

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium Outdoor LED Drivers Single Current Independent

Xitanium Dim 65W 0.7A 1-10V 230V I175

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. The Philips Xitanium Dimmable Output LED Outdoor Drivers are specifically designed to deliver reliable performance and protection while meeting 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.
- Component integration in advanced IC enables cost effective design.
- Proven robustness & reliability secure the lowest luminaire maintenance over time.
- 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 advanced technology.
- Long lifetime warrantee @ Tc max.
- 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	220...240	V _{ac}	
Rated input voltage	230	V _{ac}	
Rated input frequency range	47...63	Hz	Performance range
Rated input current	0.32	A	@ rated output power @ rated input voltage
Max. input current	0.33	A	@ rated output power @ minimum performance input voltage
Rated input power	72	W	@ rated output power @ rated input voltage
Power factor	≥ 0.95		@ rated output power @ rated input voltage
Total harmonic distortion	≤ 15	%	@ rated output power @ rated input voltage
Efficiency	≤ 90	%	@ rated output power @ rated input voltage
Input voltage AC range	85...305	V _{ac}	Safety operational range
Isolation input to output	Basic		

Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	46...93	V _{dc}	
Output voltage max.	140	V	Peak voltage at open load
Output current	0.07...0.7	A	
Output current tolerance	± 5	%	
Output current ripple LF	≤ 5	%	Ripple = peak / average, @≤1kHz
Output current ripple HF	≤ 15	%	
Output power	65	W	Full output

Electrical data controls input

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

Logistical data

Specification item	Value
Product name	Xitanium Dim 65W 0.7A 1-10V 230V I175
Logistic code 12NC	9290 014 26280
Pieces per box	10

Wiring & Connections

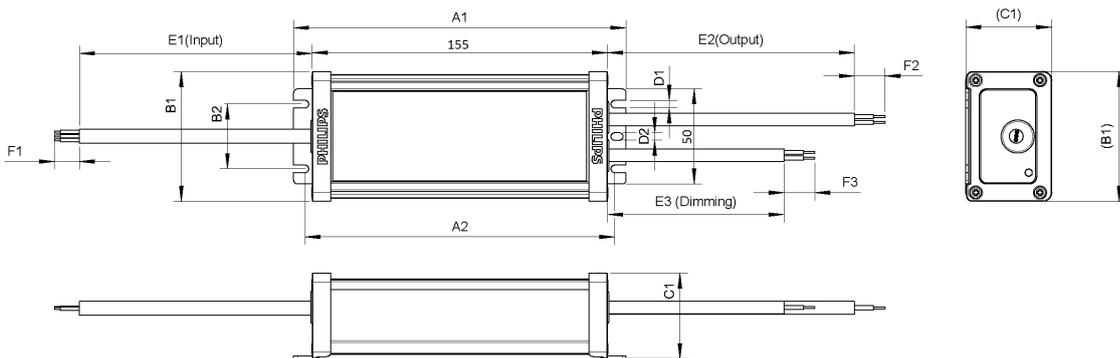
Specification item	Value	Unit	Condition
Input wire cross-section	1	mm ²	3x 1.0mm ² stranded wires, waterproof cable
Output wire cross-section	1	mm ²	2x 1.0mm ² stranded wires, waterproof cable
Dimming wire cross-section	1	mm ²	2x 1.0mm ² stranded wires, waterproof cable

Insulation

Insulation	Mains	Housing	LED	1-10V
Mains		Basic	Basic	Basic
Housing	Basic		Basic	Basic
LED	Basic	Basic		Basic
1-10V	Basic	Basic	Basic	

Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	175	mm	
Width (B1)	68.2	mm	
Width (B2)	34	mm	
Height (C1)	45	mm	
Fixing hole diameter (D1)	4	mm	
Mounting hole diameter (D2)	4	mm	
Fixing hole distance (A2)	162	mm	
Input cable length (E1)	420	mm	
Output cable length (E2)	420	mm	
Control cable length (E3)	270	mm	
Input cable wire length (F1)	30	mm	
Output cable wire length (F2)	30	mm	
Control cable wire length (F3)	30	mm	
Weight	750	gram	



