PHILIPS

Xitanium

LED driver

Datasheet

Xitanium Outdoor LED Drivers Dimmable (1-10V) Independent

Xitanium Dim 250W 0.70A 1-10V 230V I220C

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. Philips Xitanium 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 Surge protection suitable for much more rigorous outdoor application.
- Backed by 5 year warranty from a company you can trust.
- Consistent waterproof performance through the lifecycle.

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.
- Surge protection; 6kV line-line, 6kV line-earth
- Suitable for Class I isolated luminaires.
- Authorized certificate: ENEC, CB, CE and CCC.

Applications

- 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	Vac	
Input Voltage AC	198…264	Vac	Performance range
Operation Voltage AC	85…305	Vac	Safety operation range
Nominal Input Frequency	50…60	Hz	
Input Frequency AC	47…63	Hz	Maximum permissible range
Nominal Input Current	0.9…1.2	A	220V…240V at full load
Maximum Input Current	1.35	A	At 198V
Nominal Input Power	265	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	94	%	At 230V at full load

Electrical Output Data

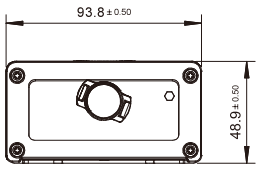
Specification item	Value	Unit	Condition
Regulation Method	Constant Current		
Output Voltage	178…357	V_{dc}	
Output Voltage Max	550	V_{dc}	Peak voltage at open circuit
Output Current	700	mA	Performance voltage range
Output Current Tolerance	±5	%	At max. output current
Output Current Ripple LF	5	%	Ripple = peak / average, at<1kHz
Output Power	250	W	At full load
Galvanic Isolation	Yes		Basic; 2U+1000V

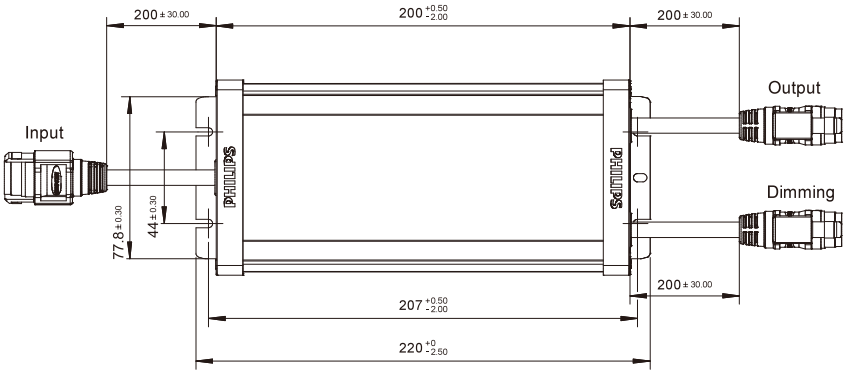
Electrical Data Control Input

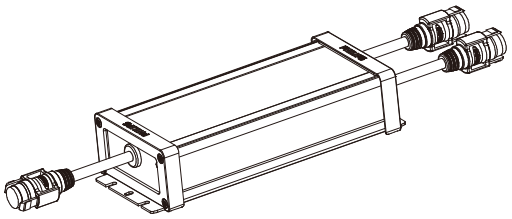
Specification item	Value	Unit	Condition
Control Method	1-10	V	
Digital Interface	N/A		According 2.0 specifications
Mains Control	N/A		Can be configured via MultiOne
Time-based Integrated Control	N/A		Can be configured via MultiOne
Dimming Range	10-100	%	

Wiring & Connections

Specification item	Value	Unit	Condition
Input Wire Size	1.0	mm²	3-wire cable; 300V/500V rating or higher
Output Wire Size	1.0	mm²	2-wire cable; 300V/500V rating or higher
Input & Output Wire Length	200 ± 30	mm	Out of enclosure and not including connector length
Control Wire Size	1.0	mm²	2-wire cable; 300V/500V rating or higher
Control Wire Length	200 ± 30	mm	Out of enclosure and not including connector length







CE Isolation

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

Operational Temperature 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	90	°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
Lifetime	100,000	Hours	At T_{case} Life; Survival rate = 90%

Programmable Features

Specification item	Value	Remark	Condition
Adjustable Output Current (AOC)	N/A		See Design-In Guide
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

