

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium LED drivers – spot- and downlight SELV

Xitanium 20W WH 0.15-0.5A 54V SR Is 230V

9290 028 61106

Enabling future-proof LED technology

Our Xitanium programmable window LED drivers ensure OEMs have complete flexibility and control in producing high quality luminaires. Available in application-dedicated form factors for built-in use and independent applications, our LED point drivers provide further customization via wide operating windows. Additionally, almost all drivers feature the following specifications: SELV, improved ripple current, temperature derating, – providing OEMs the tools to produce, and even alter later if necessary, premium downlights and spotlights.

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

- Operating windows - output current can be adjusted via the Philips MultiOne configurator ('TD' drivers) or with a resistor outside the driver or SimpleSet
- Power ratings: 10-75W
- Choice of housing designs -linear housing for tracks in '3 in 1' in design, conventional HID housings for down and Spotlighting and WH housing for independent use with strain relief and loop through

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	0.11	A	@ rated output power @ rated input voltage
Rated input power	24	W	@ rated output power @ rated input voltage
Minimum Power factor	0.9		@ rated output power @ rated input voltage
Total harmonic distortion	20	%	@ rated output power @ rated input voltage
Efficiency	87	%	@ rated output power @ rated input voltage @ max. I _{out}
Rated input voltage DC range	186...250	V _{dc}	Performance range
Rated input current DC range	0.13	A _{dc}	Performance range
Input voltage AC range	198...264	V _{ac}	Operational range
Input frequency AC range	45...66	Hz	Operational range
Input voltage DC range	168...275	V _{dc}	Operational range
Standby Power	0.49	W	Excl. consumption by sensors connected to the DA bus
Isolation input to output	SELV		

Electrical output data

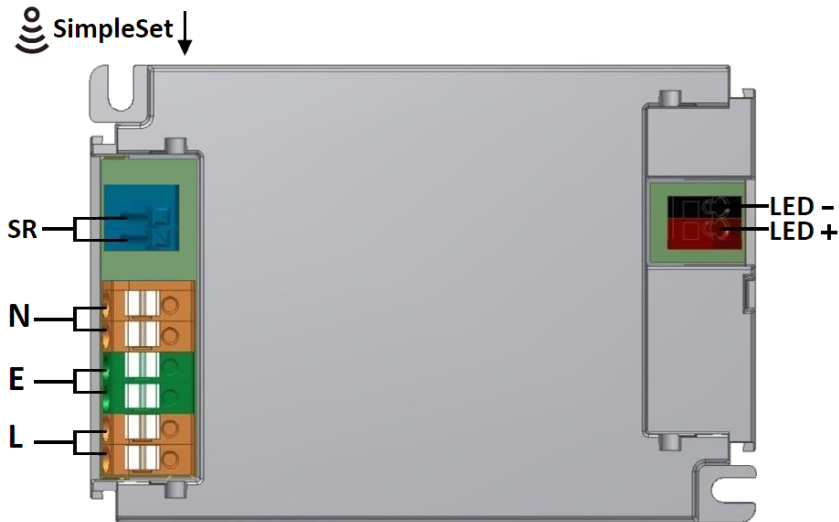
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	24...54	V _{dc}	
Output voltage max.	60	V	Maximum output voltage (rms)
Output current	0.15...0.54	A	
Output current min programmable	150	mA	
Output current min dimming	5	mA	
Output current tolerance ±	5	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average < 3kHz
Output P _{st} ^{LM}	≤ 0.5		In entire operating window
Output SVM	≤ 0.03		In entire operating window
Output power	6...20	W	

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	SR		Output current amplitude dimming. Please refer to design-in guide at www.philips.com/oem for more controllability details.
Dimming range	1...100	%	Acc. D4i. See www.digitalilluminationinterface.org/products
Isolation controls input to output	Supplementary		acc. IEC61347-1
SR output voltage max.	22.5	V	
SR guaranteed current	52	mA	
SR maximum current	60	mA	

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.75...2.5 / 18...14	mm ² / AWG	solid / stranded wire
Input wire strip length	10...11	mm	
Output wire cross-section	0.5...1.5	mm ² / AWG	solid / stranded wire
Output wire strip length	8.5...9.5	mm	
Control wire cross-section	0.5...1.5	mm ² / AWG	solid / stranded wire
Control wire strip length	8.5...9.5	mm	
Maximum cable length	0.6	m	CISPR15: between driver and LED module
Loop Through	Input		

