

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium LED drivers – linear HV non-isolated iXt

Xitanium 110W 0.2-0.6A 215V TD 230V iXt

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
- Compatibility - adjustable output current enables operation of various LED solutions from different manufacturers or OEMs own designs
- More robust LED drivers for industry applications
- 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) or with a resistor outside the driver
- Reduced 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
- Longer life time (100khrs), improved surge and burst (4kV) and Tambient (-40°C to +60°C) specifications

Application

- 17W, 36W and 75W LED drivers for office applications
- 110W and 150W LED drivers for industry, warehouses, public areas, distribution centers and shopping malls

Electrical input data

Specification item	Value	Unit	Condition
Nominal input voltage	220...240	V _{ac}	performance range
Nominal input frequency	50...60	Hz	
Nominal input current	0.52	A	@230V @ full load
Input voltage	230	V _{ac}	
Nominal input power	117	W	@230V @ full load
Power factor	≥ 0.9		@ full load. See graph.
Total harmonic distortion	≤ 20	%	@ full load. See graph.
Efficiency	93	%	@230V @ full load
Nominal input voltage DC	186...250	V _{dc}	
Nominal input current DC	0.58	A	Input voltage 230 V _{dc} , full load
Input voltage AC	202...254	V _{ac}	Operational range
Input frequency AC	47.5...63	Hz	Maximum permissible range
Input voltage DC	168...275	V _{dc}	Maximum permissible range
Standby power	0.5	W	
Isolation Input to Output	No		

Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	100...215	V _{dc}	
Output voltage max.	280	V	Peak voltage at open load
Output current	0.2...0.6	A	Full output current setting
Output current tolerance	± 5	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average
Output power	31...110	W	Full output
Dynamic Resistance	0.25	Ω	typical

Electrical data controls input

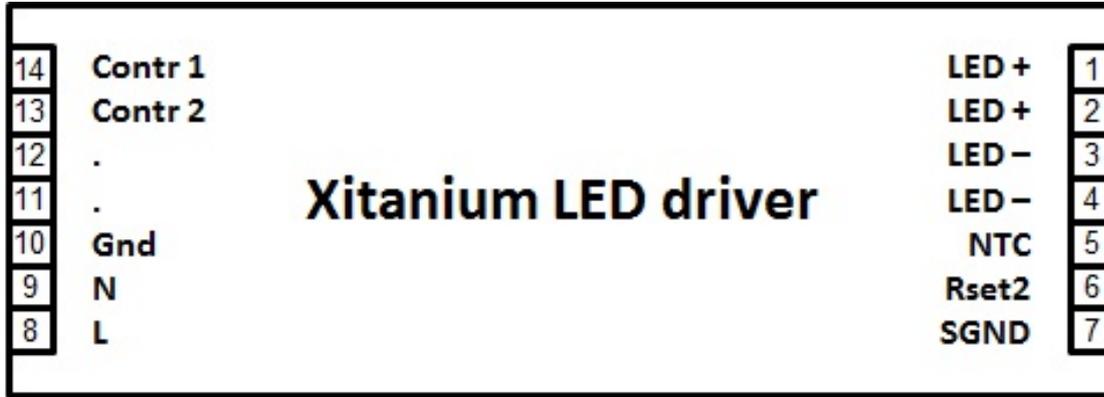
Specification item	Value	Unit	Condition
Control method	Touch and DALI dimming		
Dimming range	1...100	%	lower-20°C and higher+50°C dimming to be set to 10%

Logistical data

Specification item	Value
Product name	Xitanium 110W 0.2-0.6A 215V TD 230V iXt
Order code	871829173629500
Logistic code 12NC	9290 008 77306
EAN3	8718291736301
Pieces per box	12

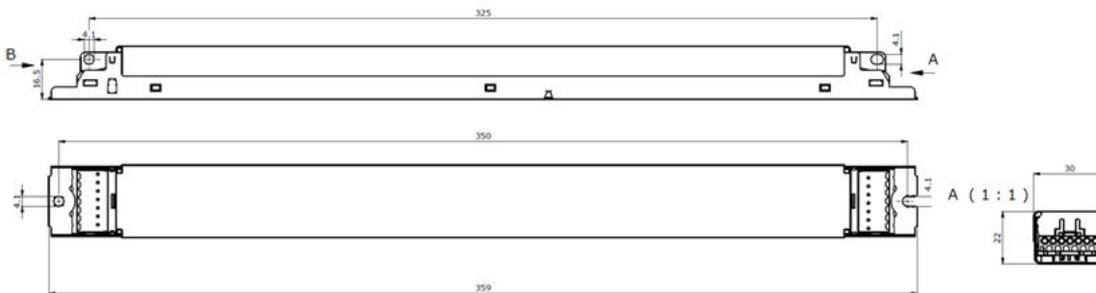
Wiring & Connections

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	4000	mm	Total length of wiring including LED module, one way



Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	360	mm	
Width (B1)	30	mm	
Height (C1)	22	mm	
Fixing hole diameter (D1)	4.1	mm	
Fixing hole distance (A2)	350	mm	
Weight	250	gram	



Operational temperatures and humidity

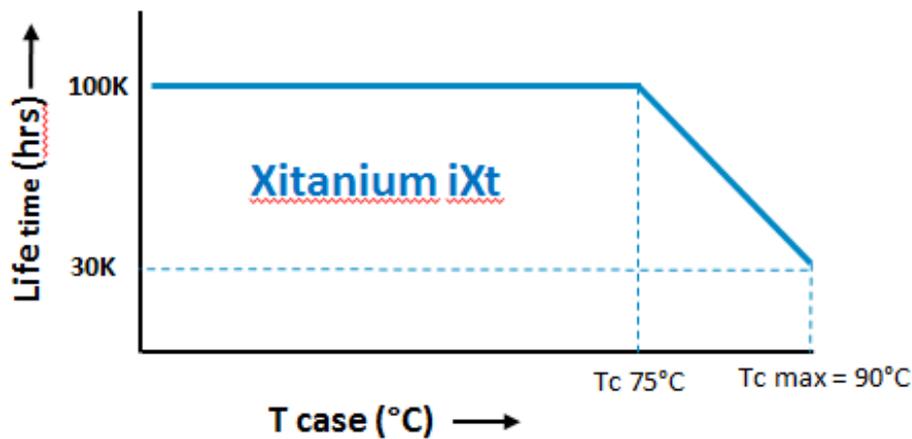
Specification item	Value	Unit	Condition
Ambient temperature	-40...+60	°C	Higher ambient temperature allowed as long as T _{case-max} is not exceeded.
T _{case-max}	90	°C	lifetime 30khrs;
T _{case-life}	75	°C	lifetime 100khrs; Measured at T _c -point
Maximum housing temperature	110	°C	In case of a failure
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)	Rset2 and Programmable	See Design-in guide.	Default output current: ≤ 200 mA
LED module temperature derating (MTP)	Yes		
Constant Lumen Over Lifetime (CLO)	Yes		
DC emergency dimming (DCemDIM)	Yes		Current output decreased to 15%
Corridor mode	Yes		
Energy metering	No		
Diagnostics	Yes		

Features

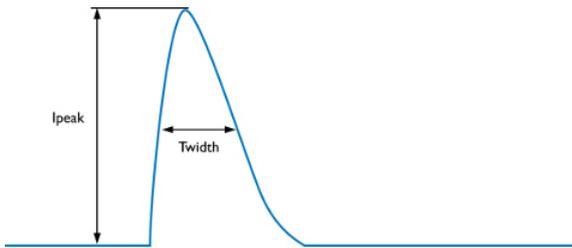
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I		per IEC60598

Certificates and standards

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

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	35	A	Input voltage 230V
Inrush current T_{width}	300	μ s	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 12	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	0.4	mA peak	Acc. IEC61347-1. LED module contribution not included

