

# PHILIPS

## Xitanium

### LED driver



## Datasheet

### Xitanium LED drivers – linear LV isolated

Xitanium 75W 0.7-2.0A 54V TD S 230V G2

9290 029 57706

#### 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 downlighting and spot/accent lighting.

High reliability underpinned by 5 year warranty, enhanced by specific features that protect the connected LED module, e.g. reduced ripple current and thermal derating. 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. And the adjustable output current also enables operation of various LED PCB solutions from different manufacturers.

#### Features

- Simpler approval process and easy design-in
- Operating windows - output current configurable via DALI or SimpleSet by means of Philips MultiOne software
- Reduced ripple current and thermal derating for increased reliability
- Power ratings: 36W and 75W
- DALI dimmable & programmable

#### Benefits

- High reliability underpinned by 5 year warranty
- Future-proof flexibility - application-oriented operating windows enable LED generation and complexity management
- Compatibility - can also be used for other manufacturers' modules or OEMs' own PCB designs
- Flicker and noise free dimming with all Touch and DALI LED drivers due to amplitude dimming (AM)

#### Application

- Offices
- Industry
- Supermarkets / Retail

Logistical data

Specification item	Value
Product name	Xitanium 75W 0.7-2.0A 54V TD S 230V G2
EOC	872016920530700
Logistic code 12NC	9290 029 57706
EAN1 (GTIN)	8720169205307
EAN3 (box)	8720169205314
Pieces per box	24

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	220...240	V <sub>ac</sub>	Performance range
Rated input voltage	230	V <sub>ac</sub>	
Rated input frequency	50...60	Hz	Performance range
Rated input current	0.38	A	@ full output power @ rated input voltage
Rated input power	86.0	W	@ rated output power @ rated input voltage
Power factor performance range	≥ 0.9 C		@ rated output power @ rated input voltage
Total harmonic distortion	20	%	@ rated output power @ rated input voltage
Total harmonic distortion, best value	3.6	%	@ full output power @ rated input voltage
Efficiency	89.5	%	@ full output power @ rated input voltage @ max. I <sub>out</sub>
Rated input voltage DC	186...250	V <sub>dc</sub>	Performance range (No external DC fuse is required)
Rated input current DC	≤ 0.38	A <sub>dc</sub>	Performance range
Input voltage AC	198...264	V <sub>ac</sub>	Operational range
Input frequency AC	45...66	Hz	Operational range
Input voltage DC	168...275	V <sub>dc</sub>	Operational range
Standby Power (no load)	0.3	W	
Isolation input to output	SELV		

Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	27...54	V <sub>dc</sub>	
Output voltage max.	60	V	Maximum output voltage (rms)
Output current	700...2000	mA	
Output current min programmable	700	mA	
Min output current	14	mA	
Output current tolerance ±	5	%	@full load
Output current ripple LF	≤ 4	%	Ripple = peak / average, < 3kHz
Output current ripple LF	≤ 1.5	%	@100Hz
Output current ripple HF	≤ 4	%	
Output P <sub>st</sub> <sup>LM</sup>	≤ 1.0		
Output SVM	≤ 0.6		
Output power	0.3...75.0	W	
Minimum performance output power	21	W	Power factor > 0.9 and THD < 20%

Control interfaces

Specification item	Value	Unit	Condition
Control method	Corridor Mode, DALI, Touch & Dim (TD)		
Dimming range	1...100	%	>1400mA 1% dimming; < 1400mA min. current 14mA
Isolation controls input to output	SELV		acc. IEC61347-1
Supported DALI parts	251, 252, 253		Check website: <a href="https://www.dali-alliance.org/dali/standards.html">https://www.dali-alliance.org/dali/standards.html</a> for details.

