Xitanium

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

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
Weight	204 gram

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	0.11	A	@ rated output power @ rated input voltage
Rated input power	24.0	W	@ rated output power @ rated input voltage
Power factor performance range	≥ 0.90 C		@ rated output power @ rated input voltage@ rated output power @ rated input voltage
Total harmonic distortion	20	%	@ rated output power @ rated input voltage
Efficiency	87.0	%	@ rated output power @ rated input voltage @ max. Iout
Rated input voltage DC	186...250	V_{dc}	Performance range
Rated input current DC	0.13	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)	0.49	W	Excl. consumption by sensors connected to the DA bus
Isolation input to output	SELV		

Electrical output data

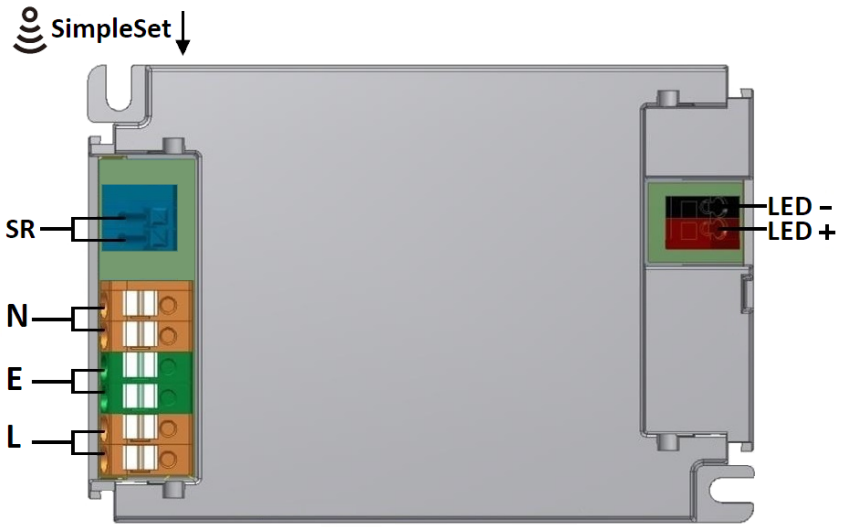
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	24...54	V_{dc}	
Output voltage max.	60	V	Maximum output voltage (rms)
Output current	150...540	mA	
Output current min programmable	150	mA	
Min output current	5	mA	
Output current tolerance ±	5	%	@full load
Output current ripple LF	≤ 4	%	Ripple = peak / average < 3kHz
Output P_{st}^{LM}	≤ 0.6		In entire operating window
Output SVM	≤ 0.1		In entire operating window
Output power	6.0...20.0	W	

Control interfaces

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 Power Supply max voltage.	22.5	V	
SR output current	52	mA	
SR Power Supply max current source	60	mA	

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.75...2.5 / 18...14	mm² / AWG	solid / stranded wire
Input wire strip length	10...11	mm	
Output wire cross-section	0.5...1.5 / 20...16	mm² / AWG	solid / stranded wire
Output wire strip length	8.5...9.5	mm	
Control wire cross-section	0.5...1.5 / 20...16	mm² / AWG	solid / stranded wire
Control wire strip length	8.5...9.5	mm	
Maximum cable length	2	m	CISPR15: between driver and LED module
Loop Through	Input		