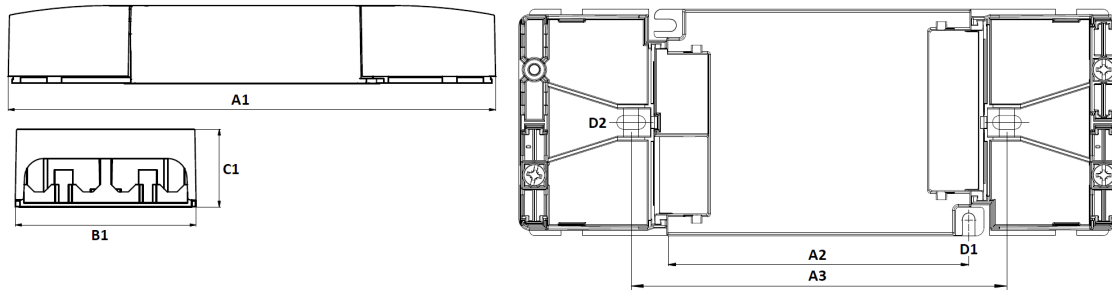


Insulation

Insulation per IEC61347-1	Input	Output	DA
Input		SELV	Reinforced
Output	SELV		Supplementary
DA	Reinforced	Supplementary	

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	201	mm	
Mounting hole distance (A2)	99	mm	
Length (A3)	124	mm	
Width (B1)	75	mm	
Height (C1)	32.5	mm	
Mounting hole diameter (D1)	4.1	mm	
Mounting hole diameter (D2)	4.1	mm	
Weight	204	gram	



Logistical data

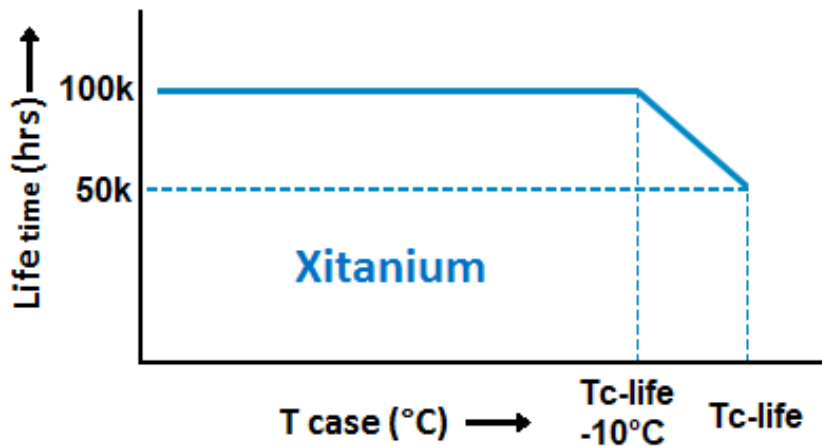
Specification item	Value
Product name	Xitanium 20W WH 0.15-0.5A 54V SR Is 230V
EOC	871951432704700
Logistic code 12NC	9290 028 61106
EAN1 (GTIN)	8719514327047
EAN3 (box)	8719514327054
Pieces per box	12

Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20...+55	°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}	65	°C	Measured at T _{case-point}
Maximum housing temperature	110	°C	In case of a failure. Thermal protection: 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

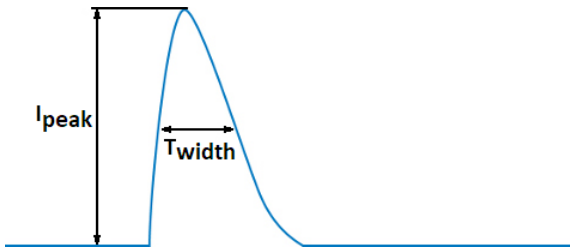
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	Programmable, SimpleSet	150 mA	
Adjustable Light Output (ALO)	Yes	OFF	
Adjustable Light Output (ALO) min level	Yes	OFF	
Constant Light Output (CLO)	Yes	OFF	
DALI 253 M	Yes	—	
Min Dim Level	Yes	1 %	
DC emergency (DCemDim)	Yes	ON	Default 15%, EOFx range = 1 .. 100% (EOFx = DCemDIM level). Internal fuse rating: T630mA 250VDC/AC
DALI control supported at DC operation	Yes	OFF	
OEM Write Protection (OWP)	Yes	OFF	
SR PSU (DALI part 250)	Yes	ON	
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
Energy metering (DALI part 252)	Yes	Accuracy = 4%
Diagnostics	Yes	
Diagnostics (DALI part 253)	Yes	

Inrush current

Specification item	Value	Unit	Condition
Inrush current	6.7	A	Input voltage 230V
Inrush peak width	30	μs	Input voltage 230 V, measured at 50% height
Drivers / MCB 16A type B	≤ 100	pcs	Indicative value at 230V



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
Typical Protective Conductor Current (ins. Class I)	0.5	mA rms	Acc. IEC60598-1. LED module contribution not included