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.5...1.5 / 20...16	mm² / AWG	WAGO744, solid wire
Input wire strip length	8...9	mm	
Output wire cross-section	0.5...1.5 / 20...16	mm² / AWG	WAGO744, solid wire
Output wire strip length	8...9	mm	
Control wire cross-section	0.5...1.5 / 20...16	mm² / AWG	WAGO744, solid wire
Control wire strip length	8...9	mm	
Maximum cable length	2	m	Total length of wiring including LED module, one way

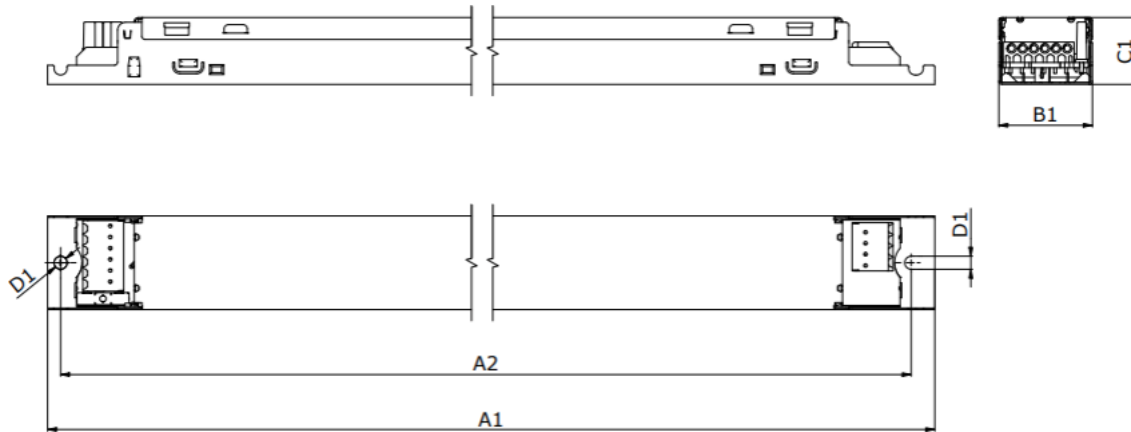


Isolation

Insulation per IEC61347-1	Input	Output	DALI	Housing
Input	-	SELV	Basic	Basic
Output	SELV	-	SELV	Basic
DALI	Basic	SELV	-	Basic
Housing	Basic	Basic	Basic	-

## Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	360	mm	
Mounting hole distance (A2)	350	mm	
Width (B1)	30	mm	
Height (C1)	21	mm	
Mounting hole diameter (D1)	4.1	mm	
Weight	278	gram	
Housing color	White		

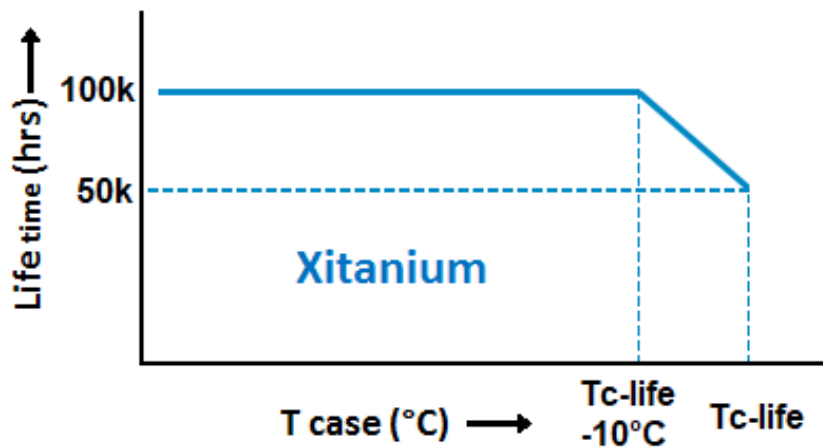


## Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-25...+50	°C	Higher ambient temperature allowed as long as T <sub>case-max</sub> is not exceeded
T <sub>case-max</sub>	75	°C	Maximum temperature measured at T <sub>case-point</sub>
T <sub>case-life</sub>	65	°C	Measured at T <sub>case-point</sub>
Maximum housing temperature	110	°C	In case of a failure, inherent by design
Relative humidity	10...90	%	Non-condensing

## Lifetime

Specification item	Value	Unit	Condition
Driver lifetime	100,000	hours	Measured temperature at T <sub>case-point</sub> is T <sub>case-life</sub> . Maximum failures = 10%
Mains switching cycles	> 100,000	switches	See Design-in guide for detailed explanation



