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
Input voltage AC range	99...305	V _{ac}	Performance 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	60...143	V _{dc}	
Output voltage max.	200	V	Peak voltage at open load
Output current	0.105...1.05	A	Full output current setting
Output current tolerance	± 5	%	@230V input @full load
Output current ripple LF (<3kHz)	≤ 5	%	Ripple = peak/average, full load
Output current ripple HF (≥3kHz)	≤ 15	%	@ full load
Output power	7...150	W	

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	1-10	V	Output current amplitude dimming
Dimming range	10...100	%	Default range
Galvanic Isolation	NA		

Logistical Data

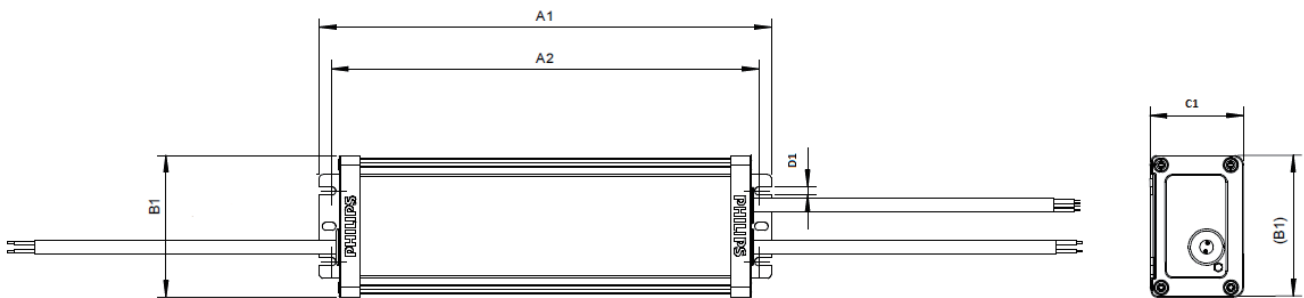
Specification item	Value
Product Name	Xitanium Dim 150W 1.05A 1-10V TWE I220
Logistics Code 12NC	9290 014 67780
Pieces per Box	10

Wiring & Connections

Specification item	Value	Unit	Condition
Input wire cross-section	1	mm ²	3-wire cable
Input wire length	450	mm	
Output wire cross-section	1	mm ²	2-wire cable
Output wire length	450	mm	
Dimming wire cross-section	1	mm ²	2-wire cable
Dimming wire length	300	mm	

Dimensions

Specification item	Value	Unit	Condition
Length (A1)	220	mm	Typical
Width (B1)	68.2	mm	Typical
Height (C1)	45	mm	Typical
Fixing hole diameter (D1)	4	mm	Typical
Fixing hole distance (A2)	207	mm	Typical
Weight	940	gram	Typical



Operational Temperature and Humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+55	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded.
Starting Ambient temperature	-40...+55	°C	
Tcase-max	85	°C	Maximum temperature measured at Tcase-point
Maximum housing temperature	90	°C	In case of a failure
Relative humidity	10...90	%	Non-condensing

Storage Temperature and Humidity

Specification item	Value	Unit	Condition
Ambient Temperature	-25...+85	°C	
Ambient Humidity	5...95	%	Non-condensing

Lifetime

Specification item	Value	Unit	Condition
Lifetime	50,000	Hours	Measured temperature at T _{case-point} is T _{case-max} . Maximum failures = 10%

Programmable Features

Specification item	Value	Remark	Condition
Set output current (AOC)	No	See Design-in guide.	Default output current: = 1050 mA