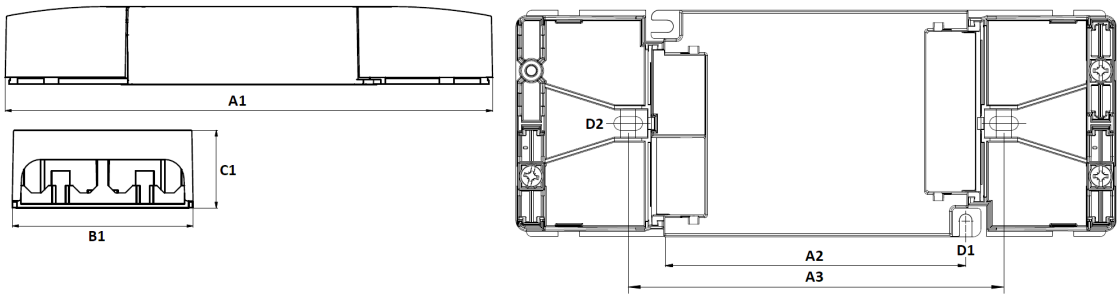


Isolation

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	

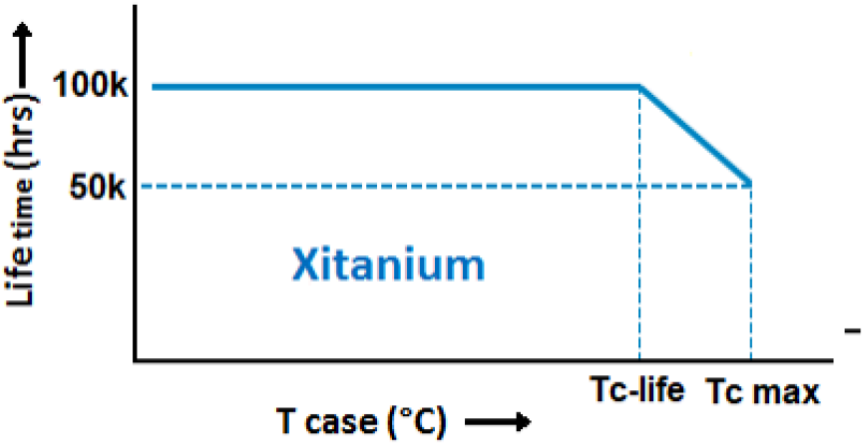


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20...+55	°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. 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%



Maximum failures = 10%

Temperature [°C]	Lifetime	Unit	Condition
75	25000	hr	
70	35000	hr	
65	50000	hr	Temperature measured @Tc point
60	>50000	hr	
55	>50000	hr	

Storage temperature and humidity

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

Programmable features

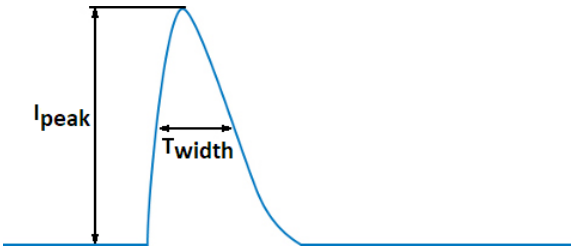
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	Programmable, SimpleSet	150 mA	
Adjustable Light Output (ALO)	Yes	OFF	
Adjustable Light Output (ALO) min level	Yes	OFF	
Constant Light Output (CLO)	Yes	OFF	
Min Dim Level (%)	Yes	1 %	
DC emergency (DCemDim)	Yes	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	
DALI Power Supply (DALI part 250)	Yes	ON	
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 and II	per IEC60598
Energy metering (DALI part 252)	Yes	Accuracy = 4%
Diagnostics (DALI part 253)	Yes	
Diagnostics via Signify tool	Yes	

Inrush current

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

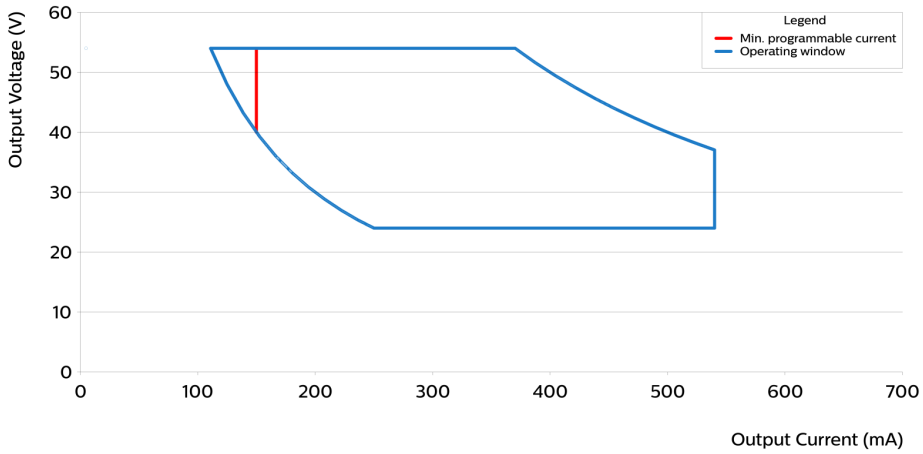
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	0.03	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge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

