PHILIPS

Xitanium

LED driver

Datasheet

Xitanium LED drivers – spot- and downlight SELV

Xitanium 50W WH 0.7-1.5A 54V SR S 230V

9290 039 18706

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.

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

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

Application

- Retail
- Office

January 2025

Logistical data

Specification item	Value
Product name	Xitanium 50W WH 0.7-1.5A 54V SR S 230V
EOC	872110303620900
Logistic code 12NC	9290 039 18706
EAN1 (GTIN)	8721103036209
EAN3 (box)	8721103036216
Pieces per box	9
Weight	172 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	0.27	A	@ rated output power @ rated input voltage
Rated input power	60.0	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
Efficiency	89.0	%	@ rated output power @ rated input voltage @ max. Iout
Rated input voltage DC	186…250	V_{dc}	Performance range
Rated input current DC	0.32	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

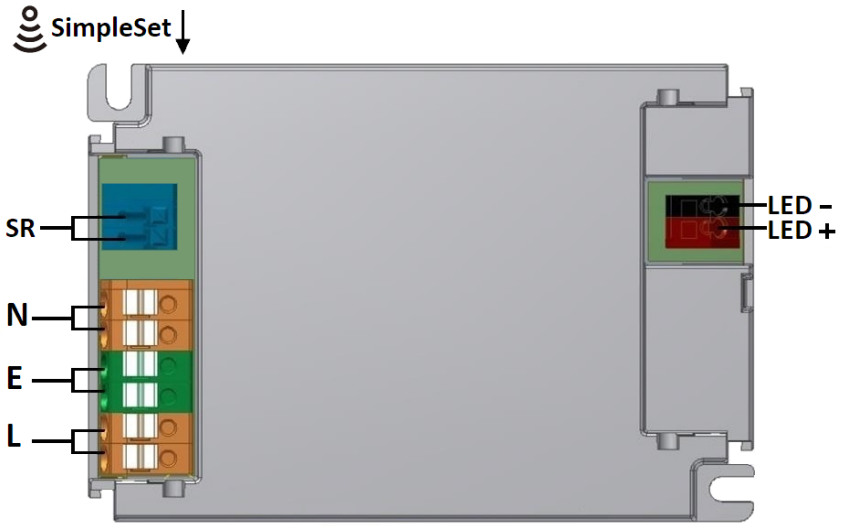
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	24…54	V_{dc}	
Output voltage max.	60	V	Maximum output voltage (rms)
Output current	700…1500	mA	
Output current min programmable	700	mA	
Min output current	10	mA	
Output current tolerance ±	5	%	@full load
Output current ripple LF	≤ 4	%	Ripple = peak / average < 3kHz
Output P_{st}^{LM}	≤ 0.8		In entire operating window
Output SVM	≤ 0.1		In entire operating window
Output power	16.8…50.0	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	0.5…2.5 / 20…14	mm^2 / AWG	WAGO264, solid / stranded wire
Input wire strip length	8…9	mm	
Output wire cross-section	0.5…1.5 / 20…16	mm^2 / AWG	solid / stranded wire
Output wire strip length	8.5…9.5	mm	
Control wire cross-section	0.5…1.5 / 20…16	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		