Surge immunity

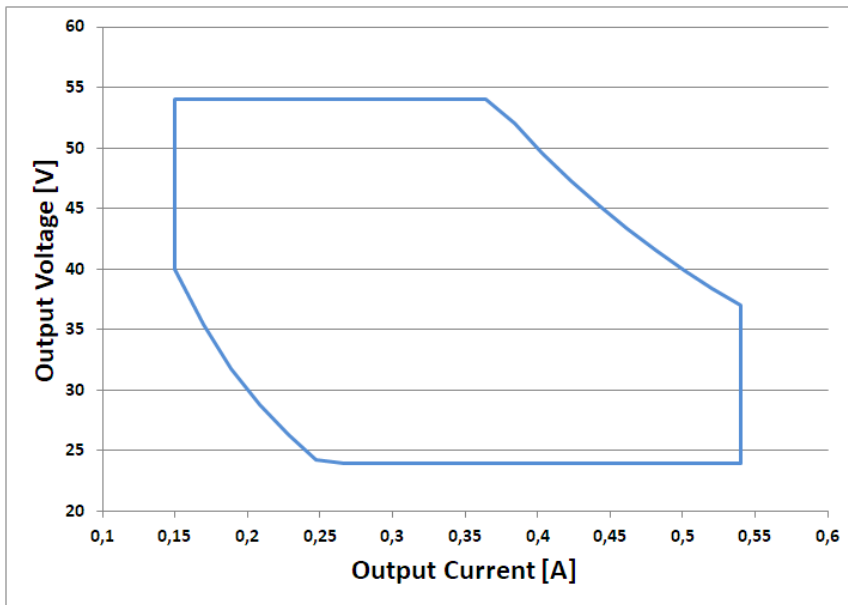
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	0.03	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Application Info

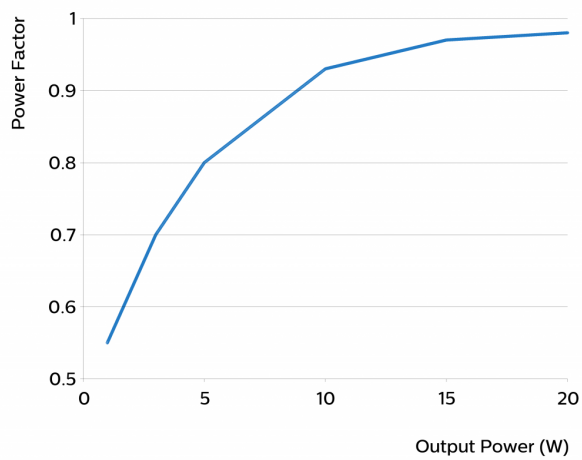
Specification item	Value
Approval marks and Certifications	CCC / CE / D4i / Double-insulated Built-In / EAC / EL / ENEC / RCM / SELV / SR / UA / UKCA / WEEE
Ingress Protection classification (IP)	20
Application	Indoor Point
Mounting Type	Built-in / Independent

Graphs

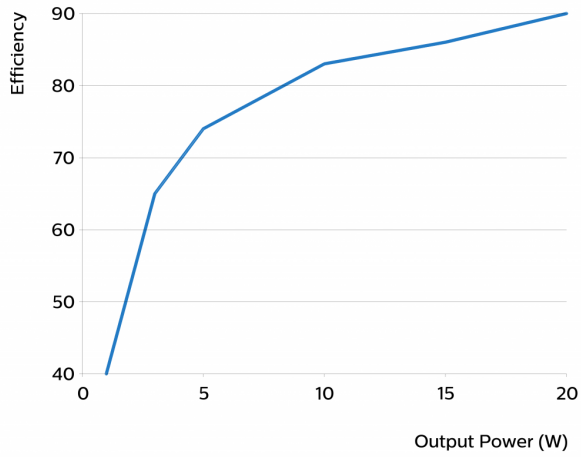
Operating window



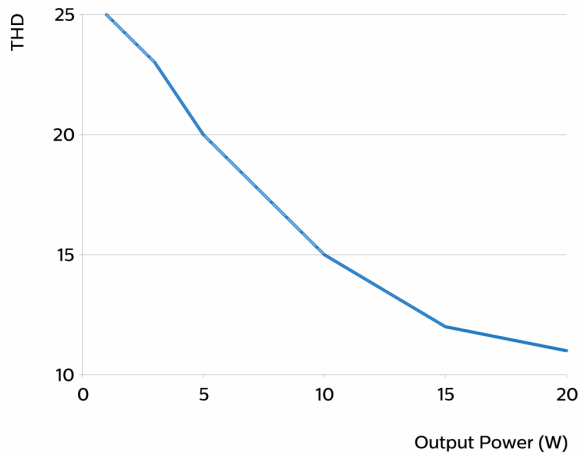
Power factor versus output power



Efficiency versus output power



THD versus output power



Notes

Mains wiring information:
Built-in use: 0.5...2.5mm²
Independent use: 0.75...2.5mm²



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