

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium Xtreme LED Drivers Dimmable (1-10V)

Xitanium 75W 0.70A 1-10V 230V C165 sXt

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. Philips Xitanium Dimmable (1-10V) LED Xtreme Drivers for Outdoor and Industry applications are specifically designed to deliver reliable performance and protection while meeting the strict performance, approbation and application requirements.

Benefits

- Reliable
- Robust design
- Long lifetime
- Superior surge protection
- 5 years warranty
- Waterproof performance
- Proven robustness & reliability secure the lowest luminaire maintenance over time
- Extreme compact size, suitable for a wide range of luminaires
- Easy to design-in based on good thermal management and extra EMI margin

Features

- Proven robust and reliable electronic driver design
- Achieving highest efficiencies based on advanced technology
- Long lifetime
- Solid surge protection
- DC operation for industry applications (150W)
- Suitable for Insulation Class I and Class II luminaires
- CE, ENEC, and CB certified

Application

- Road and Street Lighting
- Tunnel Lighting
- Area and Flood Lighting
- High-bay 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	47...63	Hz	Performance range
Rated input current	0.36	A	@ rated output power @ rated input voltage
Max. input current	0.42	A	@ rated output power @ minimum performance input voltage
Rated input power	82	W	@ rated output power @ rated input voltage
Power factor	0.98		@ rated output power @ rated input voltage
Total harmonic distortion	10	%	@ rated output power @ rated input voltage
Efficiency	91	%	@ rated output power @ rated input voltage
Input voltage AC range	80...264	V _{ac}	Operational range
Input frequency AC range	45...66	Hz	Operational range
Isolation input to output	Double		

Electrical output data

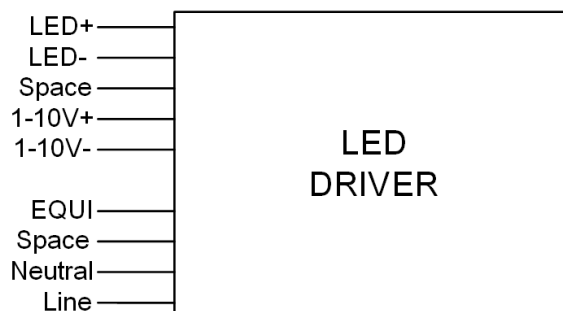
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	52...107	V _{dc}	
Output voltage max.	160	V	Peak voltage at open load
Output current	0.7	A	
Output current min dimming	70	mA	
Output current tolerance	± 5	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average
Output current ripple HF	≤ 15	%	
Output power	3.7...75	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	%	1-8V dimming curve only
Galvanic Isolation	Basic		

Logistical data

Specification item	Value
Product name	Xitanium 75W 0.70A 1-10V 230V C165 sXt
Order code	871869659598500
Logistic code 12NC	9290 014 05306
Pieces per box	10



Wiring & Connections

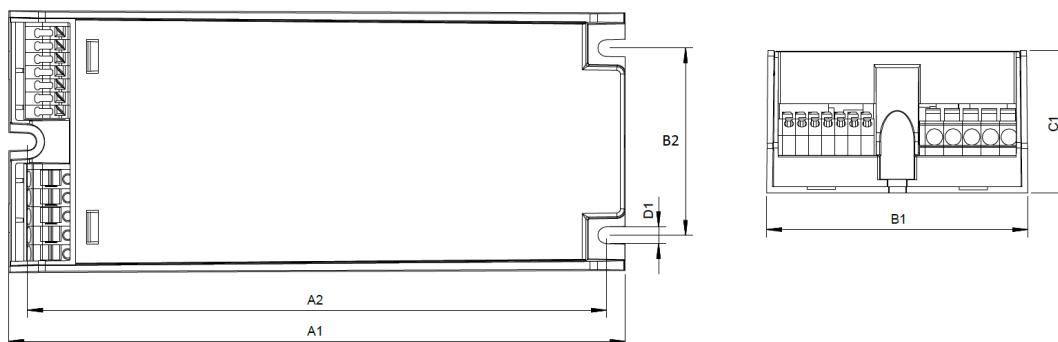
Specification item	Value	Unit	Condition
Input wire cross-section	0.5...2.5	mm ²	WAGO804, solid / stranded wire
	14...20	AWG	WAGO804, solid / stranded wire
Input wire strip length	10...11	mm	
Output wire cross-section	0.2...1.5	mm ²	WAGO250 (3.5 mm), solid / stranded wire
	16...24	AWG	WAGO250 (3.5 mm), solid / stranded wire
Output wire strip length	8.5...9.5	mm	
Dimming wire cross-section	0.2...1.5	mm ²	WAGO250 (3.5 mm), solid / stranded wire
	16...24	AWG	WAGO250 (3.5 mm), solid / stranded wire
Dimming wire strip length	8.5...9.5	mm	
Maximum cable length	2500	mm	Total length of wiring including LED module, one way

