PHILIPS

Xitanium

LED driver

Datasheet

Xitanium LED drivers – linear LV isolated

Xitanium 36W 0.3-1.0A 54V TD S 230V G2

9290 029 57606

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. hot wiring, 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

December 2023

Logistical data

Specification item	Value
Product name	Xitanium 36W 0.3-1.0A 54V TD S 230V G2
EOC	872016920528400
Logistic code 12NC	9290 029 57606
EAN1 (GTIN)	8720169205284
EAN3 (box)	8720169205291
Pieces per box	24

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	220…240	V_{ac}	Performance range
Rated input voltage	230	V_{ac}	
Rated input frequency	50…60	Hz	Performance range
Rated input current	0.2	A	@ full output power @ rated input voltage
Rated input power	42.0	W	@ rated output power @ rated input voltage
Power factor	0.84…0.9 C		@ rated output power @ rated input voltage
Total harmonic distortion	20	%	@ rated output power @ rated input voltage
Total harmonic distortion, best value	5.1	%	@ full output power @ rated input voltage
Efficiency	87.0	%	@ full output power @ rated input voltage @ max. Iout
Rated input voltage DC	186…250	V_{dc}	Performance range (No external DC fuse is required)
Rated input current DC	≤ 0.2	A_{dc}	Performance range
Input voltage AC	198…264	V_{ac}	Operational range
Input frequency AC	45…66	Hz	Operational range
Input voltage DC	168…275	V_{dc}	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_{dc}	
Output voltage max.	60	V	Maximum output voltage (rms)
Output current	300…1000	mA	
Output current min programmable	300	mA	
Min output current	7	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_{st}^{LM}	≤ 1		
Output SVM	≤ 0.4		
Output power	0.2…36.0	W	
Minimum performance output power	10	W	Power factor > 0.9 and THD < 20%

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	Corridor Mode, DALI, Touch & Dim (TD)		See design-in guide at www.philips.com/oem for more controllability details
Dimming range	1…100	%	>700mA 1% dimming; < 700mA min. current 7mA
Isolation controls input to output	SELV		acc. IEC61347-1

Wiring and Connections

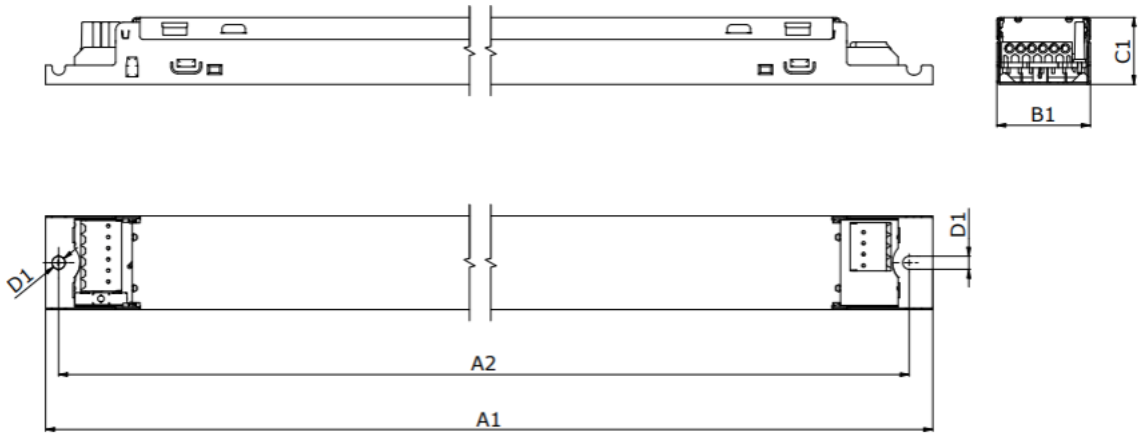
Specification item	Value	Unit	Type
Input wire cross-section	0.5…1.5 / 20…16	mm^2 / AWG	WAGO744, solid wire
Input wire strip length	8…9	mm	
Output wire cross-section	0.5…1.5 / 20…16	mm^2 / AWG	WAGO744, solid wire
Output wire strip length	8…9	mm	
Control wire cross-section	0.5…1.5 / 20…16	mm^2 / AWG	WAGO744, 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	266	gram	
Housing color	White		