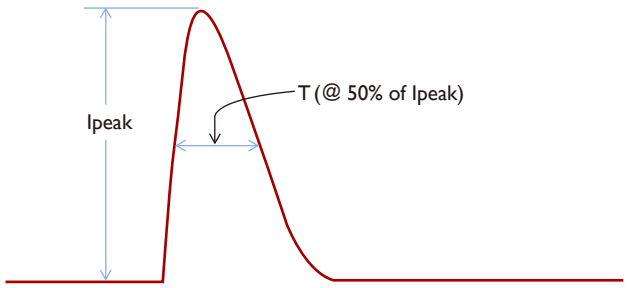
Specification item	Value	Remark	Condition
Over Temperature Protection	Yes	Dim Down	Automatic Recovery
Open Circuit Protection	Yes		Automatic Recovery
Short Circuit Protection	Yes		Automatic Recovery
Over Power Protection	Yes		
Hot Wiring	N/A		
Suitable for fixtures with Protection Class	Class I		
Input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

Certificates and Standards

Specification item	Value
Approval Marks	RCM / CE / CCC / ENEC / CB
Ingress Protection Rating	IP67

Inrush current

Specification item	Value	Unit	Condition
Inrush Current Ipeak	38.3	A	At 230Vac
Inrush Current Twidth	625	µs	At 230Vac, measured at 50% Ipeak
Drivers per MCB 16A Type B	6	pcs	



Earth Leakage Current

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

Surge Capability

Specification item	Value	Unit	Condition
Mains Surge Capability Differential Mode	6	KV	L-N, 2Ohm
Mains Surge Capability Common Mode	6	KV	L/N-GND, 12Ohm

Dimensions

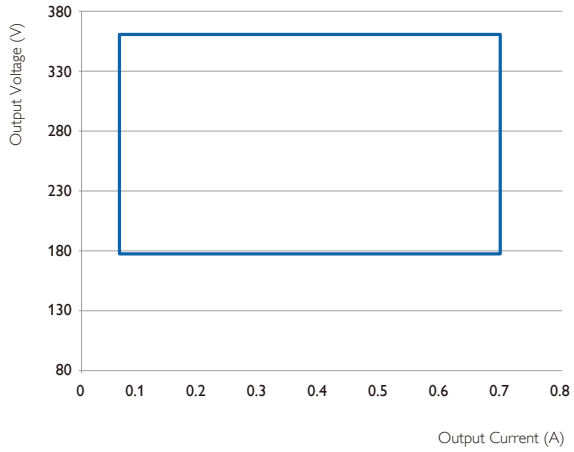
Specification item	Value	Unit	Condition
Length overall	220	mm	
Width overall	93.8	mm	
Height overall	48.6	mm	
Mounting Holes Distance	207	mm	
Mounting Holes Width	44	mm	
Mounting Holes Size	4	mm	For M4 with max head diameter of 10mm
Weight	1305	g	

Logistical Data

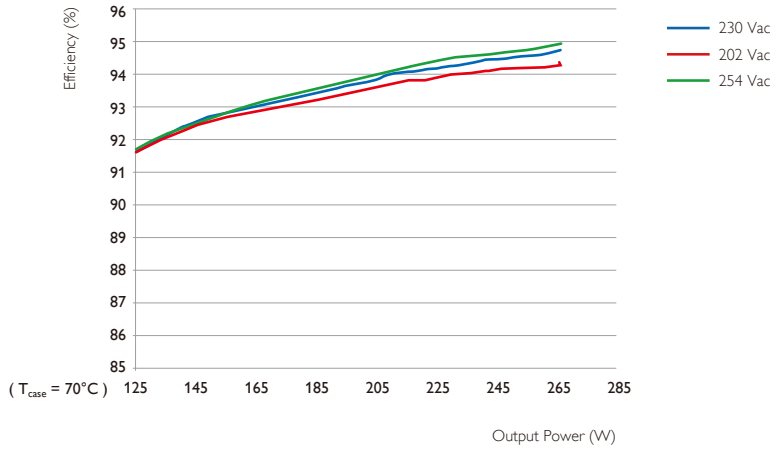
Specification item	Value
Product Name	Xitanium Dim 250W 0.7A 1-10V 230V I220C
Logistics Code 12NC	9290 014 04080
Pieces per Box	6