Insulation

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

Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	165	mm	
Width (B1)	70	mm	
Width (B2)	50	mm	
Height (C1)	38	mm	
Fixing hole diameter (D1)	4.5	mm	
Fixing hole distance (A2)	155	mm	
Weight	650	gram	



Operational temperatures and humidity

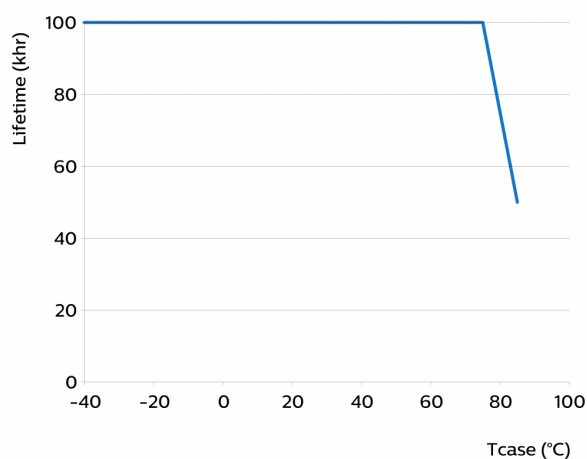
Specification item	Value	Unit	Condition
Ambient temperature	-40...+55	°C	Higher ambient temperature allowed as long as T _{case-max} is not exceeded.
T _{case-max}	85	°C	Maximum temperature measured at T _{case-point}
T _{case-life}	75	°C	Measured at T _{case-point}
Maximum housing temperature	130	°C	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	100,000	hours	Measured temperature at T_{case} -point is T_{case} -life. 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

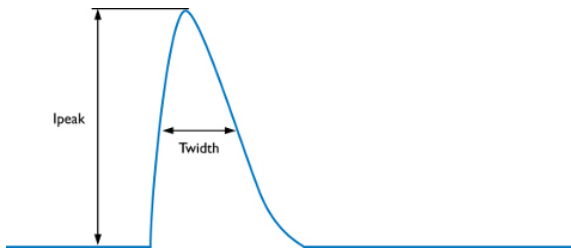
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I and II		per IEC60598
Over temperature protection driver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

Certificates and standards

Specification item	Value
Approval marks	CB / CE / ENEC
Ingress Protection classification (IP)	20

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	31	A	Input voltage 230V
Inrush current T_{width}	390	μ s	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 11	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 touch current (ins. Class II)	0.45	mA peak	Acc. IEC61347-1. LED module contribution not included
Typical protective conductor current (ins. Class I)	0.32	mA rms	Acc. IEC61347-1. LED module contribution not included

Surge immunity

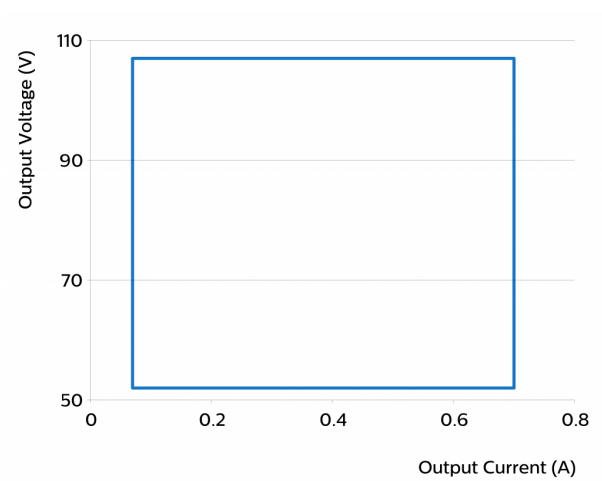
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	6	kV	L-N acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	8	kV	L/N - EQUI acc. IEC61000-4-5. 12 Ohm 1.2/50us, 8/20us
Control surge immunity (diff. mode)	0.5	kV	1-10V + - acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge immunity (comm. mode)	4	kV	1-10V - L/N acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
DALI surge immunity (comm. mode)	2.5	kV	1-10V - EQUI acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Additional information

