

# PHILIPS

## Xitanium

### LED driver



## Datasheet

# Xitanium Highbay LED Drivers Dimmable (1-10V) Independent Xitanium Dim 220W 1.05A 1-10V 230V I240

LED-based light sources are an excellent solution for highbay industrial applications. 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

- Ultimate robustness and reliability secure the lowest luminaires maintenance overtime
- Best in class, thermal performance withstanding harsh High-bay industry applications
- Consistent waterproof performance throughout the lifecycle
- Easy to design-in, based on broad compatibility and superior thermal management
- Backed by a 5 year warranty from a company you can trust

### Features

- Proven robustness and reliable electronic driver design
- Achieving highest efficiencies based on advanced technology
- Extremely long lifetime, fitting with highbay industrial applications
- Independent/IP67 rated
- Dimmable through 1-10V interface
- Suitable for IEC insulation Class I systems
- Authorized certificates: CE, ENEC, CB and CCC

### Application

- Highbay industrial lighting
- Warehouse lighting
- Big-box retail store lighting

## Electrical input data

Specification item	Value	Unit	Condition
Nominal input voltage	220...240	V <sub>ac</sub>	
Nominal input frequency	50...60	Hz	
Nominal input current	1.06	A	@230V @ full load
Max. input current	1.22	A	@ minimum input voltage AC
Input voltage	230	V <sub>ac</sub>	
Nominal input power	244	W	@230V @ full load
Power factor	≥ 0.98		@ full load. See graph.
Total harmonic distortion	< 10	%	@ full load. See graph.
Efficiency	91	%	@230V @ full load
Input voltage AC	85...305	V <sub>ac</sub>	Safety operational range
Input frequency AC	45...66	Hz	Operational range
Isolation Input to Output	Basic		

## Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	100...210	V <sub>dc</sub>	
Output voltage max	270	V <sub>dc</sub>	Peak voltage at open load
Output current	1.05	A	Full output current setting
Output current min dimming	105	mA	
Output current tolerance	± 5	%	
Output current ripple LF	< 5	%	Ripple = peak/average @ 1KHz
Output current ripple HF	≤ 15	%	
Output power	220	W	Full output

## Electrical data controls input

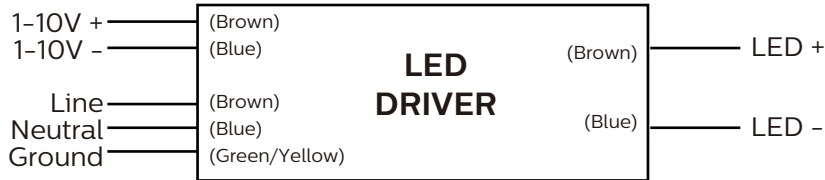
Specification item	Value	Unit	Condition
Control method	1-10V		Output current amplitude dimming, 1-10V acc. IEC60929
Dimming range	10...100	%	1-9V
Galvanic Isolation	Basic		

## Logistical data

Specification item	Value
Product name	Xitanium Dim 220W 1.05A 1-10V 230V I240
Order code	
Logistic code 12NC	9290 014 07780
EAN3	
Pieces per box	6

## Wiring & Connections

Specification item	Value	Unit	Condition
Input Wire Size	1.0	mm <sup>2</sup>	3-wire cable: 300V/500V rating or higher
Output Wire Size	1.0	mm <sup>2</sup>	2-wire cable: 300V/500V rating or higher
Input Wire Length	450 ± 30	mm	Out of enclosure
Output Wire Length	480 ± 30	mm	Out of enclosure
Control Wire Size	1.0	mm	2-wire cable: 300V/500V rating or higher
Control Wire Length	200	mm	Out of enclosure and not including connector length

