

PHILIPS

Xitanium

LED driver



Datasheet

LED drivers – Extreme Small

Xitanium 12W 0.08-0.5A 24V 230V

9290 028 03706

Enabling future-proof LED technology

Xitanium LED drivers are designed to operate LED solutions for general lighting applications. Reliability is enhanced by 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 challenges for OEMs. With Xitanium LED drivers, flexibility in luminaire design is assured thanks to an adjustable output current. Application-oriented operating windows offer stable lumen output and light quality levels that specifiers and architects demand. The adjustable output current also enables operation of various LED PCB solutions from different manufacturers.

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

Features

- Configurable operating window (AOC) via SimpleSet
- Wide range of power ratings
- Housing for independent use with strain relief and loop through or built-in for Spot- and down-lighting

Application

- Retail
- Office

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 range	50...60	Hz	Performance range
Rated input current	0.07	A	@ rated output power @ rated input voltage
Rated input power	14.5	W	@ rated output power @ rated input voltage
Power factor	0.9		@ rated output power @ rated input voltage
Total harmonic distortion	20	%	@ rated output power @ rated input voltage
Efficiency	83	%	@ rated output power @ rated input voltage @ max. U _{out}
Rated input voltage DC range	186...250	V _{dc}	Performance range
Rated input current DC range	≥ 0.08	A _{dc}	Performance range
Input voltage AC range	198...264	V _{ac}	Safety operational range
Input frequency AC range	45...66	Hz	Safety operational range
Input voltage DC range	168...275	V _{dc}	Safety operational range
Isolation input to output	SELV		

Electrical output data

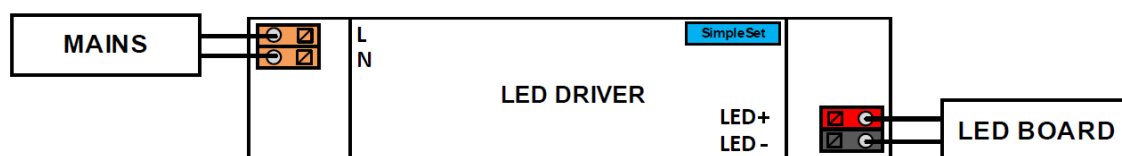
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	8...24	V _{dc}	
Output voltage max.	60	V	Maximum voltage at open load
Output current	0.08...0.5	A	
Output current tolerance ±	5	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average @ 1kHz
Output P _{st} ^{LM}	≤ 0.08		
Output SVM	≤ 0.01		
Output power	3.6...12	W	

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	Fixed		

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.75...1.5 / 18...16	mm ² / AWG	solid / stranded wire
Input wire strip length	8.5...9.5	mm	
Input wire cross-section	0.5...1.5	mm ² / AWG	solid / stranded wire
Input wire strip length	8.5...9.5	mm	
Output wire cross-section	0.75...1.5 / 18...16	mm ² / AWG	solid / stranded wire
Output wire strip length	8.5...9.5	mm	
Output wire cross-section	0.5...1.5	mm ² / AWG	solid / stranded wire
Output wire strip length	8.5...9.5	mm	
Maximum cable length	0.6	m	Total length of wiring including LED module, one way



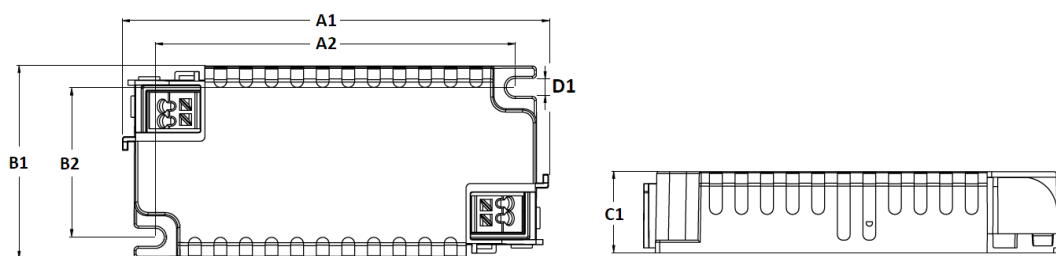
Insulation

Insulation per IEC61347-1

Input	Output
Input	SELV
Output	

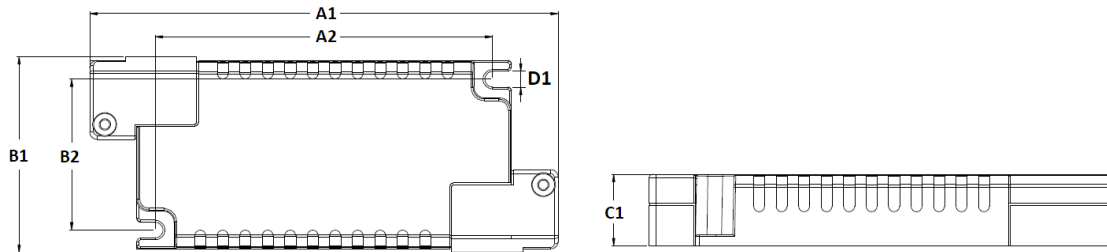
Dimensions and weight (for housing Mini flat 100x45x19 built-in 2p2p)