Features

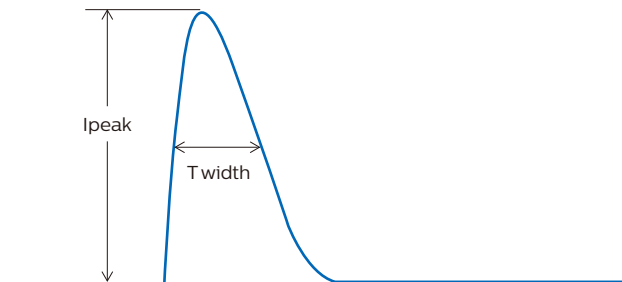
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I		per IEC60598
Over temperature protection driver	Yes		Automatic recovering
Overheating protection	Yes		Automatic recovering

Certificates and Standards

Specification item	Value
Approval Marks	UL / CSA / CE / ENEC / CB / CCC
Ingress Protection Rating	IP66/67

Inrush current

Specification item	Value	Unit	Condition
Inrush Current I _{peak}	48	A	Input voltage 230V
Inrush Current T _{width}	460	µs	Input voltage 230V, measured at 50% I _{peak}
Drivers / MCB 16A Type B	≤ 6	pcs	



MCB	Rating	Relative number of LED drivers
B	10A	63%
B	13A	81%
B	16A	100% (stated in datasheet)
B	20A	125%
B	25A	156%
C	10A	104%
C	13A	135%
C	16A	170%
C	20A	208%
C	25A	260%

Driver touch current / protective conductor current

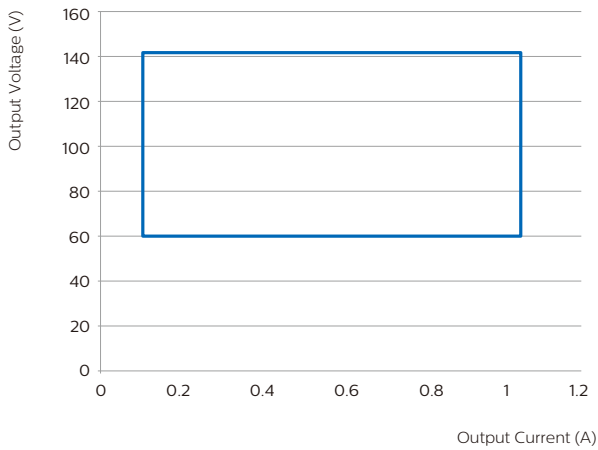
Specification item	Value	Unit	Condition
Typical touch current (ins. Class II)	<0.7	mA peak	Acc. IEC61347-1. LED module contribution not included

Surge immunity

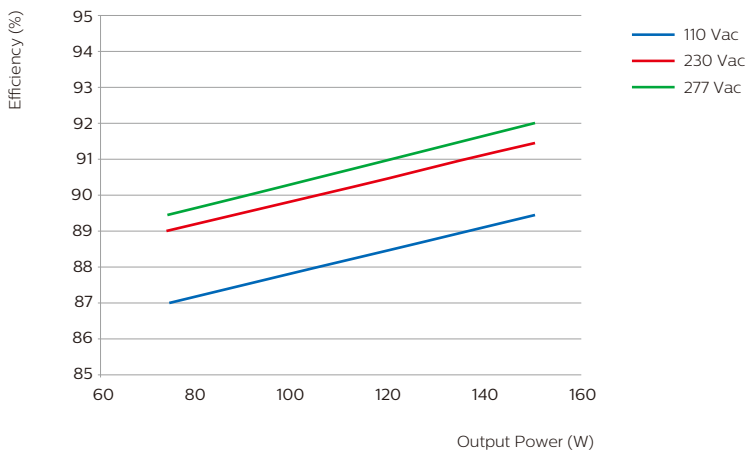
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	4	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	4	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us