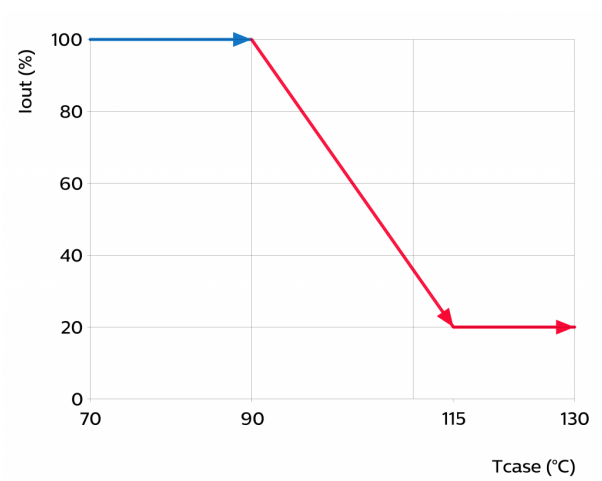
Specification item	Default setting	Remark	Condition
AOC	700	mA	
1-10V	ON		

Graphs

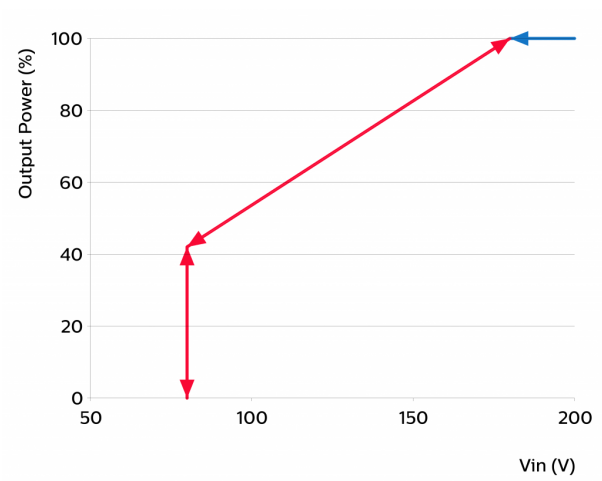
Operating window



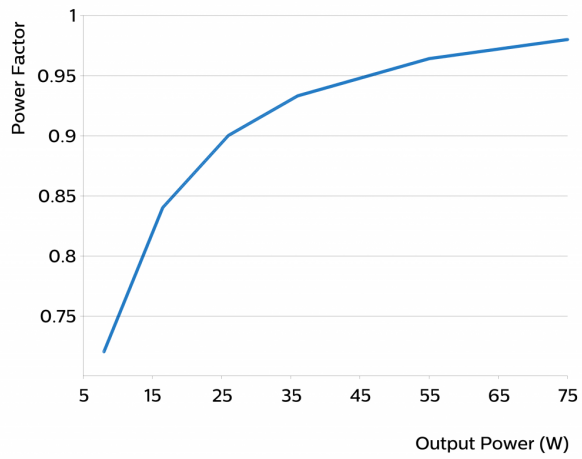
Thermal Guard



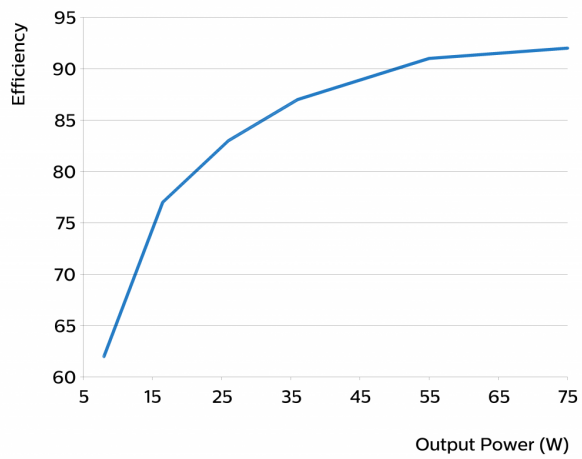
Mains Guard



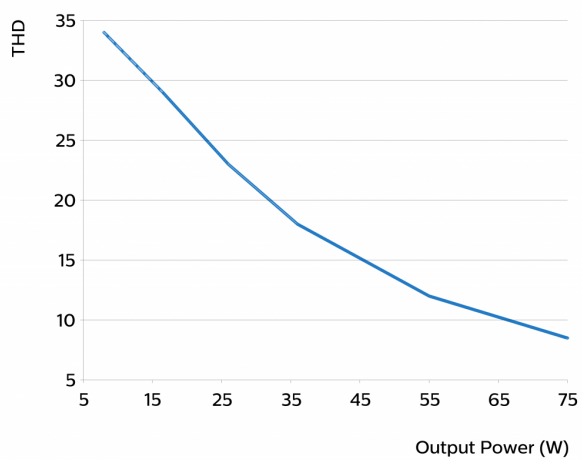
Power factor versus output power



Efficiency versus output power



THD versus output power





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