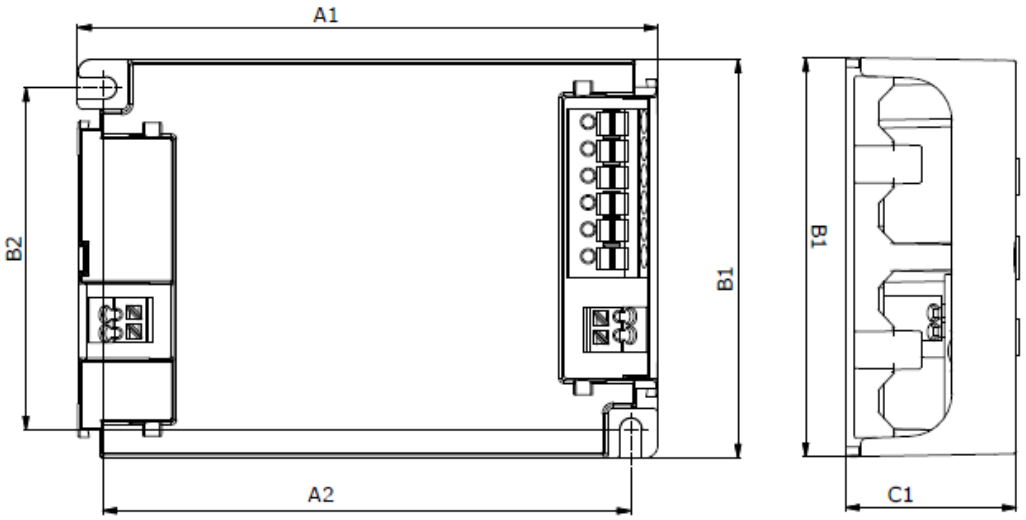


Isolation

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)	109	mm	
Mounting hole distance (A2)	99	mm	
Width (B1)	75	mm	
Height (C1)	32.5	mm	
Mounting hole diameter (D1)	4.1	mm	
Weight	172	gram	

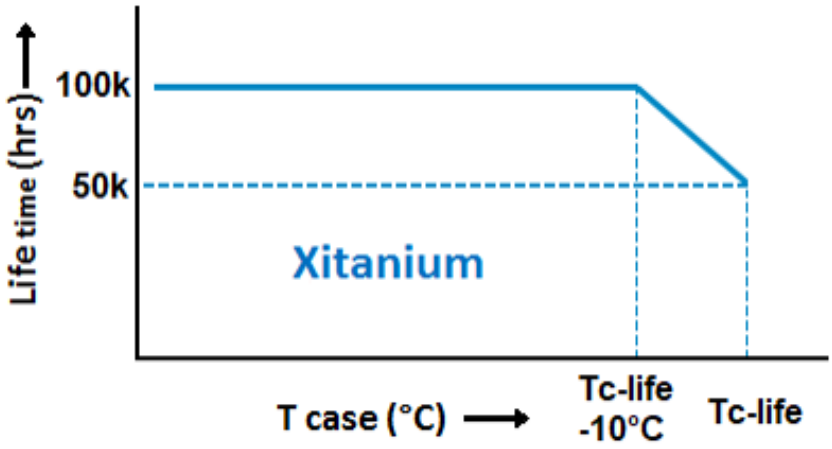


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20…+55	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded
Tcase-max	90	°C	Maximum temperature measured at T_{case}-point
Tcase-life	80	°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%



Maximum failures = 10%

Temperature [°C]	Lifetime	Unit	Condition
90	25000	hr	
85	35000	hr	
80	50000	hr	Temperature measured @Tc point
75	>50000	hr	
70	>50000	hr	

Storage temperature and humidity

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

Programmable features

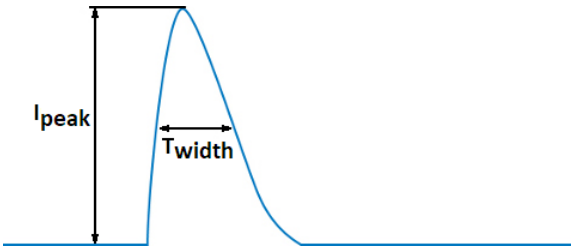
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	Programmable, SimpleSet	700 mA	
Adjustable Light Output (ALO)	Yes	OFF	
Adjustable Light Output (ALO) min level	Yes	OFF	
Constant Light Output (CLO)	Yes	OFF	
Min Dim Level (%)	Yes	1 %	
DC emergency (DCemDim)	Yes	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		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	9.4	A	Input voltage 230V
Inrush peak width	35	µs	Input voltage 230V, measured at 50% height
Drivers / MCB 16A type B @230V AC	≤ 27	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

