

# Xitanium LED drivers – linear HV non-isolated

## Xitanium 36W 0.12-0.40A 110V TD 230V

March 3, 2015



### 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 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)

### Product 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

### Applications

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



# PHILIPS

## Electrical input data

Specification item	Value	Unit	Condition
Nominal input voltage	220...240	V <sub>ac</sub>	
Nominal input frequency	50...60	Hz	
Nominal input current	0.18	A	Input voltage 230 V <sub>ac</sub> , full load
Nominal input power	40	W	Input voltage 230 V <sub>ac</sub> , full load
Power factor	≥ 0.9		Input voltage 230 V <sub>ac</sub> , full load
Total harmonic distortion	≤ 20	%	Input voltage 230 V <sub>ac</sub> , full load
Efficiency	89	%	Input voltage 230 V <sub>ac</sub> , full load, maximum output power
Nominal input voltage DC	186...254	V <sub>dc</sub>	
Nominal input current DC	0.22	A	Input voltage 230 V <sub>dc</sub> , full load
Input voltage AC	202...250	V <sub>ac</sub>	Performance range
Input frequency AC	45...66	Hz	Maximum permissible range
Input voltage DC	168...275	V <sub>dc</sub>	Maximum permissible range

## Electrical output data

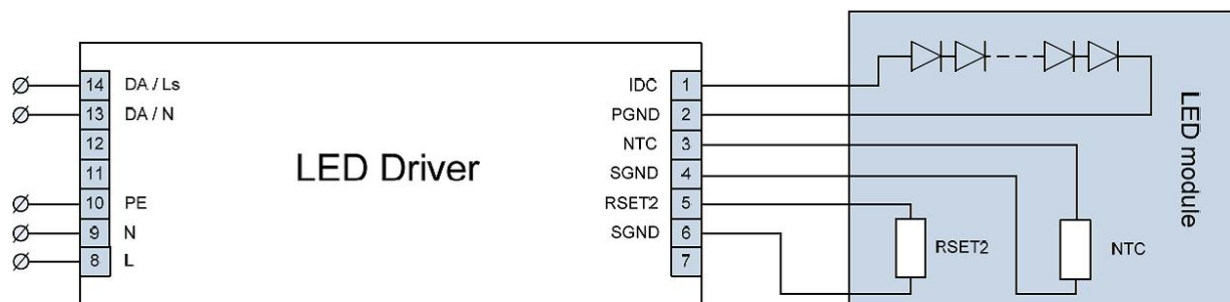
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	50...110	V <sub>dc</sub>	
Output voltage max.	275	V	Peak voltage at open load
Output current	0.12...0.4	A	Full output current setting
Output current tolerance	± 5	%	
Output current ripple	≤ 4	%	Ripple (100Hz) = peak / average
Output power	10...36	W	Full output
Galvanic isolation	No		Lamp to mains

## Electrical data controls input

Specification item	Value	Unit	Condition
Control method	Touch and DALI dimming		
Dimming range	1...100	%	>300mA 1% dimming; < 300mA min. current 3mA
Galvanic isolation	Basic		Control input to mains

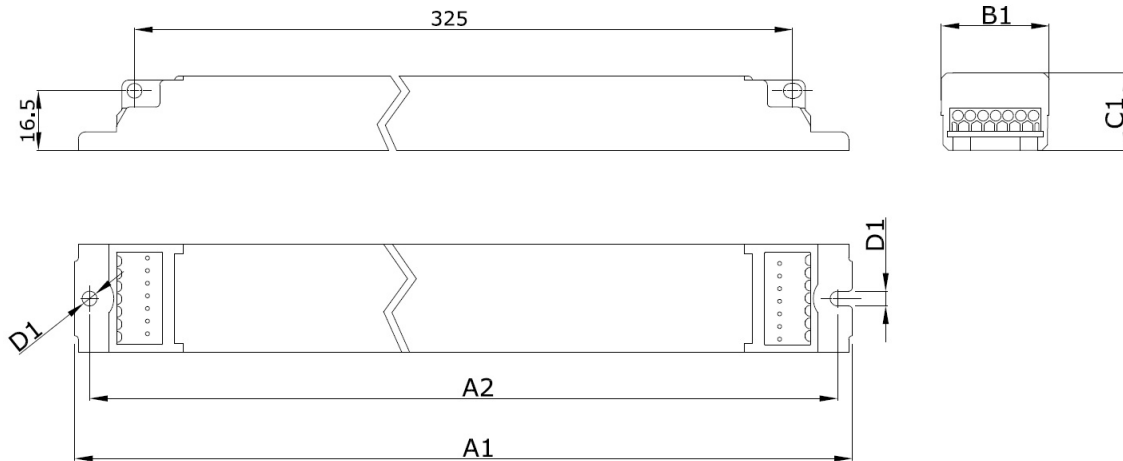
## Wiring

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	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	248	gram	



## Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20...+50	°C	
T <sub>case-max</sub>	75	°C	Maximum temperature measured at T <sub>c</sub> -point
T <sub>case-life</sub>	75	°C	Measured at T <sub>c</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>c</sub> -point is T <sub>case-life</sub> . Maximum failures = 10%

## Programmable features

Specification item	Value	Remark	Condition
Set output current (AOC)	Rset2	See Design-in guide. Default output current: 0.12 A	
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		

