

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium Dim 150W 0.7A 1-10V 230V Y

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

Reliability

- 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

Affordable

- Component integration in advanced IC enables cost effective design
- Proven robustness & reliability secure the lowest luminaire maintenance over time

Easy to use

- Extreme compact size. fitting with varied luminaires
- Easy to design-in based on the good thermal management and extra EMI margin

Features

- Proven robustness and reliable electronic driver design
- Achieving highest efficiencies based on advance technology
- Long lifetime; 50k hrs@Tc max
- Extreme compact size, fitting with varied and critical luminaires
- Suitable for Class I isolated luminaires
- Authorized certificate: ENEC, CB, CE and CCC

Application

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

Electrical input data

Specification item	Value	Unit	Condition
Nominal Input Voltage	220...240	V _{ac}	
Input Voltage AC	202...254	V _{ac}	Performance range
Nominal Input Frequency	50...60	Hz	
Operation Voltage AC	85...305	V	Safety Operation range
Input Frequency AC	47...63	Hz	Maximum permissible range
Nominal Input Current	0.76...0.69	A	220V...240V at full load
Maximum Input Current	0.83	A	At 202V
Nominal Input Power	165	W	At 230V at full load
Power Factor	≥0.95		At 230V at full load
Total Harmonic Distortion	≤10	%	At 230V at full load
Efficiency	92	%	At 230V at full load

Electrical output data

Specification item	Value	Unit	Condition
Regulation Method	Constant Current		
Output Voltage	96...214	V _{dc}	
Output Voltage Max	320	V _{dc}	Peak voltage at open circuit
Output Current	700...70	mA	Performance range
Output Current Tolerance	±5	%	At max. output current
Output Current RippleLF	5	%	Ripple = peak / average, at <1kHz
Output Power	150	W	At full load
Galvanic Isolation	Yes		Basic; 2U+1000V

Electrical data controls 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

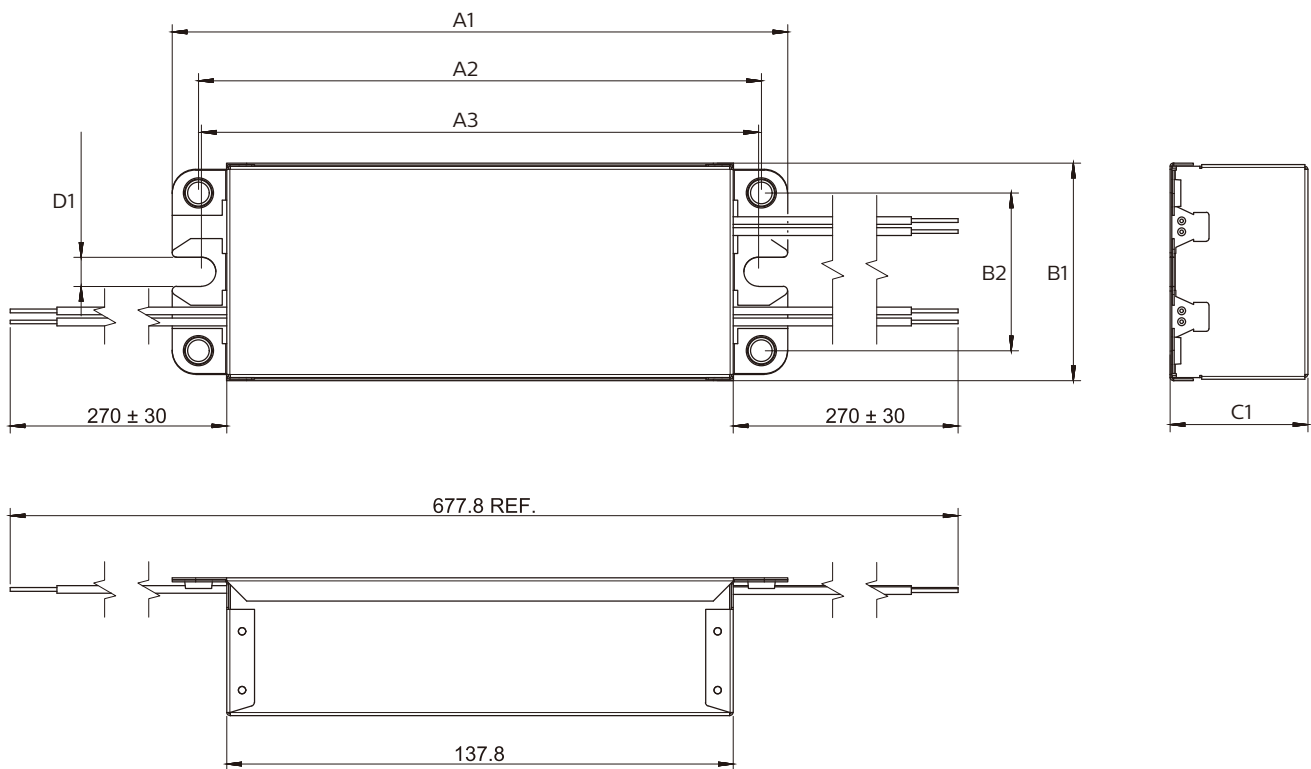
Specification item	Value
Product name	XitaniumDim 150W 0.7A 1-10V 230V Y
Logistic code 12NC	9290 014 01680
Pieces per box	12