Operational temperatures and humidity

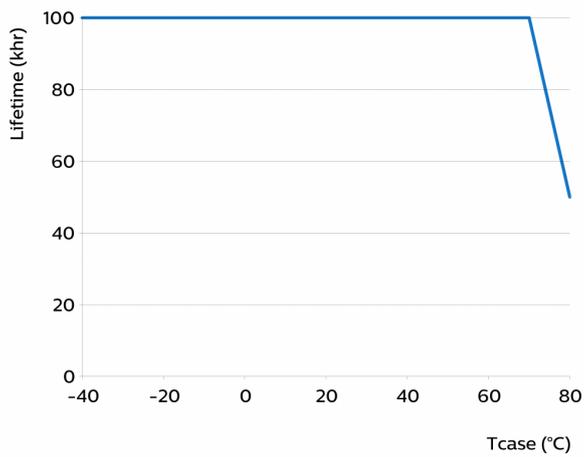
Specification item	Value	Unit	Condition
Ambient temperature	-40...+55	°C	Higher ambient temperature allowed as long as T _{case-max} is not exceeded.
T _{case-max}	80	°C	Maximum temperature measured at T _{case} -point
T _{case-life}	80	°C	Measured at T _{case} -point
Maximum housing temperature	90	°C	In case of a failure
Relative humidity	10...90	%	Non-condensing

Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+80	°C	
Relative humidity	5...95	%	Non-condensing

Lifetime

Specification item	Value	Unit	Condition
Driver lifetime	50,000	hours	Measured temperature at $T_{\text{case}}^{\text{point}}$ is $T_{\text{case}}^{\text{max}}$. Maximum failures = 10%



Programmable features

Specification item	Value	Remark	Condition
Set output current (AOC)	No	See Design-in guide.	Default output current: = 700 mA

Features

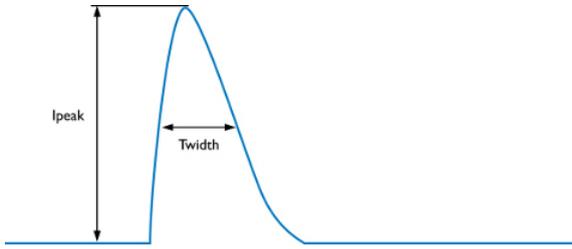
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I		per IEC60598
Over temperature protection driver	Yes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

Certificates and standards

Specification item	Value
Approval marks	CB / CCC / CE / ENEC
Ingress Protection classification	67

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	28	A	Input voltage 230V
Inrush current T_{width}	340	μ s	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 11	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 protective conductor current (ins. Class I)	< 0.4	mA rms	Acc. IEC61347-1. LED module contribution not included

Surge immunity

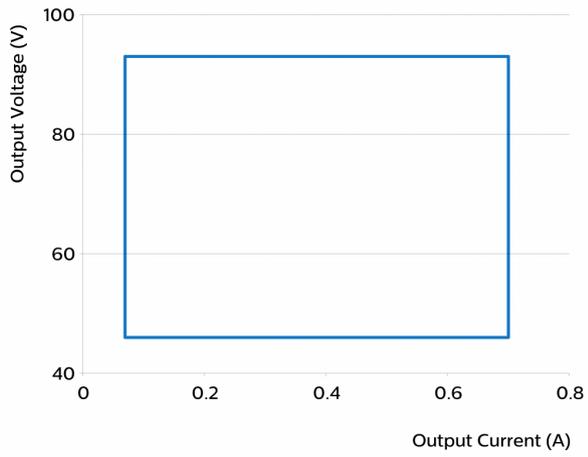
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	4	kV	L-N, 2 Ohm
Mains surge immunity (comm. mode)	4	kV	L/N-GND, 2 Ohm

