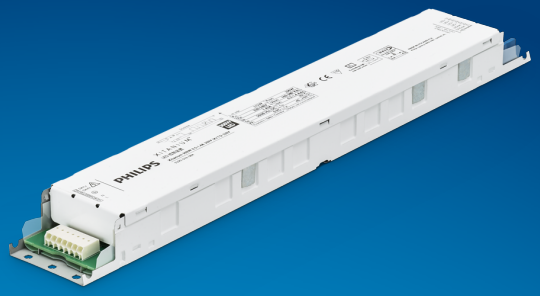
PHILIPS

Xitanium

LED driver



Datasheet

Xitanium LED drivers – linear HV non-isolated

Xitanium 300W 0.5-1.4A 300V iXt TD 230V

Enabling future-proof LED technology

Xitanium LED drivers are designed to operate LED solutions for general lighting applications such as linear lighting, as well as down lighting and spot/accent lighting.

Reliability is enhanced by specific features that protect the connected LED module, e.g. hot wiring, reduced ripple current and thermal de-rating. Most drivers feature central DC operation.

In the coming years LEDs will continue to increase in efficiency, creating generation and complexity challenges for OEMs. With Xitanium LED drivers, flexibility in luminaire design is assured thanks to an adjustable output current. Application-oriented operating windows offer the flexibility required to provide the stable lumen output and light quality levels that lighting specifiers and architects demand.

Benefits

- High reliability underpinned by 5 year warranty
- Future-proof flexibility - application-oriented operating windows enable LED generation and complexity management
- Compatibility - adjustable output current enables operation of various LED solutions from different manufacturers or OEM own designs
- Flicker and noise free dimming with all Touch and DALI LED drivers due to amplitude dimming (AM)

Features

- Up to 95% efficiency, lowest cost and smallest dimensions
- Operating windows - output current can be adjusted via the Philips MultiOne configurator (TD drivers), via Near Field Communication (SimpleSet), or with a resistor outside the driver (LEDset)
- Reduced output ripple current and thermal de-rating for increased reliability
- Multiple versions - DALI dimmable & programmable, 1-10V dimmable, and fixed-output;
- All T5 form factors but various lengths
- For the iXt versions. longer life time (100khrs), improved surge and burst (4kV) and Tambient (-40°C to +60°C) specifications

Application

- 17W, 35W, 36W, 60W and 75W LED drivers for office applications
- 100W, 150W and 300W LED drivers for industry, warehouses, public areas, distribution centers and shopping malls

March 2018

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	47.5…63	Hz	Performance range
Rated input current	1.43	A	@ rated output power @ rated input voltage
Rated input power	315	W	@ rated output power @ rated input voltage
Power factor	≥ 0.9		@ rated output power @ rated input voltage
Total harmonic distortion	≤ 20	%	@ rated output power @ rated input voltage
Efficiency	≥ 96	%	@ rated output power @ rated input voltage
Rated input voltage DC range	186…250	V_{dc}	Performance range
Rated input current DC range	≤ 1.69	A_{dc}	Performance range
Input voltage AC range	198…264	V_{ac}	Operational range
Input frequency AC range	45…66	Hz	Operational range
Input voltage DC range	168…275	V_{dc}	Operational range
Standby Power (TD)	0.3	W	Measured at 230Vac according to IEC62442-3
Isolation input to output	No		

Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	100…300	V_{dc}	
Output voltage max.	330	V	Peak voltage at open load
Output current	0.5…1.4	A	Full output current setting
Output current tolerance	± 5	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average
Output current ripple HF	≤ 4	%	
Output power	85…300	W	Full output

Electrical data controls input

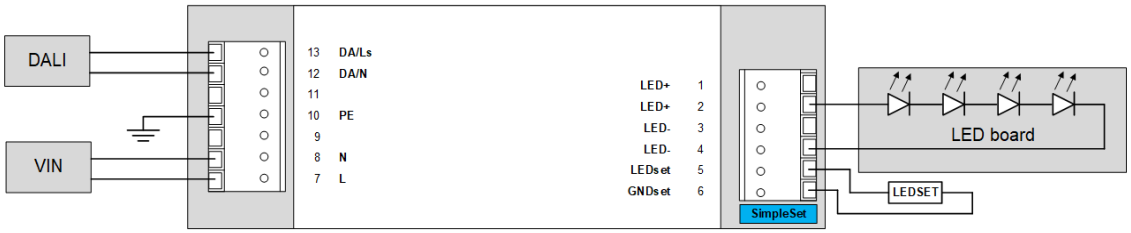
Specification item	Value	Unit	Condition
Control method	DALI, TD		
Dimming range	1…100	%	lower-25°C and higher+50°C dimming to be set to 10%
Galvanic Isolation	Basic		