Wiring & Connections

Specification item	Value	Unit	Condition
Input Wire Size	0.75	mm ²	2-wire 18AWG; 600V/105C rating or higher
Output Wire Size	0.75	mm ²	2-wire 18AWG; 600V/105C rating or higher
Input& Output Wire Length	270±30	mm	Out of enclosure
Control Wire Size	N/A	mm	N/A
Control Wire Length	N/A	mm	

Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	167.5	mm	
Length (A2)	153.2	mm	
Length (A3)	151.6	mm	
Width (B1)	59.2	mm	
Width (B2)	42.9	mm	
Height (C1)	37.5	mm	
Fixing hole distance (D1)	7.9	mm	
Weight	586	g	



CE isolation

Basic Isolation: 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

Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient Temperature	-40 ... +55	°C	
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...+55	°C	

Lifetime

Specification item	Value	Unit	Condition
Driver lifetime	100,000	hours	At Tcase Life; Survival rate = 90%

Programmable features

Specification item	Value	Remark	Condition
Adjustable Output Current (AOC)	N/A	See Design-in guide	Default output current: = 700 mA
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

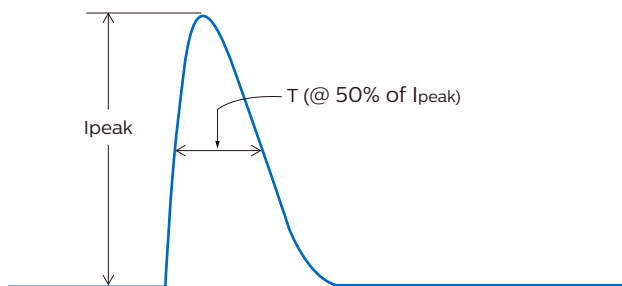
Specification item	Value	Remark	Condition
Open Circuit Protection	Yes		
Short Circuit Protection	Yes		Automatic Recovery
Over Power Protection	Yes		Automatic Recovery
Hot Wiring	N/A		
Suitable for fixtures with Protection Class	Class I		

Certificates and Standards

Specification item	Value
Approval Marks	CE / CCC / ENEC / CB
Ingress Protection Rating	NA

Inrush current

Specification item	Value	Unit	Condition
Inrush Current I_{peak}	60.6	A	At 240V _{ac}
Inrush Current T_{width}	205.5	μ s	At 240V _{ac} , measured at 50% I_{peak}
Drivers per MCB 16A Type B	≤ 8	pcs	