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	100	mm	
Mounting hole distance (A2)	84	mm	
Width (B1)	45	mm	
Width (B2)	35	mm	
Height (C1)	19.4	mm	
Mounting hole diameter (D1)	4.1	mm	
Weight	90	gram	
Housing color	White (RAL 9016)		



Dimensions and weight (for housing Mini flat 125x47x19 independent 2p2p)

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	125	mm	
Mounting hole distance (A2)	84	mm	
Width (B1)	47	mm	
Width (B2)	35	mm	
Height (C1)	19.4	mm	
Mounting hole diameter (D1)	4.1	mm	
Weight	90	gram	
Housing color	White (RAL 9016)		



Logistical data

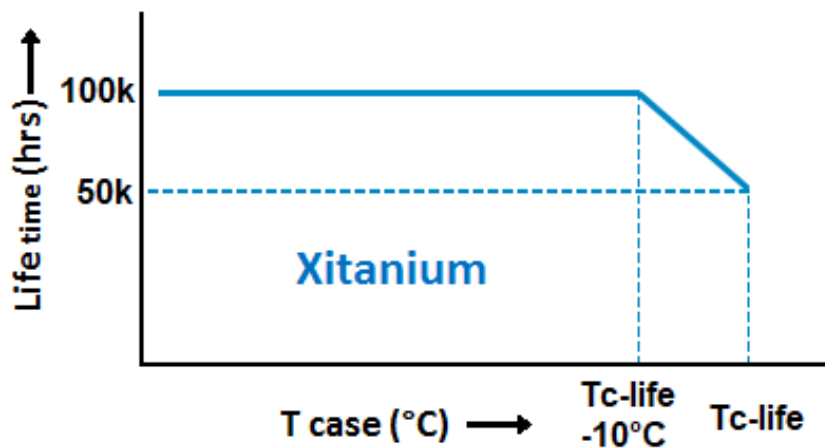
Specification item	Value
Product name	Xitanium 12W 0.08-0.5A 24V 230V
EOC	871951425110600
Logistic code 12NC	9290 028 03706
EAN1 (GTIN)	8719514251106
EAN3 (box)	8719514251113
Pieces per box	25
Strain Relief 12NC	929001431106

Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20...+50	°C	Higher ambient temperature allowed as long as T _{case-max} is not exceeded
T _{case-max}	75	°C	Maximum temperature measured at T _{case-point}
T _{case-life}	75	°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	50,000	hours	Measured temperature at Tcase-point is Tcase-life. Maximum failures = 10%



Storage temperature and humidity

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

Programmable features

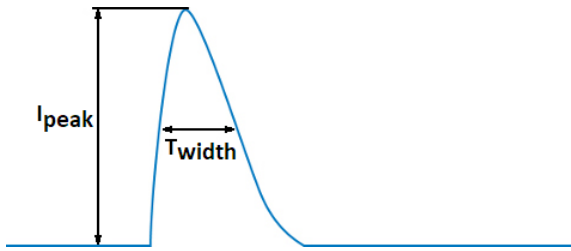
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	SimpleSet	80 mA	Approach SimpleSet antenna from the top of the driver
OEM Write Protection (OWP)	Yes	OFF	
Luminaire Info (DALI part 251)	Yes	—	

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 and II		per IEC60598

Inrush current

Specification item	Value	Unit	Condition
Inrush current	8.1	A	Input voltage 230V
Inrush peak width	27	μs	Input voltage 230 V, measured at 50% height
Drivers / MCB 16A type B	≤ 40	pcs	Indicative value



