

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium High Bay LED Drivers Dimmable (1-10V) Independent

Xi 100W 0.7-1.0A 1-10V 220-240V RI132S

9290 021 99980

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 approbation and application requirements.

Benefits

- Reliable and robust design, capable of withstanding harsh industrial operating conditions
- Enable highest efficiencies to your luminaire based on advanced technology
- Wide flexibility to adjust light output and output current
- Easy to design-in, based on superior thermal management and compact size
- Extremely long lifetime, fitting with high bay industrial applications
- Peace of mind. Backed by a 5 year warranty from a company you can trust

Features

- Independent/IP65 rated
- High efficiency
- Adjustable output current
- Dimmable through 1-10V interface
- High ambient temperature rating
- Suitable for IEC insulation Class I systems
- Authorized certificates: CE, ENEC, CB and CCC
- Long lifetime

Application

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

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	202...254	V _{ac}	Performance range
Rated input voltage	230	V _{ac}	
Rated input frequency range	50...60	Hz	Performance range
Rated input current	0.5	A	@ rated output power @ rated input voltage
Rated input power	110	W	@ rated output power @ rated input voltage
Power factor	0.95		@ rated output power @ rated input voltage
Total harmonic distortion	10	%	@ rated output power @ rated input voltage
Efficiency	93	%	@ rated output power @ rated input voltage @ max. U _{out}
Input voltage AC range	85...305	V _{ac}	Operational safety range
Input frequency AC range	47.5...63	Hz	Operational safety range
Standby Power	0.38	W	

Electrical output data

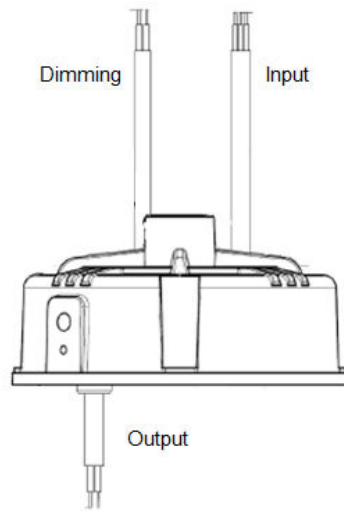
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	70...130	V _{dc}	
Output voltage max.	330	V	Maximum output voltage (rms)
Output current	0.7...1	A	
Output current min dimming	70	mA	
Output current tolerance	± 5	%	
Output current ripple LF	≤ 5	%	Ripple = peak / average, < 1kHz
Output current ripple HF	≤ 5	%	
Output P _{st} ^{LM}	≤ 0.07		In entire operating window
Output SVM	≤ 0.07		In entire operating window
Output power	0.7...100	W	

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

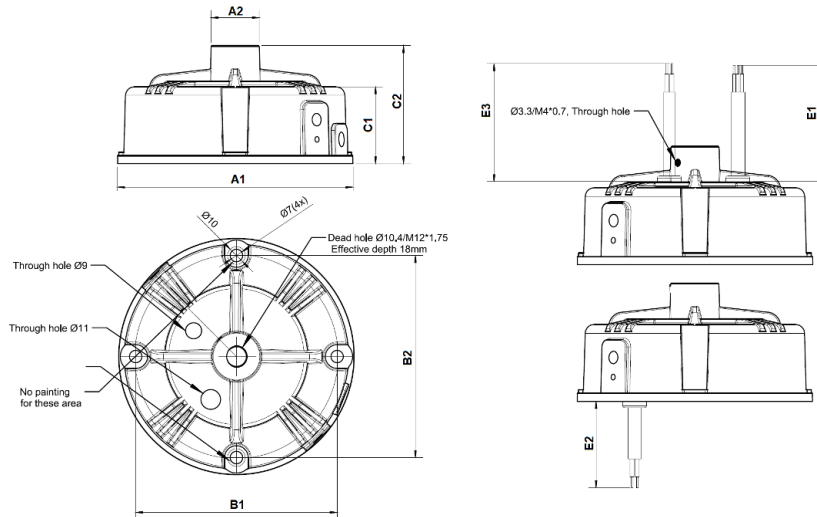
Wiring and Connections

Specification item	Value	Unit	Condition
Input wire cross-section	1	mm ²	3x 1.04mm ² stranded wires, waterproof cable
Output wire cross-section	1	mm ²	2x 1.04mm ² stranded wires, waterproof cable
Control wire cross-section	0.35	mm ²	2x 0.35mm ² stranded wires, waterproof cable
Maximum cable length	300	mm	Total length of wiring including LED module, one way



Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	132	mm	
Width (B1)	113	mm	
Width (B2)	113	mm	
Height (C1)	43	mm	
Height (C2)	66	mm	
Fixing hole distance (A2)	27	mm	
Input cable length (E1)	300	mm	
Output cable length (E2)	300	mm	
Control cable length (E3)	300	mm	
Weight	1130	gram	



Logistical data

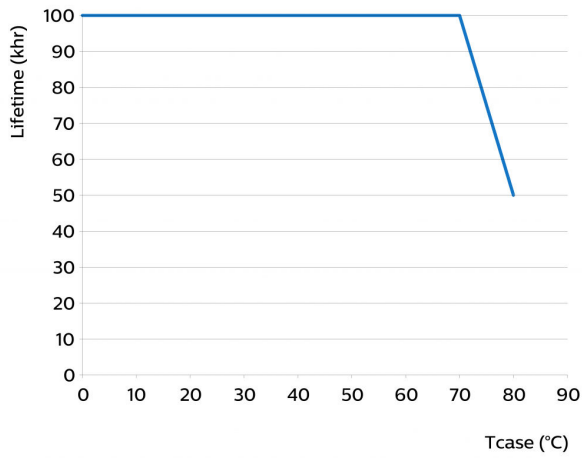
Specification item	Value
Product name	Xi 100W 0.7-1.0A 1-10V 220-240V RI132S
Logistic code 12NC	9290 021 99980
Pieces per box	12

Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+70	°C	Higher ambient temperature allowed as long as T _{case-max} is not exceeded
Starting Ambient temperature	-40...+70	°C	
T _{case-max}	80	°C	Maximum temperature measured at T _{case-point}
T _{case-life}	70	°C	Measured at T _{case-point}
Maximum housing temperature	110	°C	In case of a failure, inherent by design
Relative humidity	10...90	%	Non-condensing

Lifetime

Specification item	Value	Unit	Condition
Driver lifetime	50,000	hours	Measured temperature at Tcase-point is Tcase-max. Maximum failures = 10%



Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+85	°C	
Relative humidity	5...95	%	Non-condensing

Programmable features

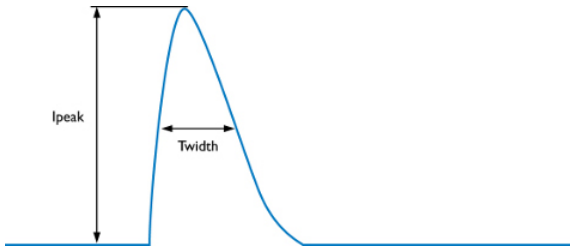
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)		770 mA	

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

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	53	A	Input voltage 230V
Inrush current T_{width}	182	μ s	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 15	pcs	Indicative value



MCB	Rating	Relative number of LED drivers
B	4A	25%
B	6A	40%
B	10A	63%
B	13A	81%
B	16A	100% (stated in datasheet)
B	20A	125%
B	25A	156%
B	32A	200%
B	40A	250%
C	4A	42%
C	6A	63%
C	10A	104%
C	13A	135%
C	16A	170%
C	20A	208%
C	25A	260%
C	32A	340%
C	40A	415%

Driver touch current / protective conductor current

Specification item	Value	Unit	Condition
Typical Protective Conductor Current (ins. Class I)	2	mA rms	Acc. IEC60598-1. LED module contribution not included