Earth leakage current

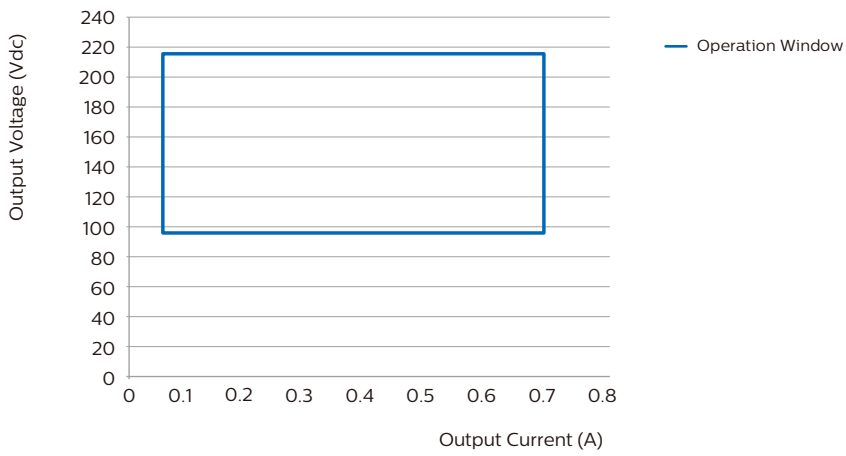
Specification item	Value	Unit	Condition
Typical Leakage Current	≤ 0.7	mA pk	Meets IEC60598; LED module not included

Surge immunity

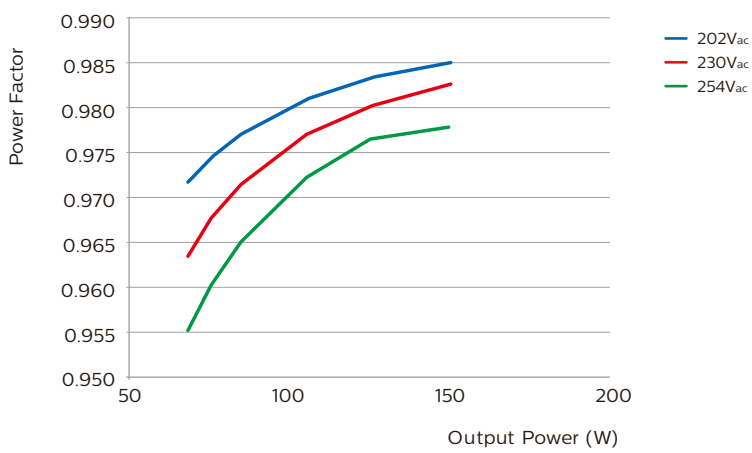
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	4	kV	L-N, 2 Ohm
Mains surge immunity (comm. mode)	4	kV	L/N - GND, 2 Ohm