Logistical data

Specification item	Value
Product name	Xitanium 300W 0.5-1.4A 300V iXt TD 230V
Logistic code 12NC	9290 016 08406
Pieces per box	12

Wiring & Connections

Specification item	Value	Unit	Condition
Input wire cross-section	0.5…1.5	mm^2	WAGO744, solid wire
	16…20	AWG	WAGO744, solid wire
Input wire strip length	8…9	mm	
Output wire cross-section	0.5…1.5	mm^2	WAGO744, solid wire
	16…20	AWG	WAGO744, solid wire
Output wire strip length	8…9	mm	
Maximum cable length	2000	mm	Total length of wiring including LED module, one way

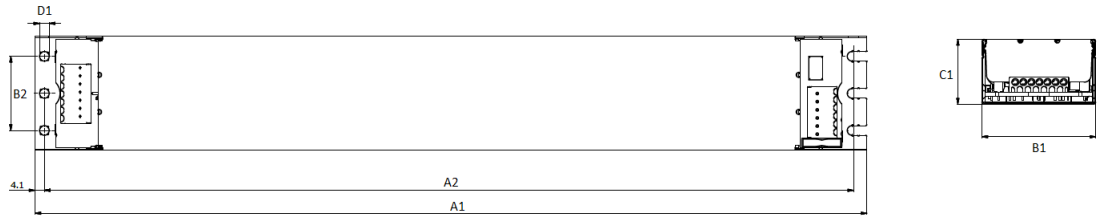


Insulation

Insulation	Input	Output	DALI	Ground
Input		Non	Basic	Basic
Output	Non		Basic	Basic
DALI	Basic	Basic		
Ground	Basic	Basic	Basic	

Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	360	mm	
Width (B1)	50	mm	
Width (B2)	32	mm	
Height (C1)	28	mm	
Fixing hole diameter (D1)	4.1	mm	
Fixing hole distance (A2)	350	mm	
Weight	470	gram	



Operational temperatures and humidity

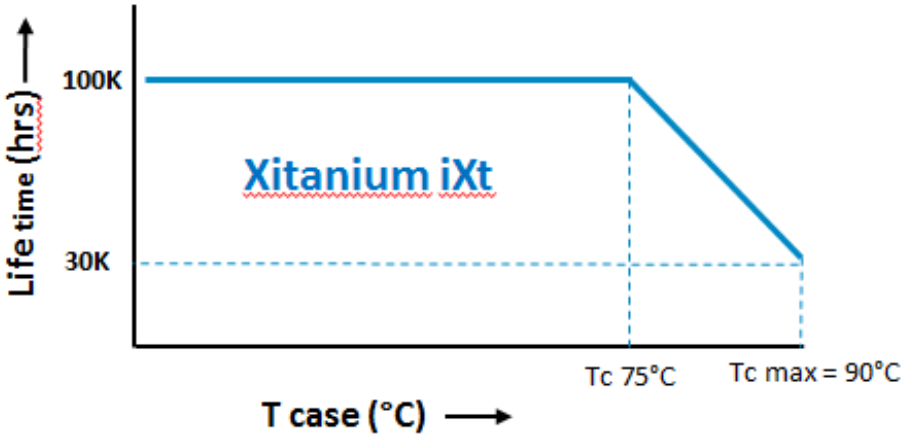
Specification item	Value	Unit	Condition
Ambient temperature	-40…+60	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded.
Tcase-max	90	°C	lifetime 30khrs;
Tcase-life	75	°C	lifetime 100khrs; Measured at T_c-point
Maximum housing temperature	110	°C	In case of a failure
Relative humidity	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%
Mains switching cycles	> 100,000	switches	See Design-in guide for detailed explanation



Programmable features

Specification item	Value	Remark	Condition
Set output current (AOC)	LEDset, Programmable, SimpleSet	See Design-in guide.	Default output current: ≤ 500 mA
LED module temperature derating (MTP)	No		
Constant Lumen Over Lifetime (CLO)	Yes		
DC emergency dimming (DCemDIM)	Yes		Current output decreased to 15%
Corridor mode	Yes	See Design-in guide	Default: T1=55s, T2=12s, T3=30min
Energy metering	Yes		
Diagnostics	Yes		