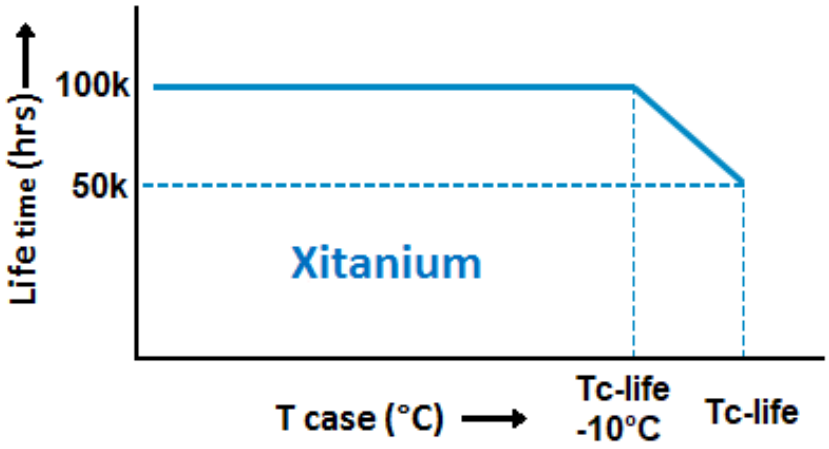


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-25…+50	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded
Tcase-max	75	°C	Maximum temperature measured at T_{case}-point
Tcase-life	65	°C	Measured at T_{case}-point
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 Tcase-point is Tcase-life. 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	
70	71000	hr	
65	100000	hr	Temperature measured @Tc point
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

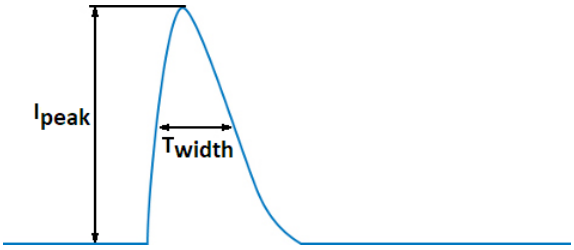
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	SimpleSet	300 mA	
Adjustable Light Output (ALO)	Yes	OFF	
Constant Light Output (CLO)	Yes	OFF	
Touch & Dim (TD)	Yes	ON	
Corridor Mode	Yes	ON	Default: T1=55s, T2=12s, T3=30min
Min Dim Level	Yes	1 %	
DC emergency (DCemDim)	Yes	ON	Current output decreased to 15%
OEM Write Protection (OWP)	Yes	OFF	
Luminaire Info (DALI part 251)	Yes	—	
Energy metering (DALI part 252)	Yes	—	Accuracy 10%
Diagnostics (DALI part 253)	Yes	—	
Diagnostics	Yes	—	

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

Inrush current

Specification item	Value	Unit	Condition
Inrush current	14.3	A	Input voltage 230V
Inrush peak width	188	µs	Input voltage 230 V, measured at 50% height
Drivers / MCB 16A type B	≤ 45	pcs	Indicative value at 230V



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

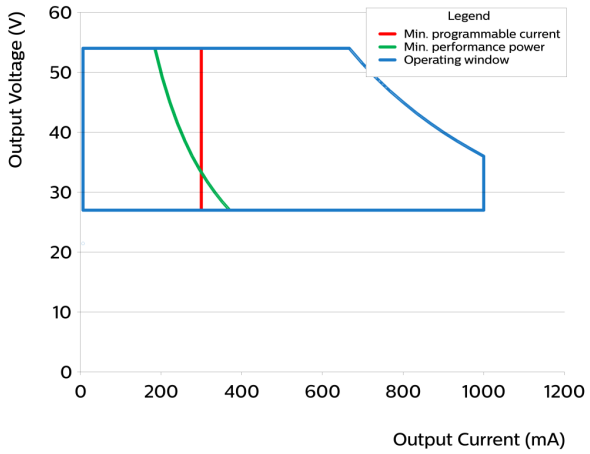
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge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