Graphs

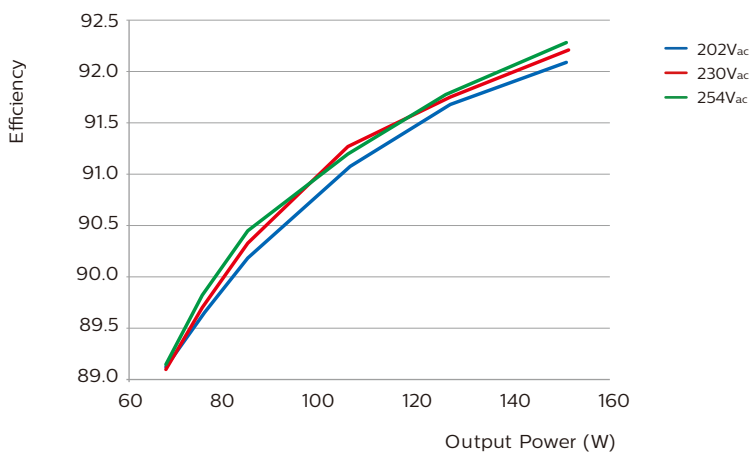
Operating window



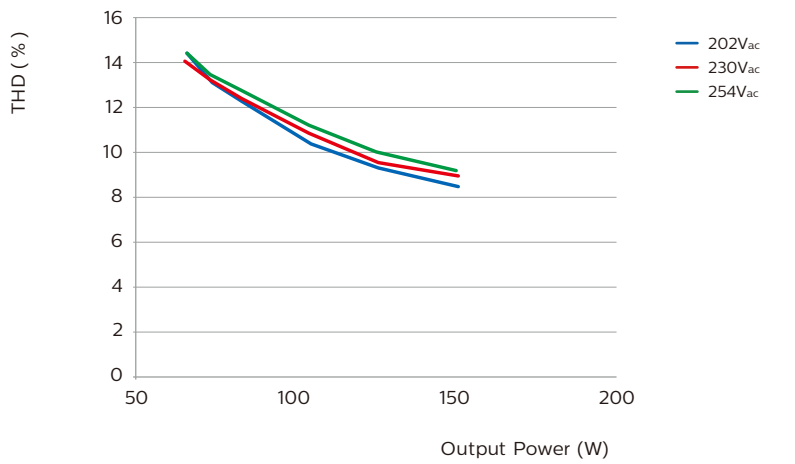
Power factor versus output power



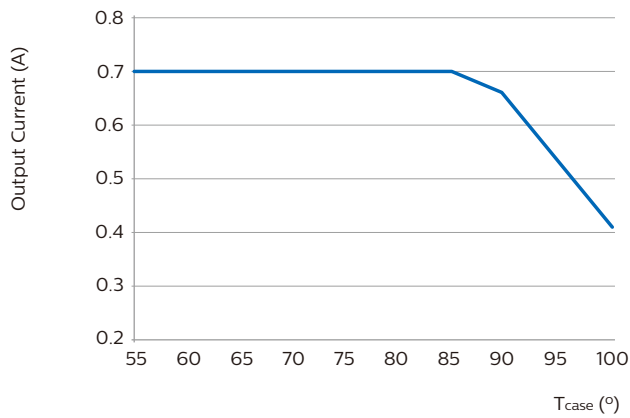
Efficiency versus output power



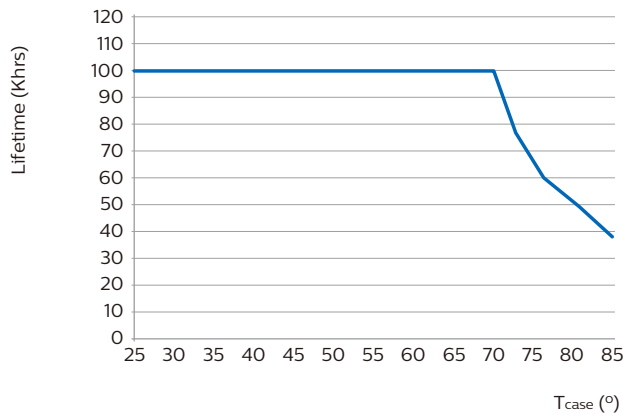
THD versus output power



Output Current vs Tcase

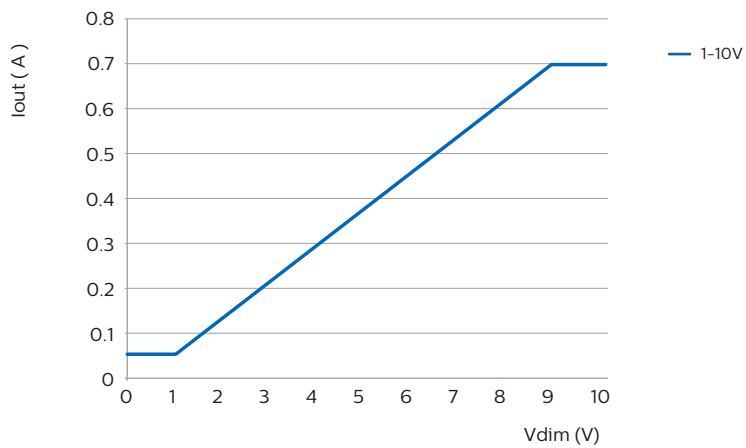


Lifetime vs Tcase



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

1-10V Dimming Curve



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