Maximum failures = 10%

Temperature [°C]	Lifetime	Unit	Condition
75	50000	hr	Temperature measured @Tc point
70	71000	hr	
65	100000	hr	
60	>100000	hr	
55	>100000	hr	

#### Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-25...+85	°C	
Relative humidity	5...95	%	Non-condensing

#### Programmable features

Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	SimpleSet	700 mA	
Adjustable Light Output (ALO)	Yes	OFF	
Constant Light Output (CLO)	Yes	OFF	
Touch & Dim (TD)	Yes	ON	
Corridor Mode	Yes	ON	Default: T1=55s, T2=12s, T3=30min
Min Dim Level	Yes	1 %	
DC emergency (DCemDim)	Yes	ON	Current output decreased to 15%
OEM Write Protection (OWP)	Yes	OFF	
Luminaire Info (DALI part 251)	Yes	—	
Luminaire maintenance (DALI part 253)	Yes	—	

## Non-programmable features

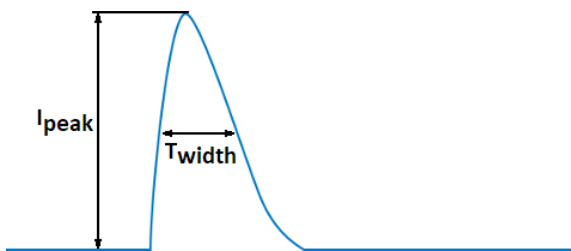
Specification item	Value		Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I		per IEC60598
Energy metering (DALI part 252)	Yes		Accuracy 10%
Diagnostics (DALI part 253)	Yes		
Diagnostics via Signify tool	Yes		

## Inrush current

Specification item	Value	Unit	Condition
Inrush current	24.9	A	Input voltage 230V
Inrush peak width	249	μs	Input voltage 230 V, measured at 50% height
Drivers / MCB 16A type B	≤ 18	pcs	Input voltage 230V/230

Please refer to the driver design in guide if you use other MCB-types.

If several mini circuit breakers are used directly side-by-side (without distance pieces)  
a correction factor of 80% has to be applied to the rated current



## Driver touch current / protective conductor current / earth leakage current

Specification item	Value	Unit	Condition
Typical Protective Conductor Current (ins. Class I)	0.4	mA rms	Acc. IEC60598-1. LED module contribution not included

## Surge immunity

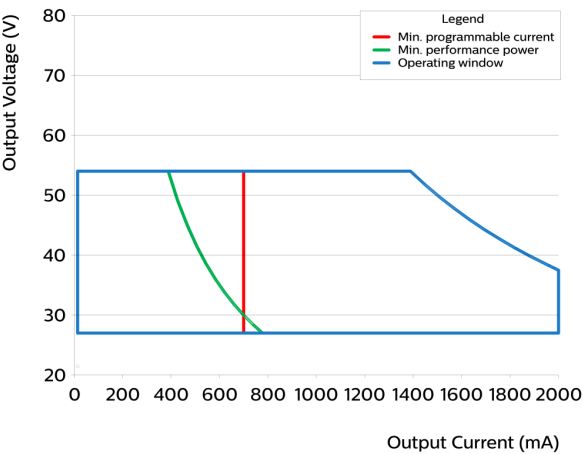
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge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

## Application Info (Approbation)

Specification item	Value
Approval marks and Certifications	CCC / CE / DALI 2 / EAC / EL / ENEC / F-mark / RCM / SELV / UA / WEEE
Ingress Protection classification (IP)	20
Application	Indoor Linear
Mounting Type	Built-in