Features

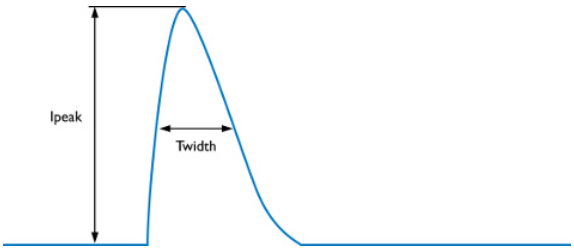
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I		per IEC60598

Certificates and standards

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

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	15.3	A	Input voltage 230V
Inrush current T_{width}	61	µs	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 8	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

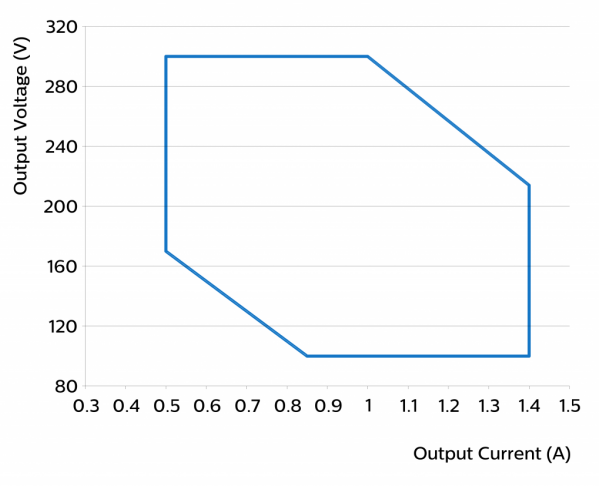
Specification item	Value	Unit	Condition
Typical protective conductor current (ins. Class I)	< 0.182	mA rms	Acc. IEC61347-1. LED module contribution not included

Surge immunity

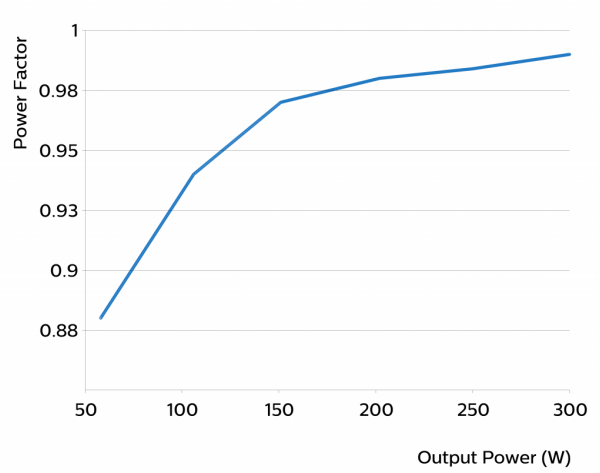
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	2	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	4	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Graphs

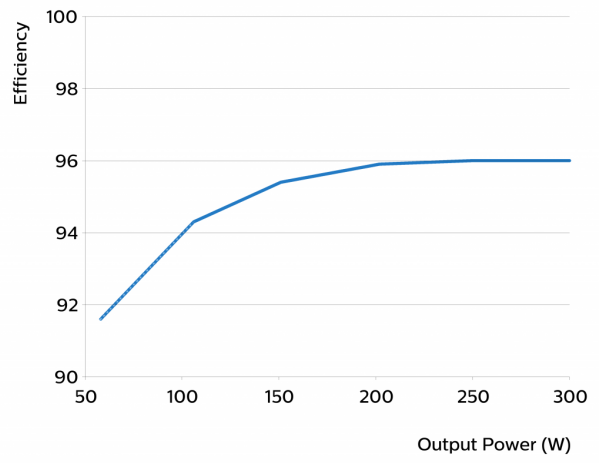
Operating window



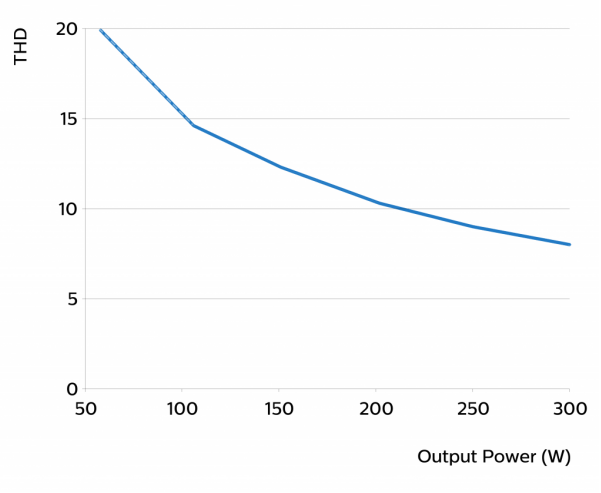
Power factor versus output power



Efficiency versus output power



THD versus output power



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