Surge immunity

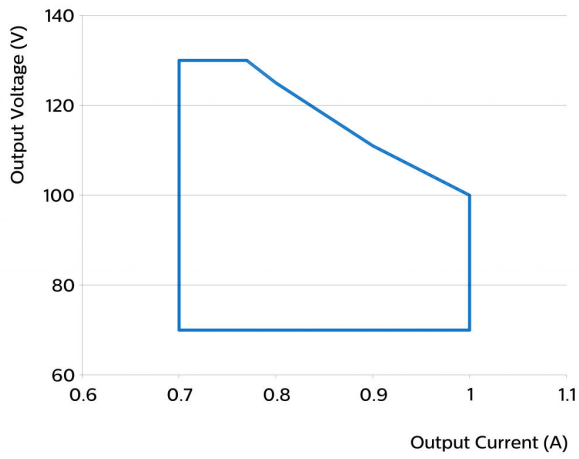
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	4	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	4	kV	Acc. IEC61000-4-5. 12 Ohm 1.2/50us,8/20us

Application Info

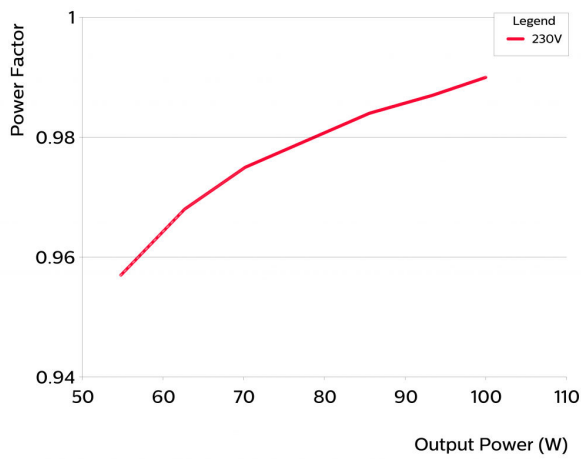
Specification item	Value
Approval marks	CB / CCC / CE / ENEC / RCM
Ingress Protection classification (IP)	65

Graphs

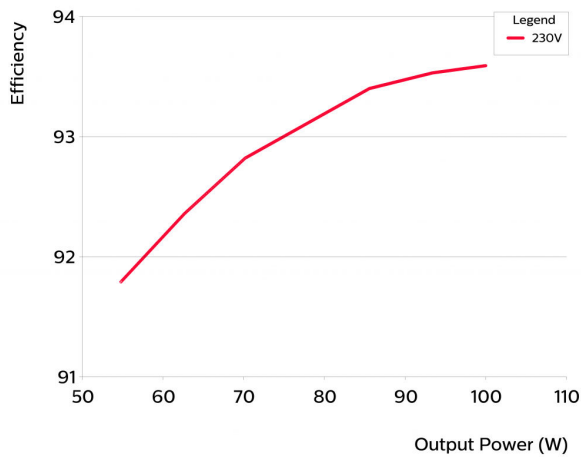
Operating window



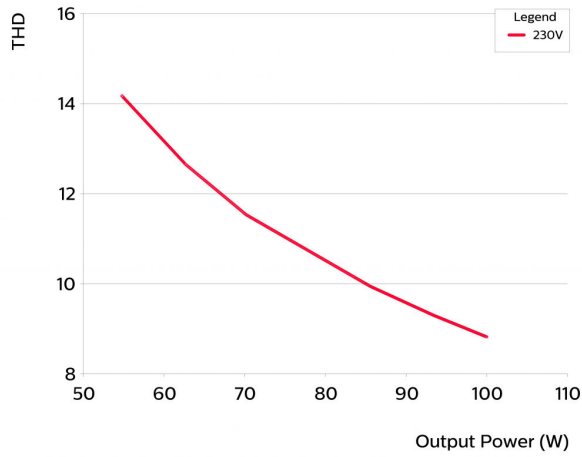
Power factor versus output power



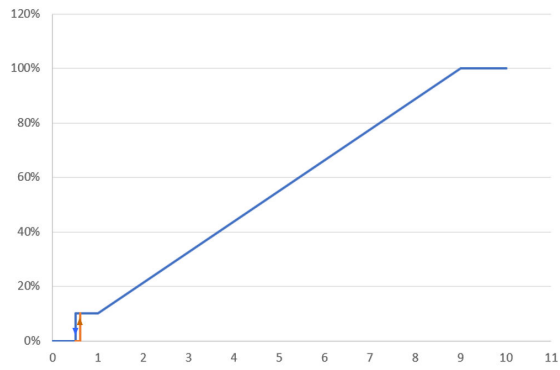
Efficiency versus output power



THD versus output power



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



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