PHILIPS

Xitanium

LED driver

Datasheet

Xitanium Outdoor LED Drivers Single Current Independent

Xitanium Dim 100W 0.70A 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

- Ultimate robustness and reliability secure the lowest luminaires maintenance overtime
- Long lifetime and high survival rate thanks to superior thermal management
- Consistent waterproof performance throughout the lifecycle
- Easy to design-in, based on extra EMI margin for independent use
- Compliance with IEC and UL standards, suitable for various markets
- Backed by 5 year warranty from a company you can trust

Features

- Proven robustness and reliable electronics driver design
- Achieving highest efficiencies based on advanced technology
- Extremely long lifetime, fitting with harsh outdoor applications
- Suitable for Class I isolated luminaires
- Authorized certificates: UL / CSA / CE / CCC / ENEC / CB

Application

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

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Electrical Input Data

Specification item	Value	Unit	Condition
Rated Input Voltage	110...277	V_{ac}	
Nominal input voltage	230	V_{ac}	
Input Frequency AC	47...63	Hz	Performance range
Rated Input Current	0.45	A	@ full load
Maximum Input Current	1.11	A	@ minimum input voltage AC
Rated Input Power	112	W	@ full load
Power Factor	≥ 0.95		@ full load
	≥ 0.92		@70% load
Total Harmonic Distortion	≤ 20	%	@ full load
Efficiency	≥ 91	%	@220V @ full load
Input voltage AC range	99...305	Vac	Performance range
Isolation input to output	Basic		

Electrical Output Data

Specification item	Value	Unit	Condition
Regulation Method	Constant Current		
Output Voltage	71...143	V_{dc}	+/-8% tolerance
Output Voltage Max	210	V_{dc}	Peak voltage at open circuit
Output Current	700	mA	Performance voltage range
Output Current Tolerance	± 5	%	At max. output current
Output Current Ripple LF	≤ 5	%	Ripple = peak/average, at<1kHz
Output current ripple HF	≤ 15	%	
Output Power	49.7...100	W	+/-8% tolerance

Electrical Data Control Input

Specification item	Value	Unit	Condition
Control Method	1-10	V	
Digital Interface	N/A		According 2.0 specifications
MainsControl	N/A		Can be configured via MultiOne
Time-based Integrated Control	N/A		Can be configured via MultiOne
Dimming Range	10-100	%	

Logistical Data

Specification item	Value
Product Name	Xitanium Dim 100W 0.70A 1-10V TWE I220
Logistics Code 12NC	929001402880
Pieces per Box	10