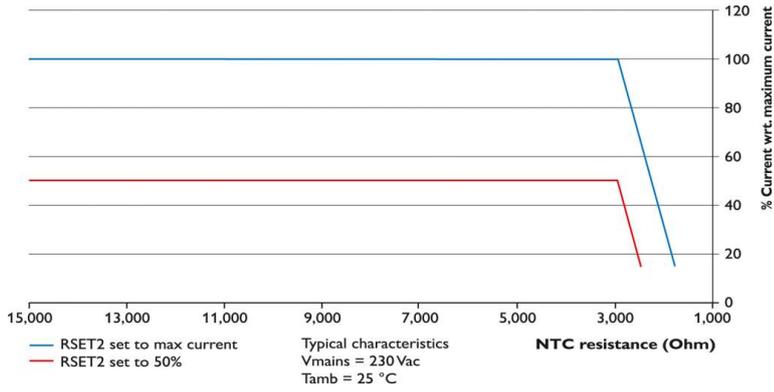
Surge immunity

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

Module Temperature Protection

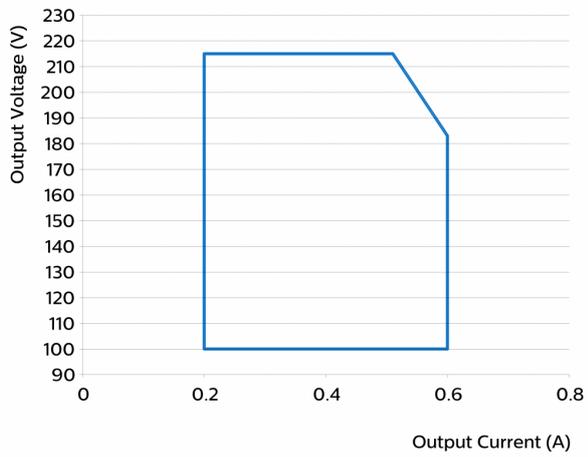
Specification item	Value	Unit	Condition
Advised NTC type	Vishay 15kOhm \pm 2%NTC	238161554153	
	Murata NCP15XW153E03RC	NCP15XW153E03RC	With 390 Ω in series
NTC resistance threshold	2966	Ω	Start limiting output current
Corresponding temperature	70	$^{\circ}$ C	With advised type 238161554153

NTC resistance versus output current

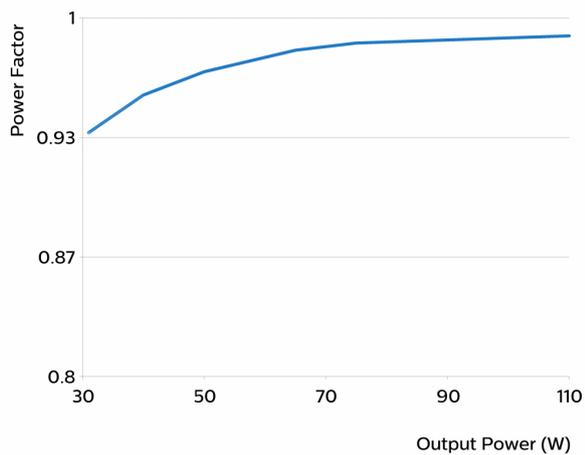


Graphs

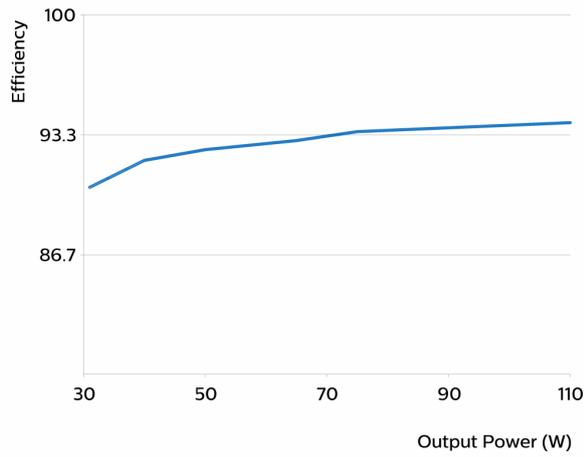
Operating window



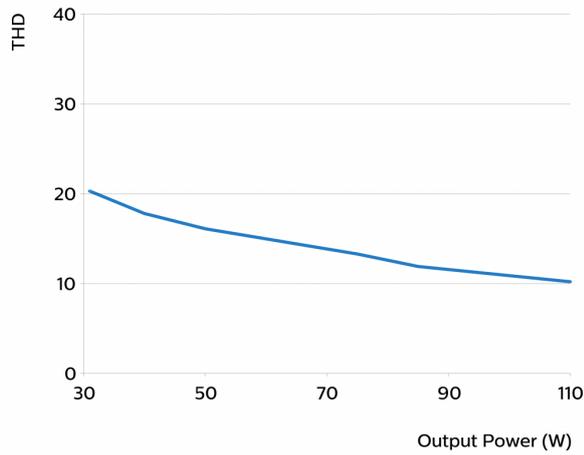
Power factor versus output power



Efficiency versus output power



THD versus output power



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