Graphs

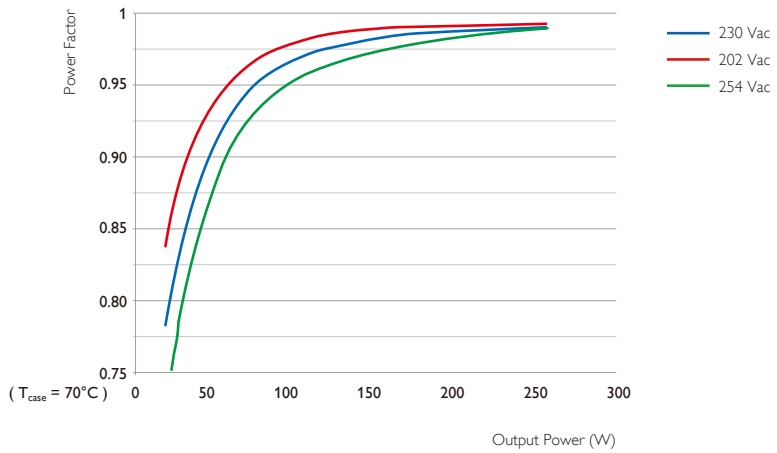
Operating window



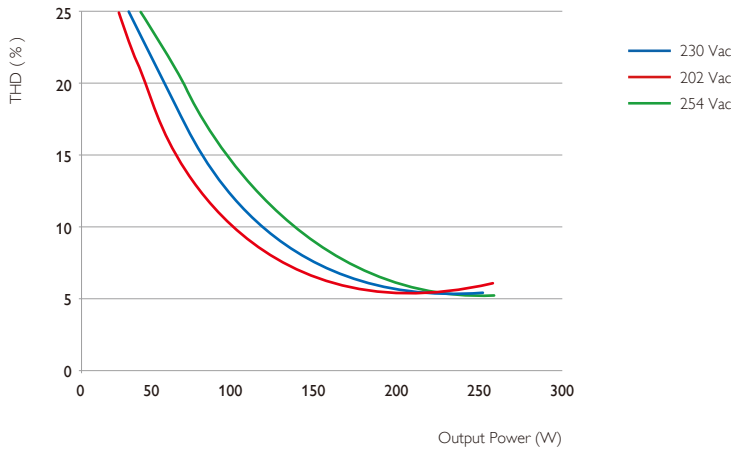
Efficiency versus output power



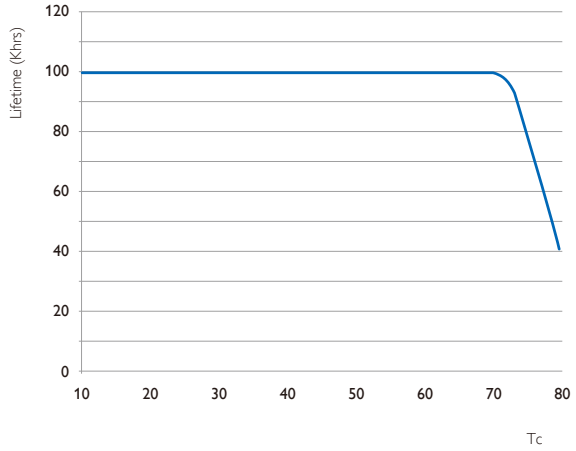
Power factor versus output power



Total Harmonic Distortion (Tcase = 70°C)

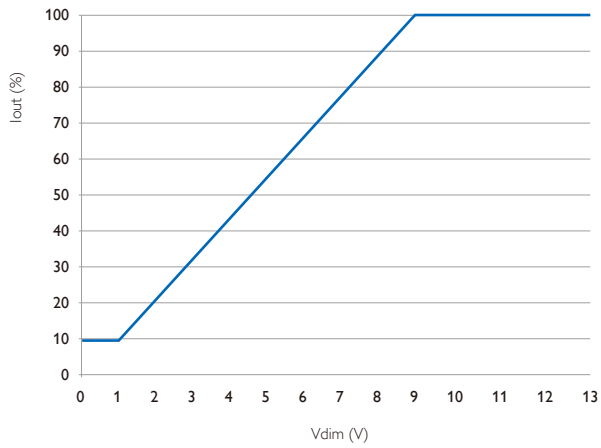


Lifetime vs Tcase

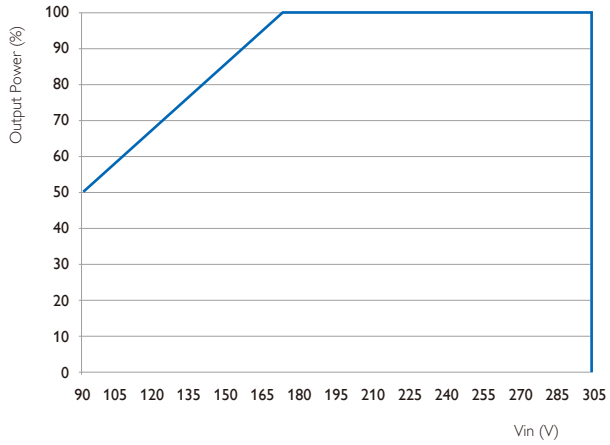


- Failure rate information based upon MTTF modeling: 90% survival at end of life @ Tcase<=80°C
- Failure rate information based upon field call rate data: <0.01% per 1K hour @ Tcase<=80°C

1-10V dimming Curve



250W Vin vs Pout



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