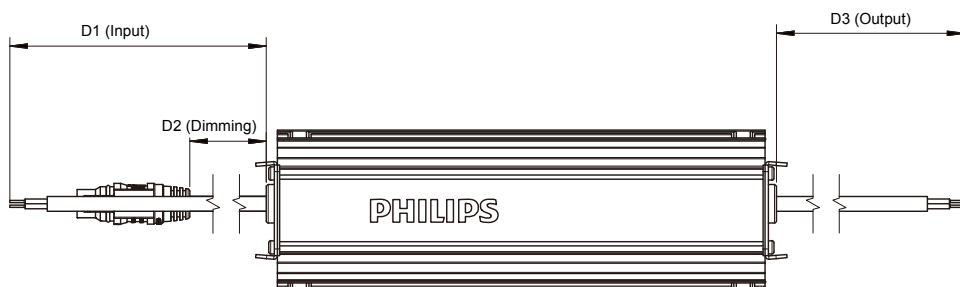
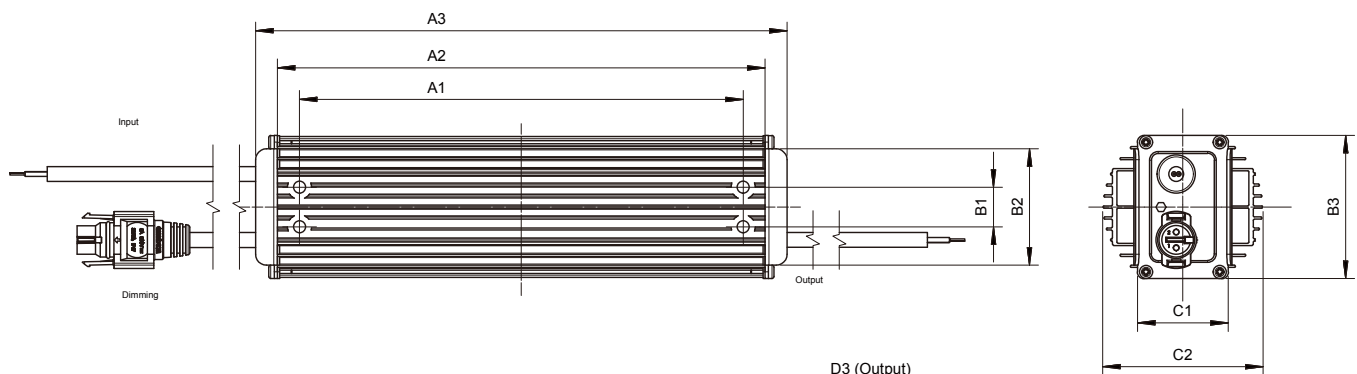


## Insulation

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

## Dimensions and weight

Specification item	Value	Unit	Condition
Length (A3)	244	mm	
Width (B3)	65	mm	
Width (B1)	18	mm	
Height (C2)	73	mm	
Fixing hole distance (A1)	202	mm	



Data Sheet	
Item	Dimensions
A1	202 +/-2.5
A2	222 +/-0.5
A3	244 +0.5/-2
B1	18 +0.5/-0.5
B2	53 +0.3/-0.3
B3	65 +0.3/-0.3
C1	41.3 +0.5/-0.5
C2	73 +1.5/-1.5
D1	450 +30/-30
D2	200 +30/-30
D3	480 +30/-30

## Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient Temperature	-40 ... +65	°C	Higher ambient temperature allowed as long as T <sub>max</sub> -life is not exceeded
Starting Ambient temperature	-40 ... +65	°C	
T <sub>case</sub> -max	85	°C	Maximum temperature measured at T <sub>case</sub> -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...+85	°C	
Relative humidity	5 ... 95	%	Non-condensing

## Lifetime

Specification item	Value	Unit	Condition
Driver lifetime	50,000	hours	Measured temperature at T <sub>case</sub> -point is T <sub>case</sub> -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