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

Driver touch current / protective conductor current

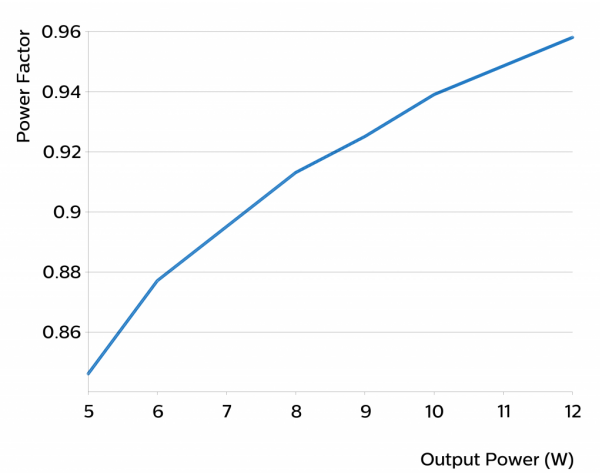
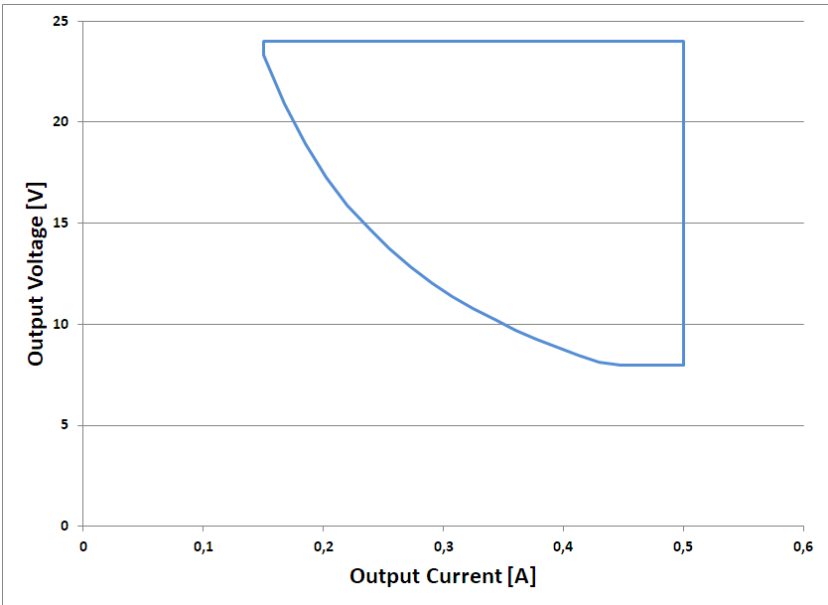
Specification item	Value	Unit	Condition
Typical Touch Current (ins. Class II)	0.7	mA peak	Acc. IEC61347-1. LED module contribution not included

Surge immunity

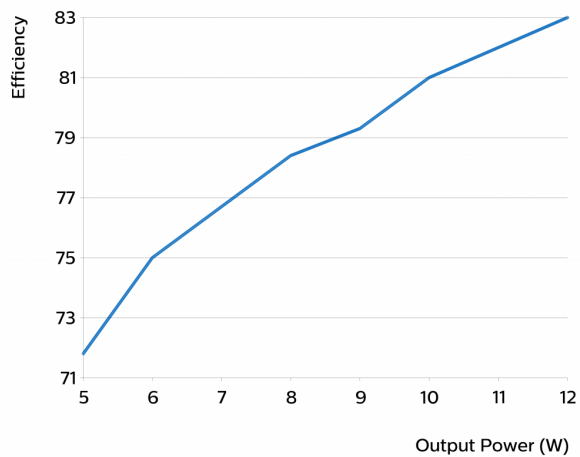
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	L-N acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	L/N - EQUI: acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Application Info

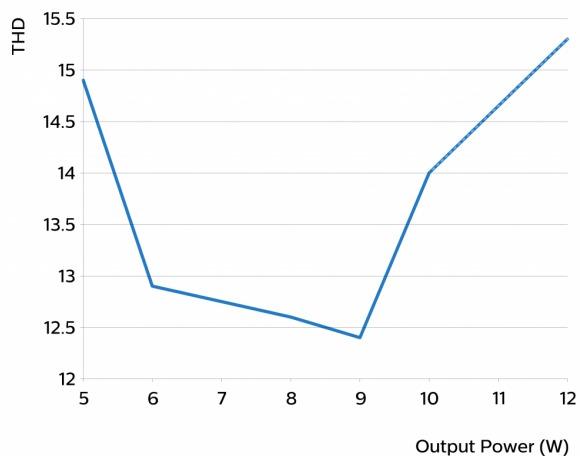
Specification item	Value
Approval marks	CCC / CE / EAC / EL / ENEC / RCM / SELV / UA
Ingress Protection classification (IP)	20
Noise and hum dB(A)	20
Application	Indoor Point
Mounting Type	Built-in / Independent



Efficiency versus output power



THD versus output power



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