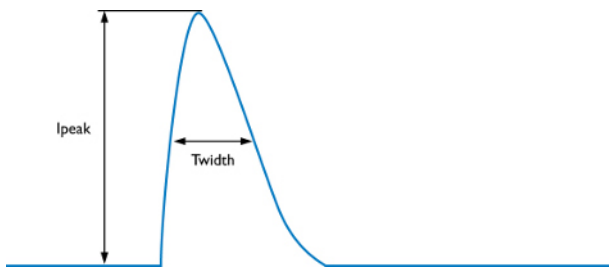
## Certificates and standards

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

## Additional information

### Inrush current

Specification item	Value	Unit	Condition
Inrush current $I_{peak}$	14.7	A	Input voltage 230V
Inrush current $T_{width}$	250	$\mu$ s	Input voltage 230V, measured at 50% $I_{peak}$
Drivers / MCB 16A type B	$\leq 38$	pcs	



### Earth leakage current

Specification item	Value	Unit	Condition
Earth leakage current	0.4	mA <sub>pk</sub>	LED module contribution not included

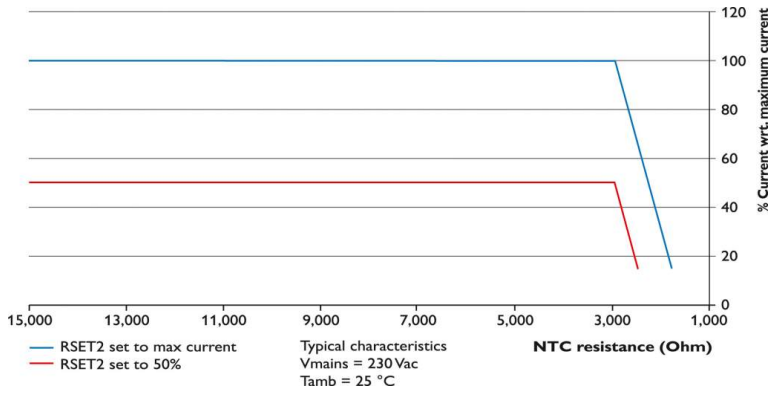
### Surge capability

Specification item	Value	Unit	Condition
Mains surge capability (L-N)	1	kV	
Mains surge capability (L/N-Ground)	2	kV	
Control surge capability (L-N)	1	kV	
Control surge capability (L/N-Ground)	2	kV	

### NTC thermistor

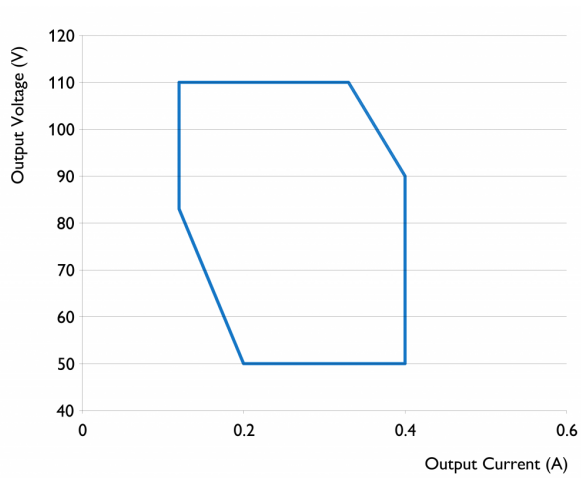
Specification item	Value	Unit	Condition
Advised NTC type	Vishay 15K	238161554153	
	Murata	NCP15XW153E03RC	With 390 $\Omega$ in series
NTC resistance threshold	2966	$\Omega$	Start limiting output current
Corresponding temperature	70	$^{\circ}$ C	With advised type 238161554153

### NTC resistance versus output current

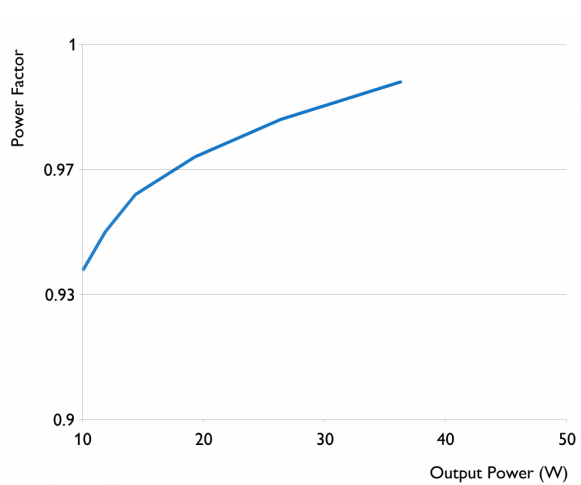


### Graphs

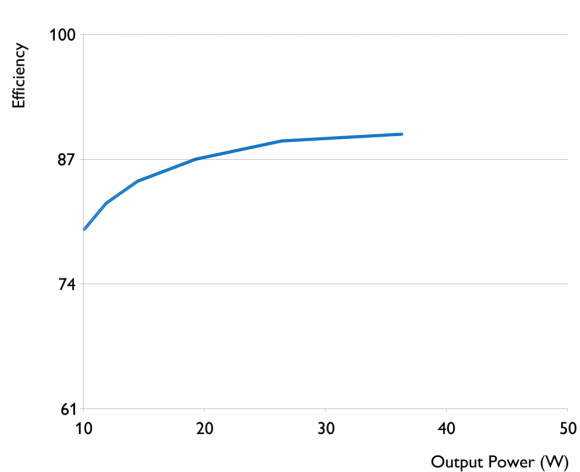
#### Operating window



#### Power factor versus output power



## Efficiency versus output power



## Logistical data

Specification item	Value
Product name	Xitanium 36W 0.12-0.40A 110V TD 230V
Order code	871829168404600
Logistic code 12NC	9290 008 52203
EAN3	8718291684053
Pieces per box	12



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[www.philips.com/xitanium](http://www.philips.com/xitanium)