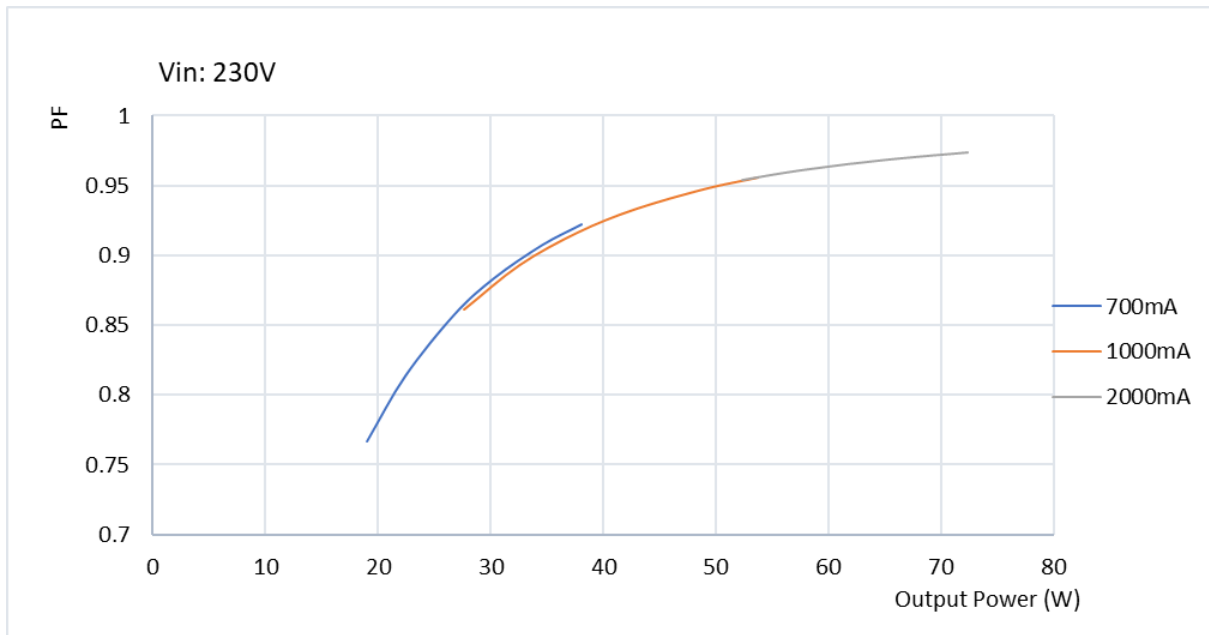
Graphs

Operating window

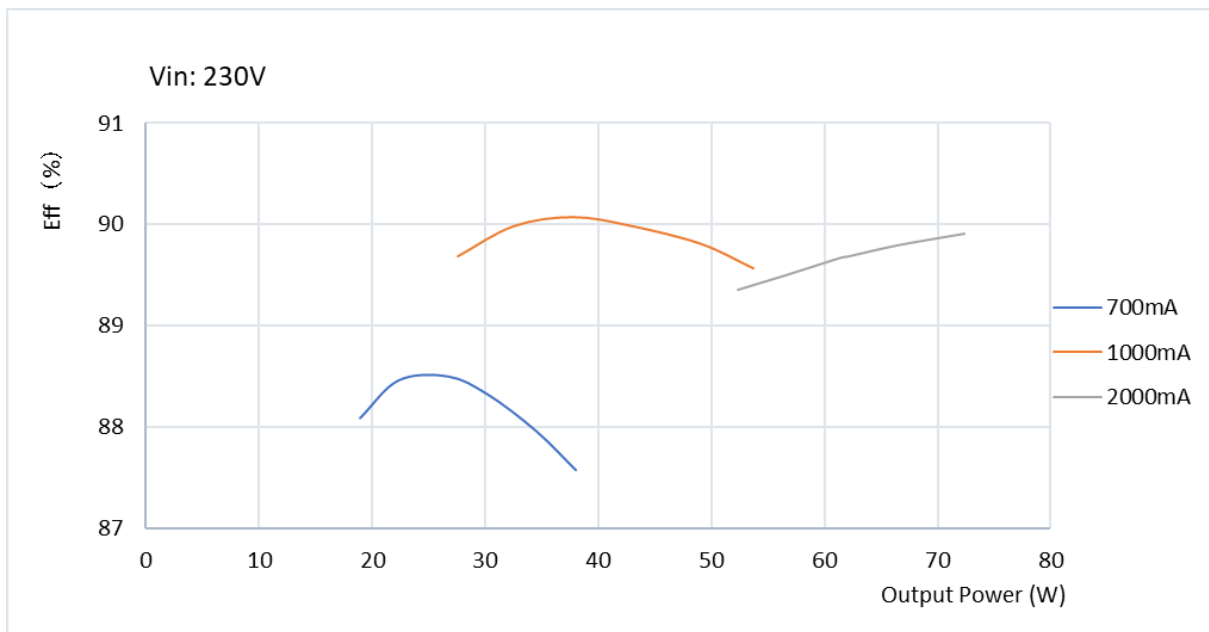


Type	Output current (mA)	Min. output voltage (V)	Max. output voltage (V)	Max. output power (W)
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	700	27	54	37.8
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	750	27	54	40.5
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	800	27	54	43.2
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	850	27	54	45.9
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	900	27	54	48.6
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	950	27	54	51.3
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1000	27	54	54
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1050	27	54	56.7
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1100	27	54	59.4
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1150	27	54	62.1
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1200	27	54	64.8
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1250	27	54	67.5
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1300	27	54	70.2
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1350	27	54	72.9