Wiring & Connections

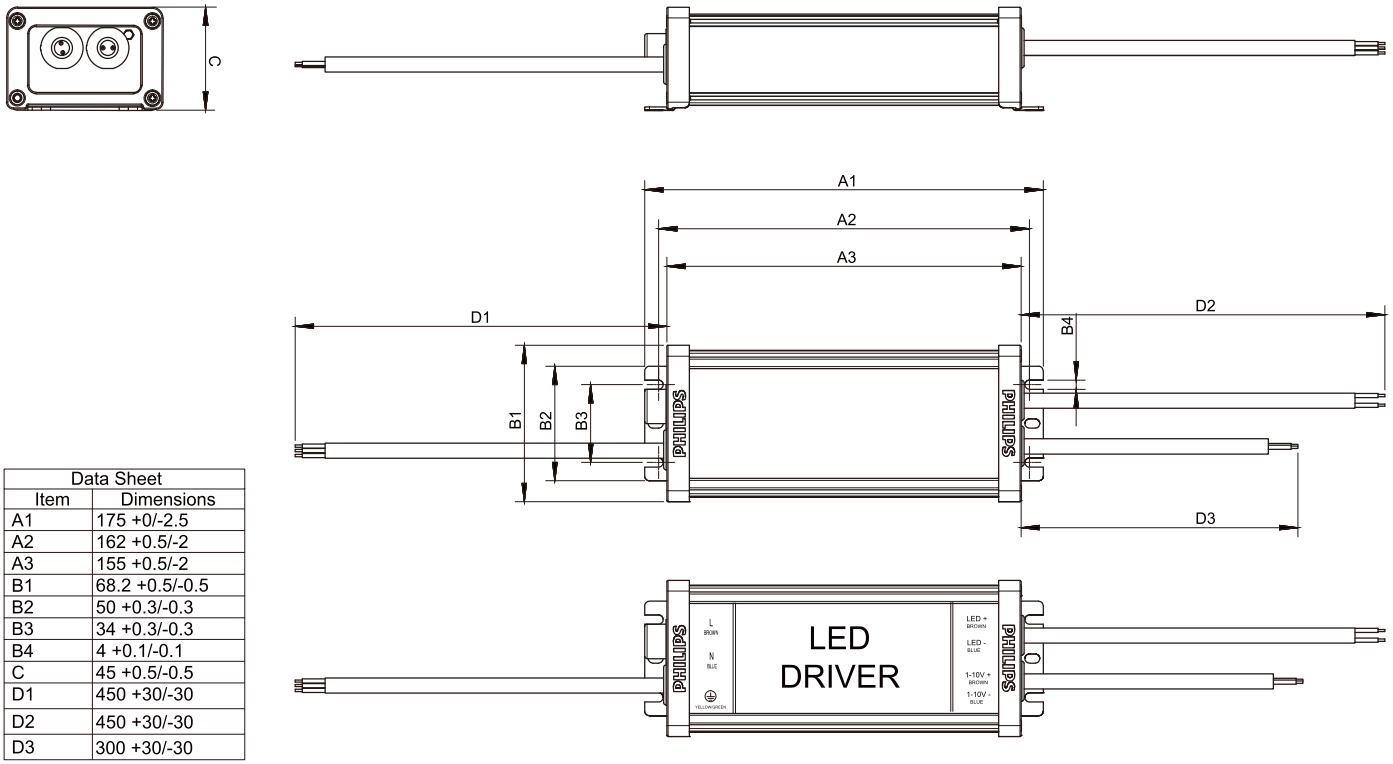
Specification item	Value	Unit	Condition
Input Wire Size	1.07	mm²	3-wire cable; AWG17
Output Wire Size	1.07	mm²	2-wire cable; AWG17
Input & Output Wire Length	450 ± 30	mm	Out of enclosure
Control Wire Size	1.0	mm²	2-wire cable; 300V/500V rating or higher
Control Wire Length	300 ± 30	mm	Out of enclosure

Insulation

BasicIsolation: 2U+1000 V	Input Wires	Output Wires	Chassis
Input Wires	N/A	Basic	Basic
Output Wires	Basic	N/A	Basic
Chassis	Basic	Basic	N/A

Dimensions

Specification item	Value	Unit	Condition
Length overall	220	mm	
Width overall	68.2	mm	
Height overall	45	mm	
Mounting Holes Distance	207	mm	
Mounting Holes Width	34	mm	
Mounting Holes Size	4	mm	For M4 with max head diameter of 10mm
Weight	910	g	



Data Sheet	
Item	Dimensions
A1	175 +0/-2.5
A2	162 +0.5/-2
A3	155 +0.5/-2
B1	68.2 +0.5/-0.5
B2	50 +0.3/-0.3
B3	34 +0.3/-0.3
B4	4 +0.1/-0.1
C	45 +0.5/-0.5
D1	450 +30/-30
D2	450 +30/-30
D3	300 +30/-30

Operational Temperature and Humidity

Specification item	Value	Unit	Condition
Ambient Temperature	-40...+55	°C	
Ambient Humidity	10...90	%	
Tcase Maximum	80	°C	Measured at Tc-point
Tcase Life	70	°C	Measured at Tc-point
Tcase Cut-Off	85	°C	Power to LEDs is reduced

Storage Temperature and Humidity

Specification item	Value	Unit	Condition
Ambient Temperature	-40...+80	°C	
Ambient Humidity	5...95	%	

Lifetime

Specification item	Value	Unit	Condition
Lifetime	50,000	Hours	At T_{case} Max; Survival rate = 90%

Programmable Features

Specification item	Value	Remark	Condition
Adjustable Output Current (AOC)	N/A		
LED Module Temperature Derating (MTP)	N/A		
Constant Lumen Output (CLO)	N/A		
DC Emergency Dimming (DCEmDIM)	N/A		
Corridor Mode	N/A		
Energy Metering	N/A		
Diagnostics	N/A		

