

# PHILIPS

## Xitanium

### LED driver



## Datasheet

# Xitanium LED drivers – linear HV non-isolated - Coded Light

## XI 60W 0.08-0.35A 300V TD16CL 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) 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
- Supports Coded Light 2.0 for use in YellowDot systems

### 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 <sub>ac</sub>	performance range
Nominal input frequency	50...60	Hz	
Nominal input current	0.3	A	@230V @ full load
Input voltage	230	V <sub>ac</sub>	
Nominal input power	66	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 <sub>dc</sub>	
Nominal input current DC	0.36	A	Input voltage 230 V <sub>dc</sub> , full load
Input voltage AC	202...254	V <sub>ac</sub>	Operational range
Input frequency AC	47.5...63	Hz	Operational range
Input voltage DC	168...275	V <sub>dc</sub>	Maximum permissible range
Standby power	0.3	W	
Isolation Input to Output	No		

## Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	100...300	V <sub>dc</sub>	
Output voltage max.	330	V	Peak voltage at open load
Output current	0.08...0.35	A	Full output current setting
Output current tolerance	± 5	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average
Output current ripple HF	≤ 4	%	
Output power	17...60	W	Full output

## Electrical data controls input

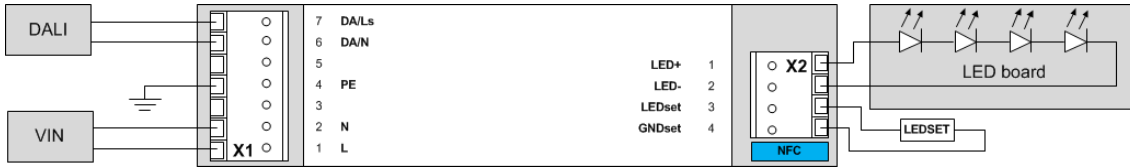
Specification item	Value	Unit	Condition
Control method	TD		
Dimming range	1...100	%	≥ 200mA 1% dimming; < 200mA min. current 2.0mA
Galvanic Isolation	Basic		

## Logistical data

Specification item	Value
Product name	XI 60W 0.08-0.35A 300V TD16CL 230V
Order code	
Logistic code 12NC	9290 015 53706
EAN3	8718 6966 98907
Pieces per box	24

## Wiring & Connections

Specification item	Value	Unit	Condition
Input wire cross-section	0.5...1.5	mm <sup>2</sup>	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 <sup>2</sup>	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

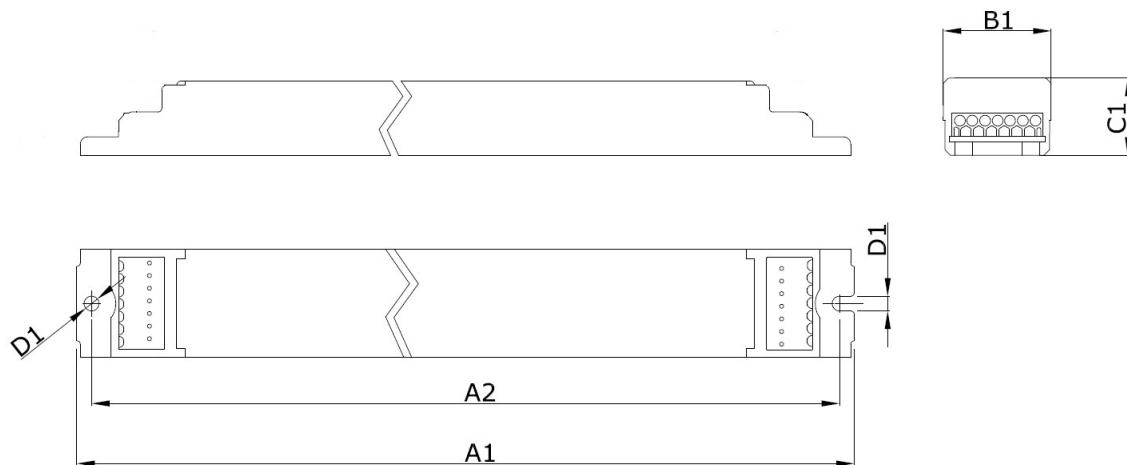


## Insulation

Insulation	input	output	DALI	PE
input		Non	Basic	Basic
output	Non		Basic	Basic
DALI	Basic	Basic		Basic
PE	Basic	Basic	Basic	

## Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	280	mm	
Width (B1)	30	mm	
Height (C1)	16	mm	
Fixing hole diameter (D1)	4.1	mm	
Fixing hole distance (A2)	270	mm	
Weight	180	gram	



## Operational temperatures and humidity

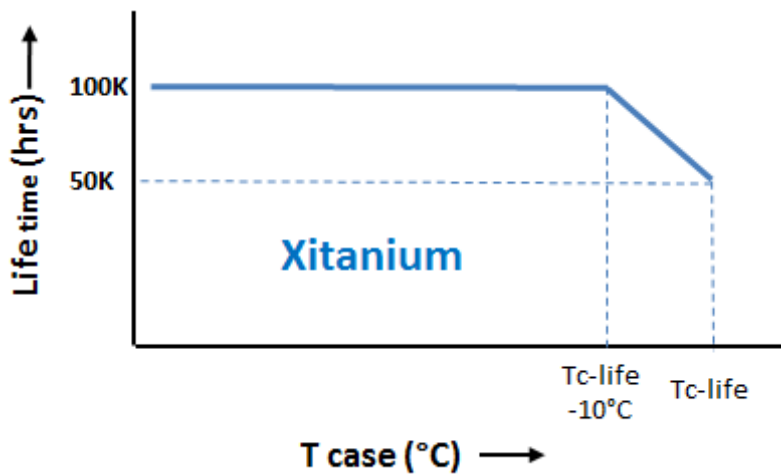
Specification item	Value	Unit	Condition
Ambient temperature	-25...+50	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded.
Tcase-max	75	°C	lifetime 50khrs;
Tcase-life	75	°C	Measured at T <sub>case</sub> -point
Maximum housing temperature	110	°C	In case of a failure
Relative humidity	10...90	%	Non-condensing

## Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-25...+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> -life. Maximum failures = 10%
Mains switching cycles	> 50,000	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: ≤ 80 mA
LED module temperature derating (MTP)	No		
Constant Lumen Over Lifetime (CLO)	Yes		
DC emergency dimming (DCemDIM)	Yes		Default: Current output decreased to 15%
Corridor mode	Yes		
Energy metering	Yes		Accuracy 10%
Diagnostics	Yes		

## Features

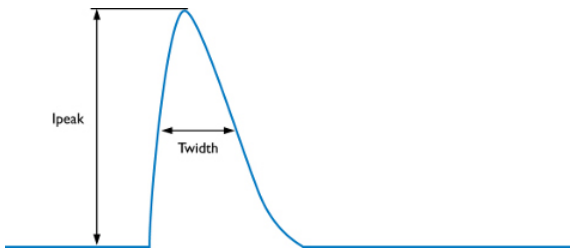
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I		per IEC60598

## Certificates and standards

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

## Inrush current

Specification item	Value	Unit	Condition
Inrush current $I_{peak}$	21	A	Input voltage 230V
Inrush current $T_{width}$	280	$\mu s$	Input voltage 230V, measured at 50% $I_{peak}$
Drivers / MCB 16A type B	$\leq 24$	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	< 0.5	mA peak	Acc. IEC60598-1. LED module contribution not included