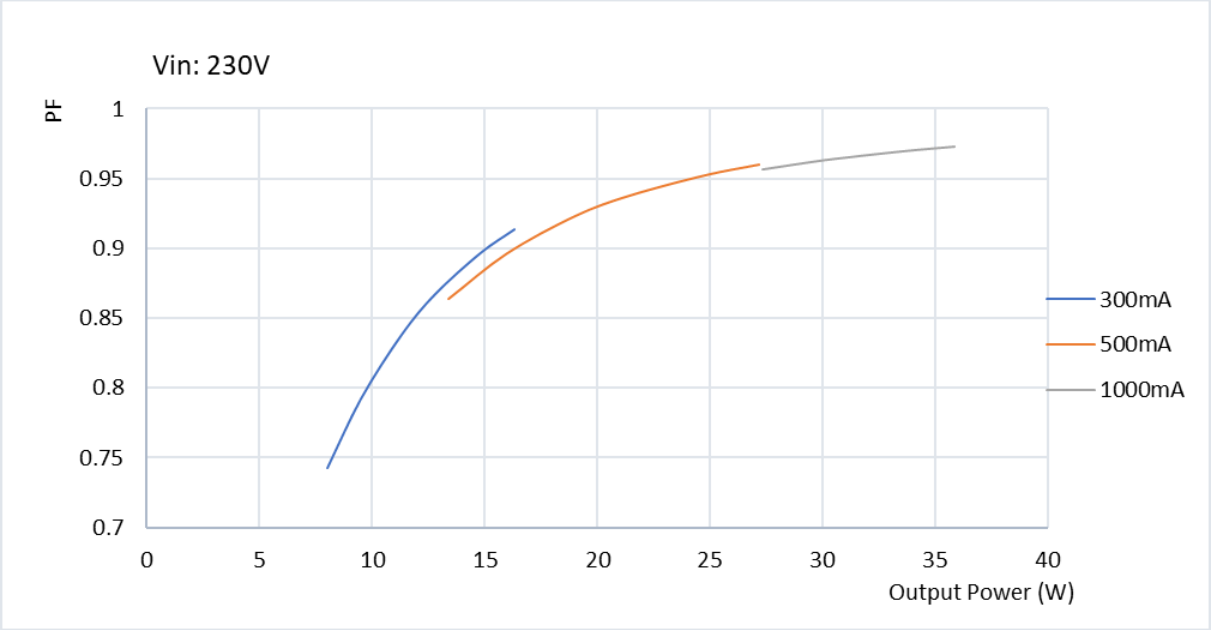
Graphs

Operating window

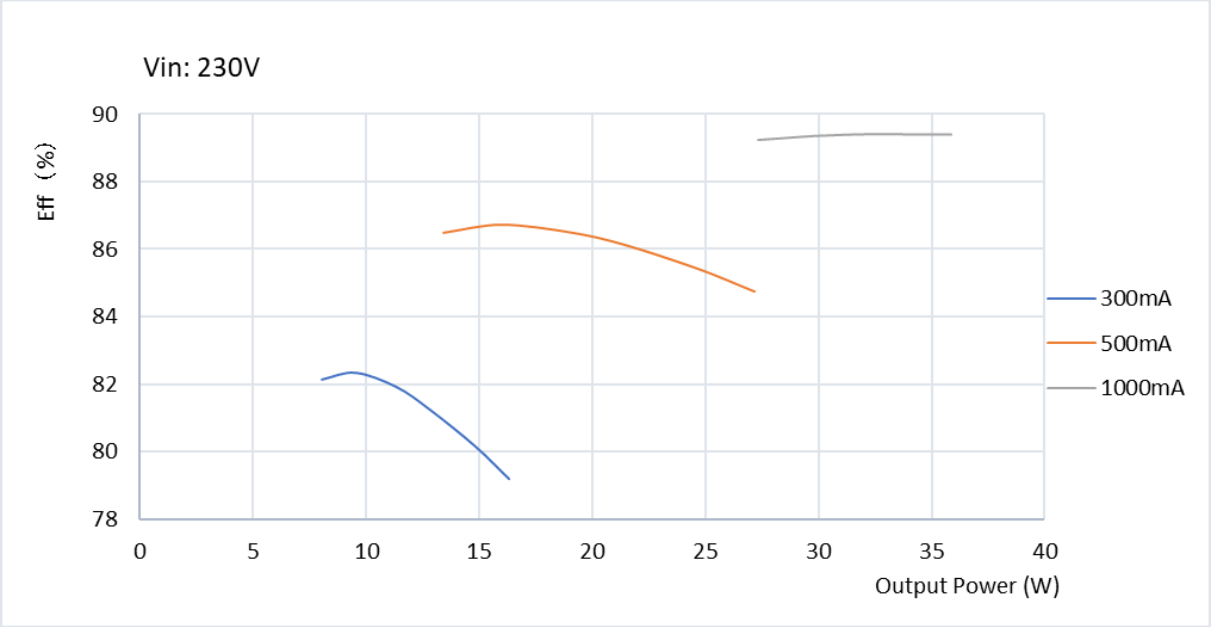


Type	Output current (mA)	Min. output voltage (V)	Max. output voltage (V)	Max. output power (W)
Xitanium 36W 0.3-1.0A 54V TD S 230V G2	300	27	54	16.2
Xitanium 36W 0.3-1.0A 54V TD S 230V G2	350	27	54	18.9
Xitanium 36W 0.3-1.0A 54V TD S 230V G2	400	27	54	21.6
Xitanium 36W 0.3-1.0A 54V TD S 230V G2	450	27	54	24.3
Xitanium 36W 0.3-1.0A 54V TD S 230V G2	500	27	54	27
Xitanium 36W 0.3-1.0A 54V TD S 230V G2	550	27	54	29.7
Xitanium 36W 0.3-1.0A 54V TD S 230V G2	600	27	54	32.4