Graphs

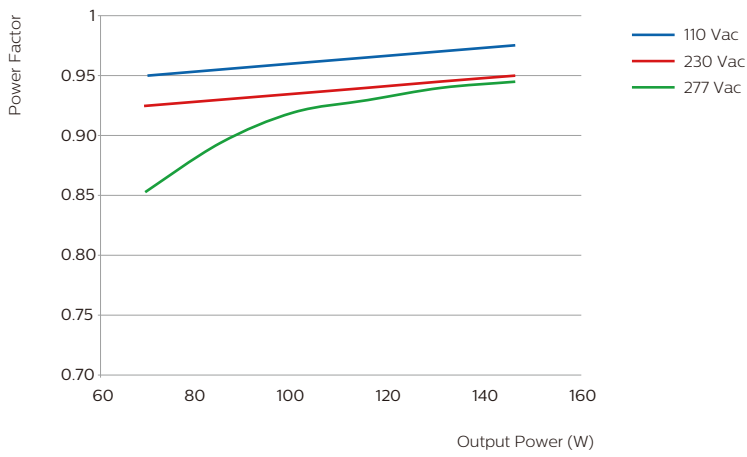
Operating window



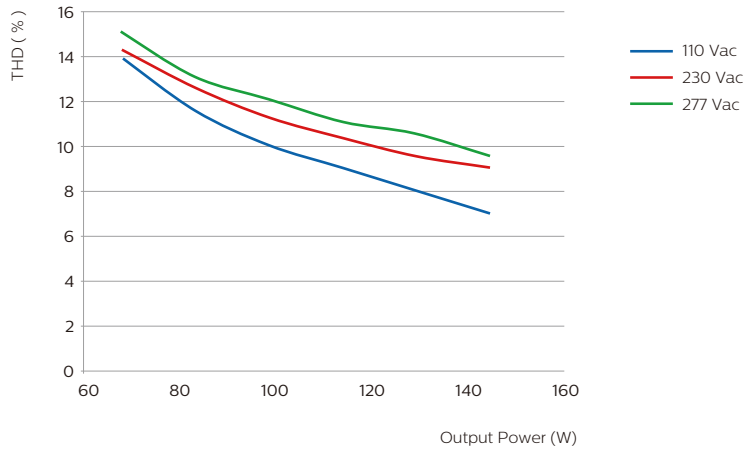
Efficiency versus output power (at T_{case-max})



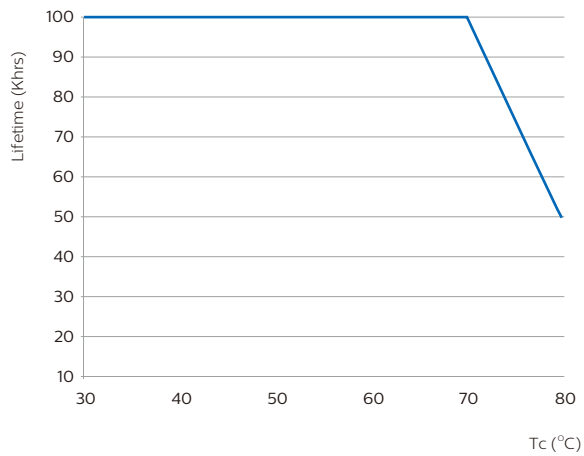
Power factor versus output power (at T_{case-max})



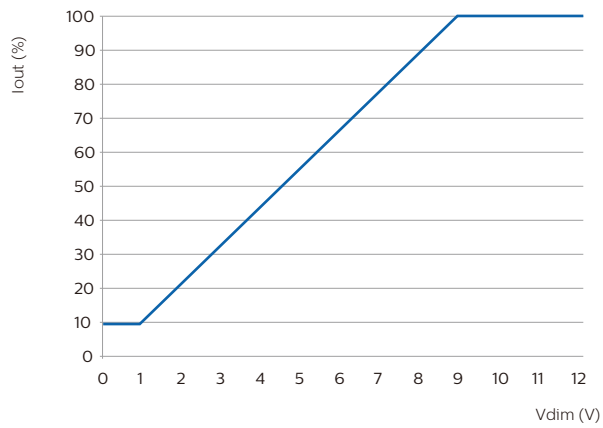
Total Harmonic Distortion (at T_{case-max})



Lifetime vs T_{case}



1-10V dimming Curve



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