Features

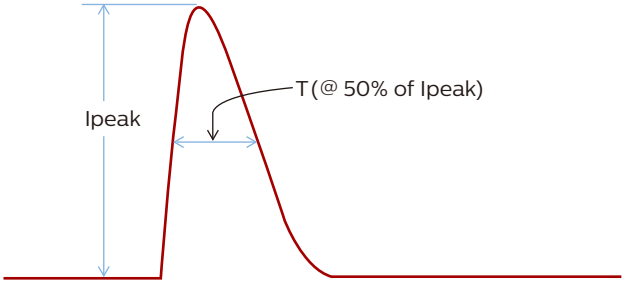
Specification item	Value	Remark	Condition
Over Temperature Protection	Yes	Dim Down	Automatic Recovery
Open Circuit Protection	Yes		Automatic Recovery
Short Circuit Protection	Yes		Automatic Recovery
Over Power Protection	Yes		
Hot Wiring	N/A		
Suitable for fixtures with Protection Class	Class I		
Input over-voltage	Yes		320Vac@48hrs 350Vac@2hrs

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 Ipeak	48	A	At 230Vac
Inrush Current Twidth	460	µs	At 230Vac, measured at 50% Ipeak
Drivers per MCB 16A Type B	≤ 6	pcs	



Earth Leakage Current

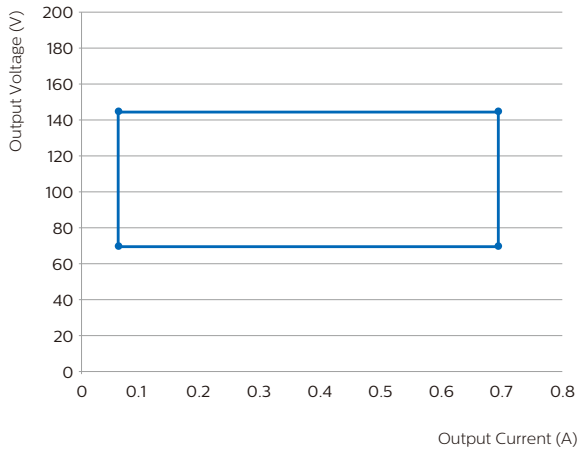
Specification item	Value	Unit	Condition
Typical Touch Current	≤ 0.7	mApk	Meets IEC60598; LED module not included

Surge Capability

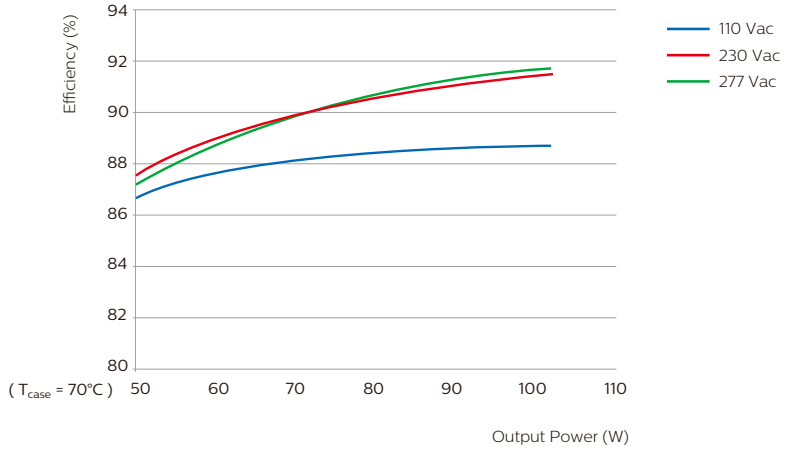
Specification item	Value	Unit	Condition
Mains Surge Capability Differential Mode	4	KV	Acc. IEC61000-4-5 & ANSI C62.41, 2Ohm
Mains Surge Capability Common Mode	4	KV	Acc. IEC61000-4-5 & ANSI C62.41, 2Ohm