Application Info (Approbation)

Specification item	Value
Approval marks and Certifications	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

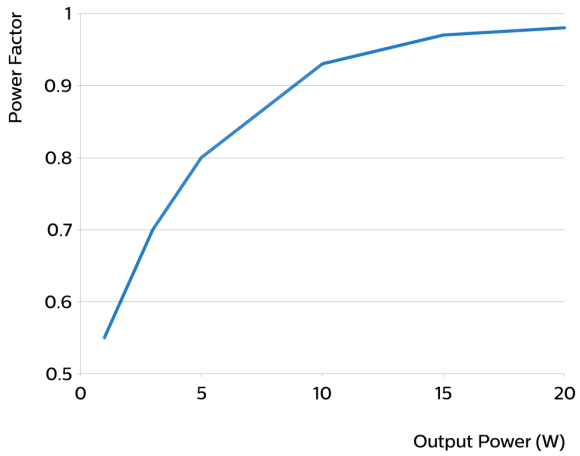
Graphs

Operating window

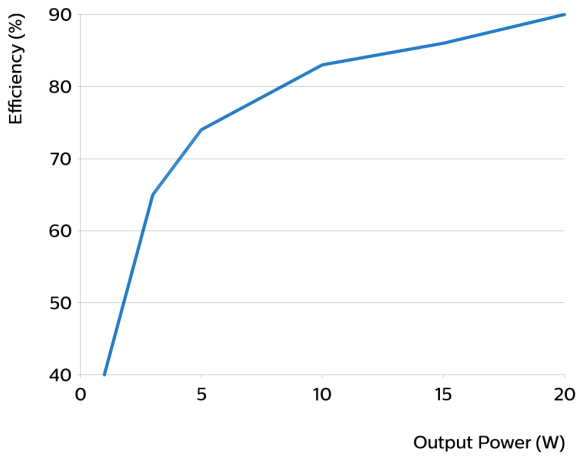


Type	Output current (mA)	Min. output voltage (V)	Max. output voltage (V)	Max. output power (W)
Xitanium 20W WH 0.15-0.5A 54V SR Is 230V	150	40	54	8.1
Xitanium 20W WH 0.15-0.5A 54V SR Is 230V	200	30	54	10.8
Xitanium 20W WH 0.15-0.5A 54V SR Is 230V	250	24	54	13.5
Xitanium 20W WH 0.15-0.5A 54V SR Is 230V	300	24	54	16.2
Xitanium 20W WH 0.15-0.5A 54V SR Is 230V	350	24	54	18.9
Xitanium 20W WH 0.15-0.5A 54V SR Is 230V	400	24	50	20
Xitanium 20W WH 0.15-0.5A 54V SR Is 230V	450	24	44	20
Xitanium 20W WH 0.15-0.5A 54V SR Is 230V	540	24	37	20

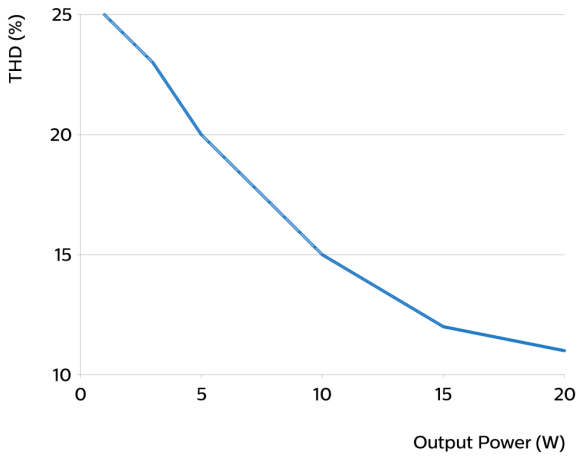
Power factor versus output power



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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