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1400	27	53	75
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1450	27	51	75
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1500	27	50	75
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1550	27	48	75
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1600	27	46	75
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1650	27	45	75
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1700	27	44	75
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1750	27	42	75
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1800	27	41	75
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1850	27	40	75
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1900	27	39	75
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	1950	27	38	75
Xitanium 75W 0.7-2.0A 54V TD S 230V G2	2000	27	37	75

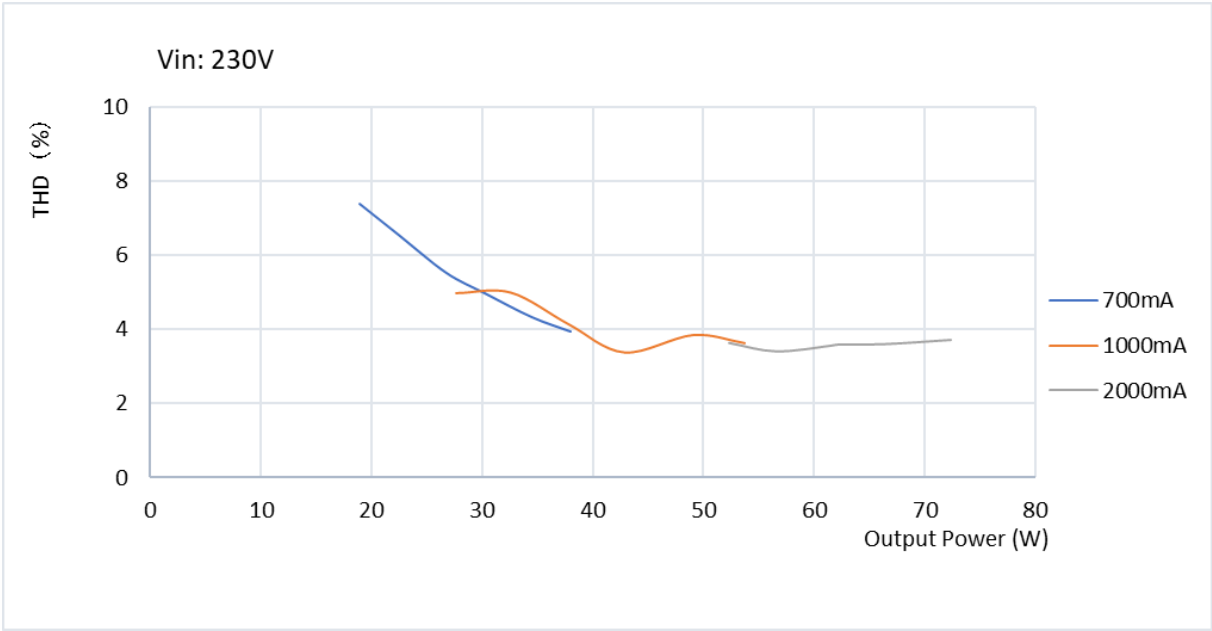
## Power factor versus output power



## Efficiency versus output power







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Date of release: April 4, 2024 v1

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