Graphs

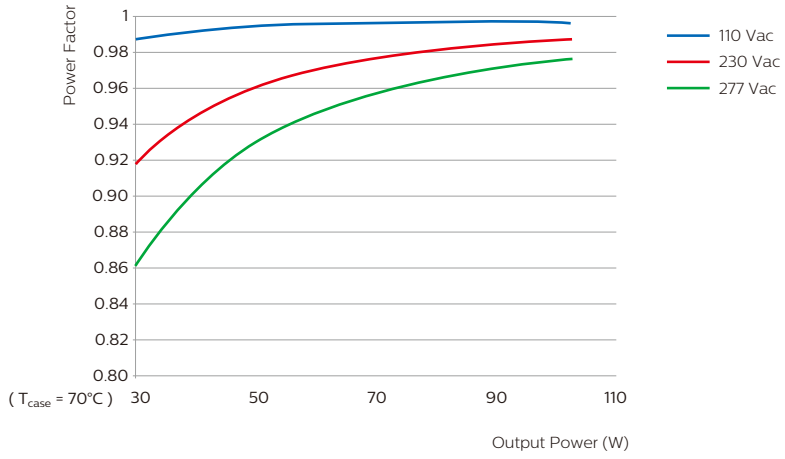
Operating window



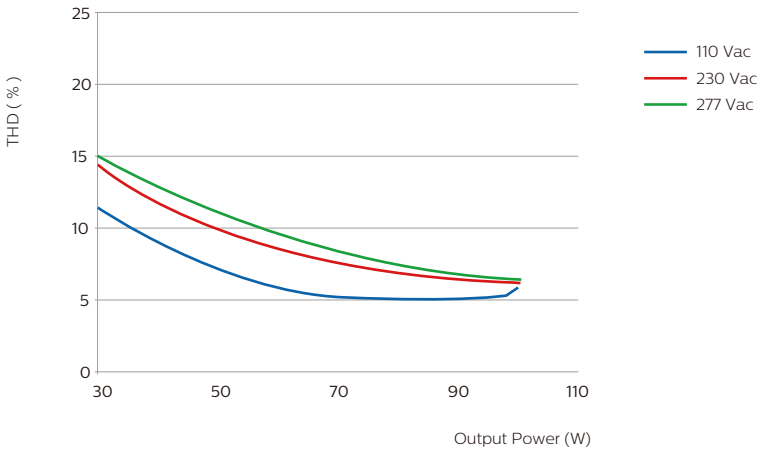
Efficiency versus output power



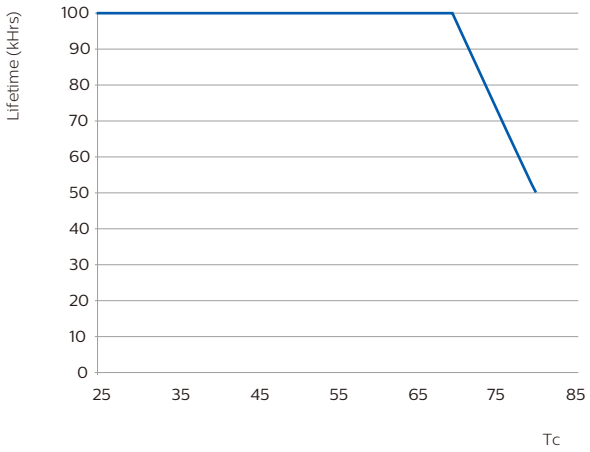
Power factor versus output power



Total Harmonic Distortion (Tcase = 70°C)

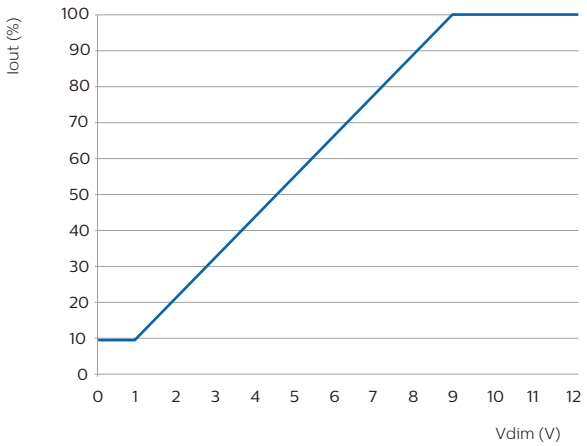


Lifetime vs Tcase



- Failure rate information based upon MTTF modeling: 90% survival at end of life @ Tcase<=80°C
- Failure rate information based upon field call rate data: <0.01% per 1K hour @ Tcase<=80°C

1-10V dimming Curve



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