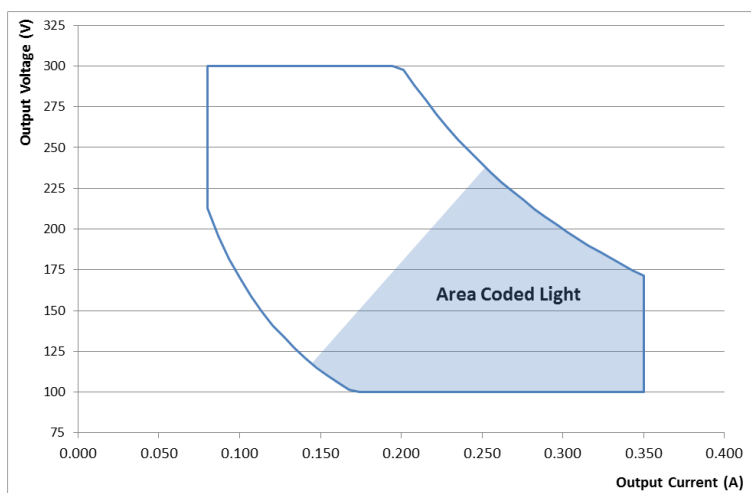
## Surge immunity

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

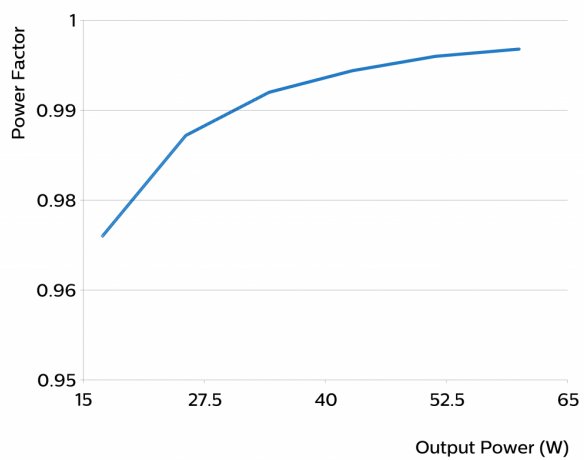
### Operating window

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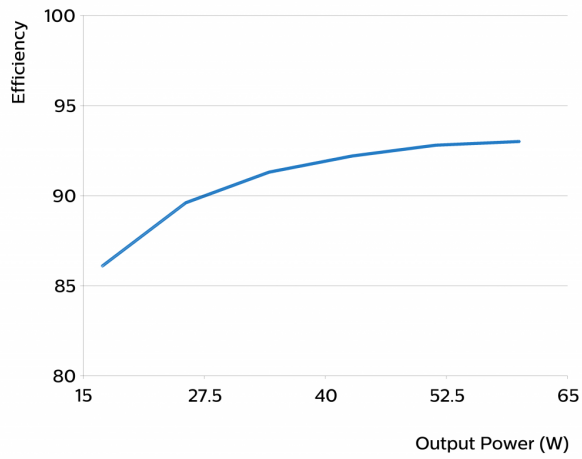
### Power factor versus output power

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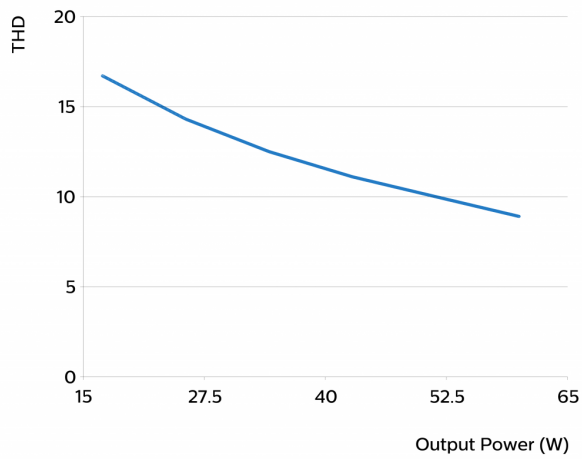
## Efficiency versus output power

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## THD versus output power

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