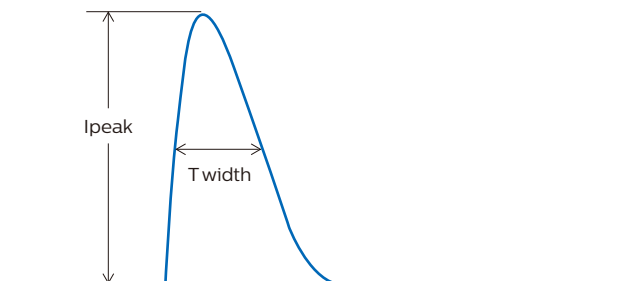
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I		per IEC60598
Over temperature protection driver	Yes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

## Certificates and Standards

Specification item	Value
Approval Marks	CB / CCC / CE / ENEC
Ingress Protection Rating	IP 67

## Inrush current

Specification item	Value	Unit	Condition
Inrush Current $I_{peak}$	47.6	A	Input voltage 230V
Inrush Current $T_{width}$	478	$\mu s$	Input voltage 230V, measured at 50% $I_{peak}$
Drivers / MCB 16A Type B	5	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

Specification item	Value	Unit	Condition
Typical touch current	< 0.6	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)	6	kV	Acc. IEC61000-4-5. 12 Ohm 1.2/50us, 8/20us
Control surge immunity (diff. mode)	0.5	kV	Acc. IEC61000-4-5. 2 Ohm 1.2/50us, 8/20us
Control surge immunity (comm. mode)	6	kV	Acc. IEC61000-4-5. 12 Ohm 1.2/50us, 8/20us

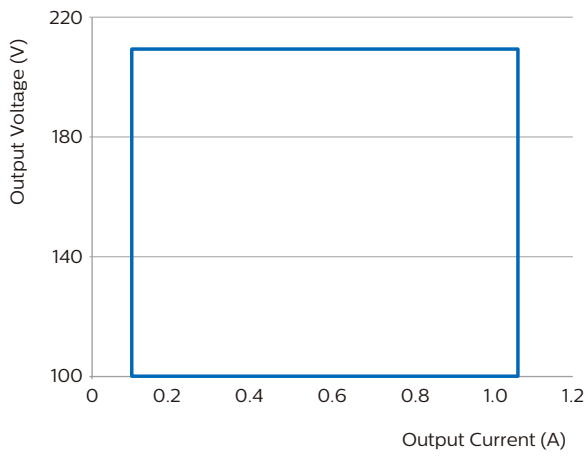
## Additional information

Specification item	Value	Unit	Condition
1-10V	ON	See Design-in guide	In case of EMI test for the critical configuration, please contact Philips for additional filter recommendation.