Additional information

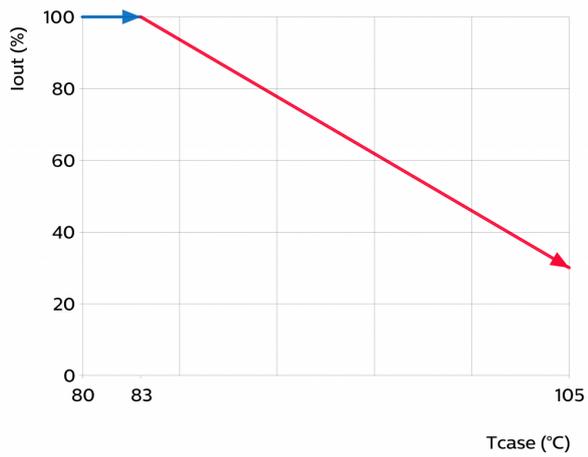
Specification item	Default setting	Remark	Condition
1-10V	ON		

Graphs

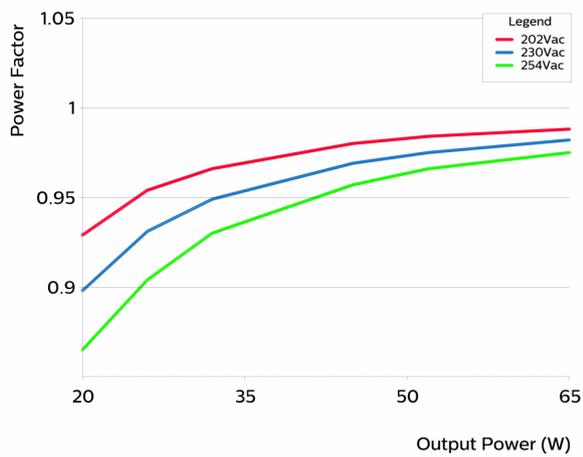
Operating window



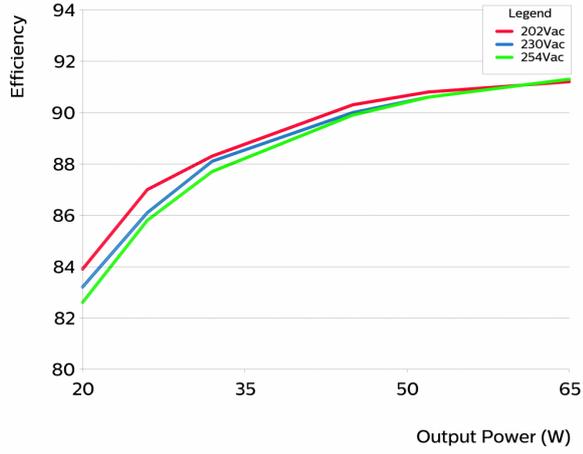
Thermal Guard



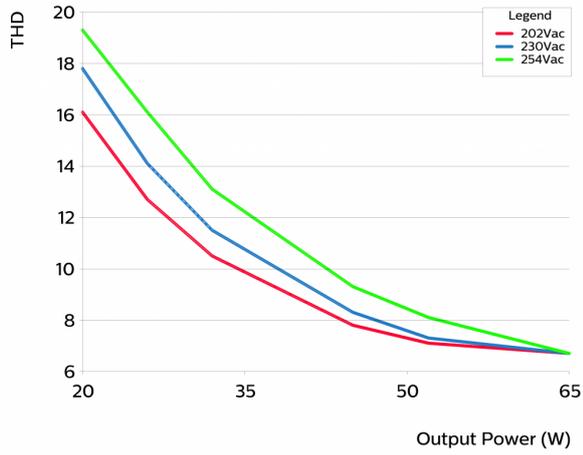
Power factor versus output power



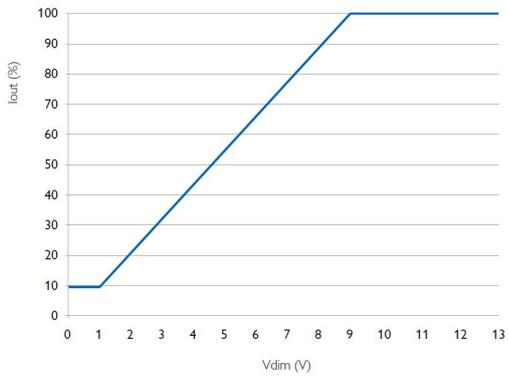
Efficiency versus output power



THD versus output power



I_{out} as function of 1-10V interface





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Date of release: September 13, 2017 v27

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