Xitanium 36W 0.3-1.0A 54V TD S 230V G2	650	27	54	35.1
Xitanium 36W 0.3-1.0A 54V TD S 230V G2	700	27	51	36
Xitanium 36W 0.3-1.0A 54V TD S 230V G2	750	27	48	36
Xitanium 36W 0.3-1.0A 54V TD S 230V G2	800	27	45	36
Xitanium 36W 0.3-1.0A 54V TD S 230V G2	850	27	42	36
Xitanium 36W 0.3-1.0A 54V TD S 230V G2	900	27	40	36
Xitanium 36W 0.3-1.0A 54V TD S 230V G2	950	27	37	36
Xitanium 36W 0.3-1.0A 54V TD S 230V G2	1000	27	36	36

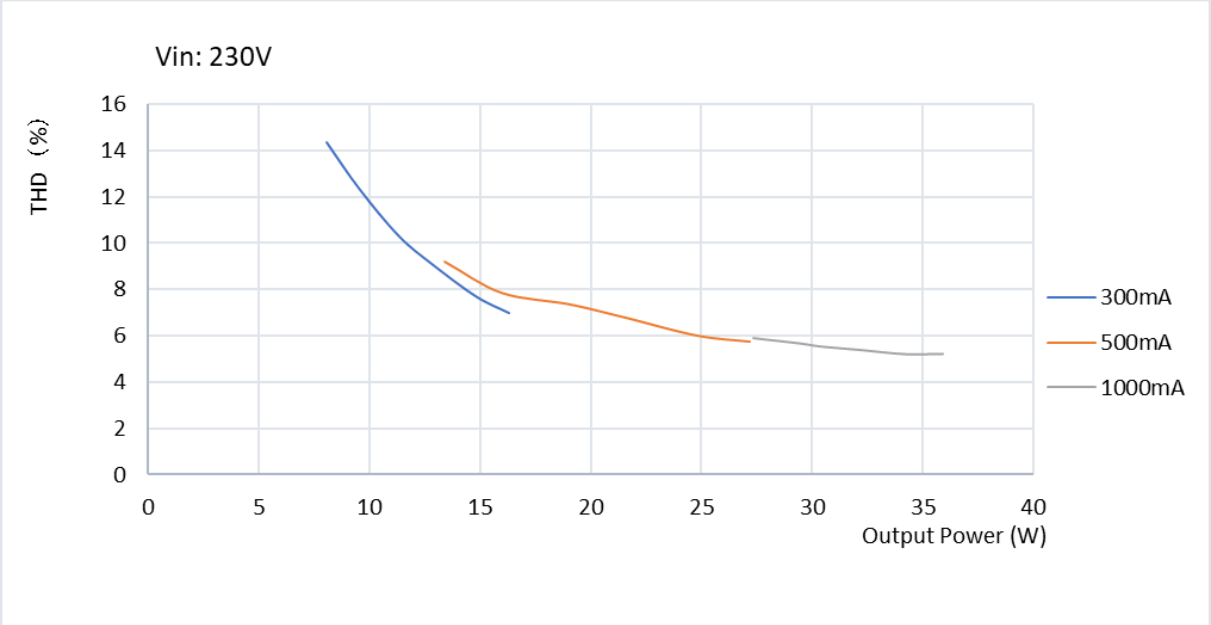
Power factor versus output power



Efficiency versus output power



THD versus output power



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