## Graphs

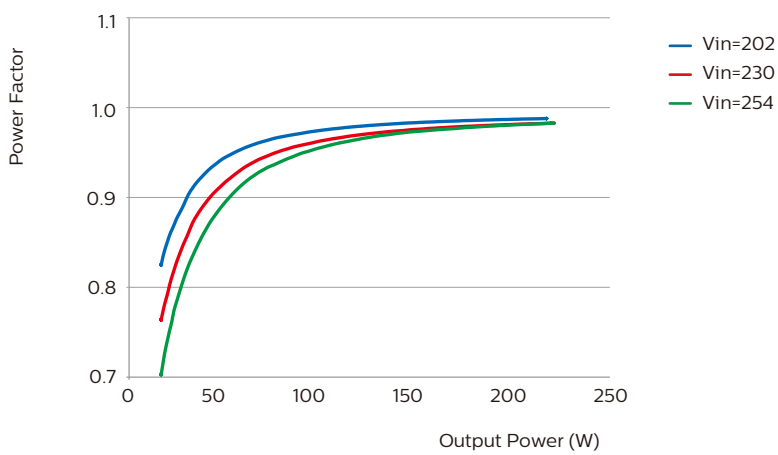
### Operating window

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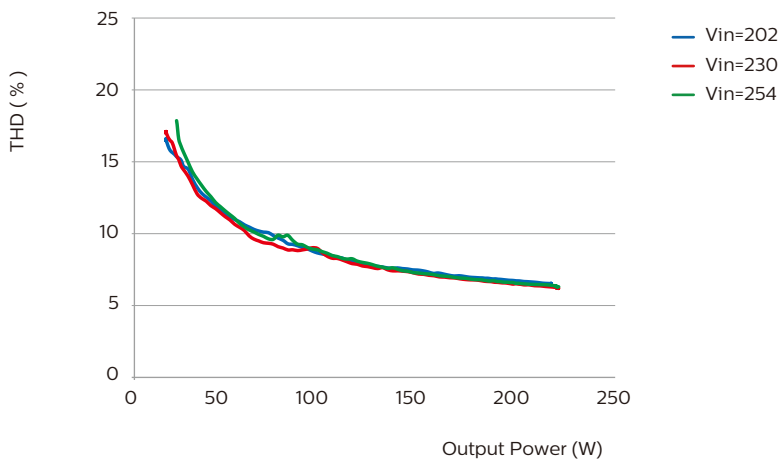
### Power factor versus output power

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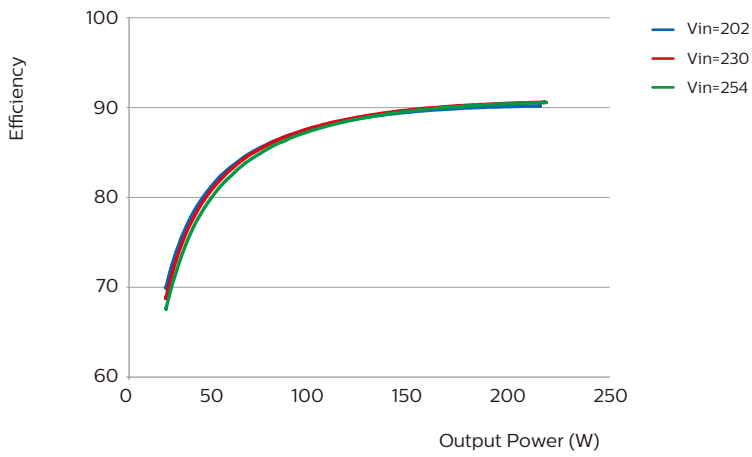


### Total Harmonic Distortion

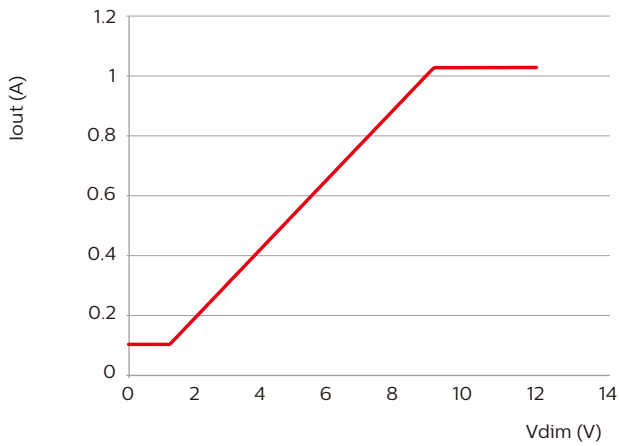
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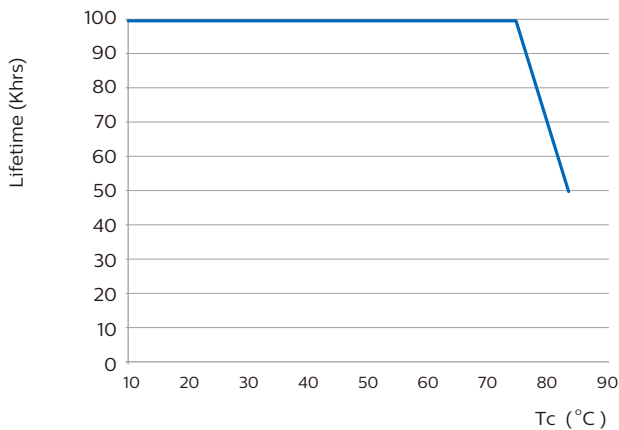
## Efficiency versus output power



## Dimming curve



## Lifetime vs Tcase



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