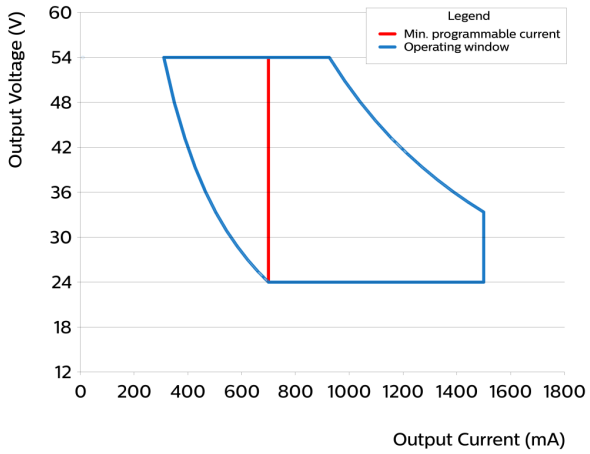
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	0.03	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge 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 / EL / ENEC / RCM / SELV / SR / UA / UKCA / WEEE
Ingress Protection classification (IP)	20
Application	Indoor Point
Mounting Type	Built-in

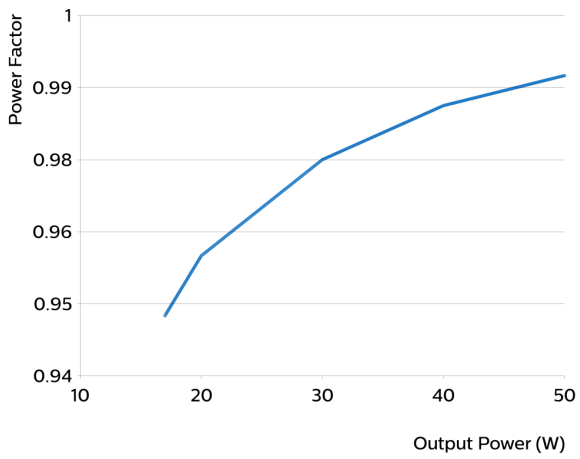
Graphs

Operating window

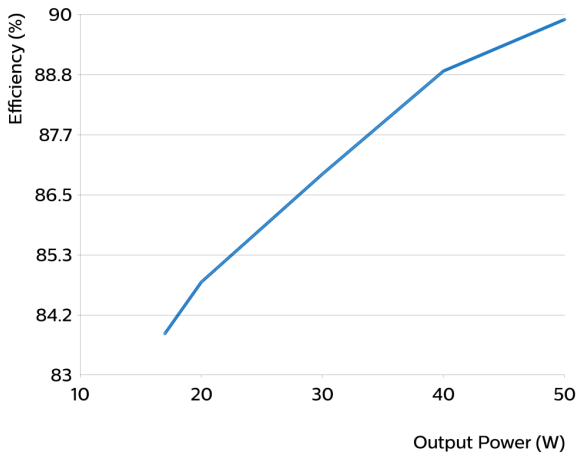


Type	Output current (mA)	Min. output voltage (V)	Max. output voltage (V)	Max. output power (W)
Xitanium 50W WH 0.7-1.5A 54V SR S 230V	700	24	54	37.8
Xitanium 50W WH 0.7-1.5A 54V SR S 230V	750	24	54	40.5
Xitanium 50W WH 0.7-1.5A 54V SR S 230V	800	24	54	43.2
Xitanium 50W WH 0.7-1.5A 54V SR S 230V	850	24	54	45.9
Xitanium 50W WH 0.7-1.5A 54V SR S 230V	900	24	54	48.6
Xitanium 50W WH 0.7-1.5A 54V SR S 230V	950	24	52	50
Xitanium 50W WH 0.7-1.5A 54V SR S 230V	1000	24	50	50
Xitanium 50W WH 0.7-1.5A 54V SR S 230V	1050	24	47	50
Xitanium 50W WH 0.7-1.5A 54V SR S 230V	1100	24	45	50
Xitanium 50W WH 0.7-1.5A 54V SR S 230V	1150	24	43	50
Xitanium 50W WH 0.7-1.5A 54V SR S 230V	1200	24	41	50
Xitanium 50W WH 0.7-1.5A 54V SR S 230V	1250	24	40	50
Xitanium 50W WH 0.7-1.5A 54V SR S 230V	1300	24	38	50
Xitanium 50W WH 0.7-1.5A 54V SR S 230V	1350	24	37	50
Xitanium 50W WH 0.7-1.5A 54V SR S 230V	1400	24	35	50
Xitanium 50W WH 0.7-1.5A 54V SR S 230V	1450	24	34	50
Xitanium 50W WH 0.7-1.5A 54V SR S 230V	1500	24	33	50

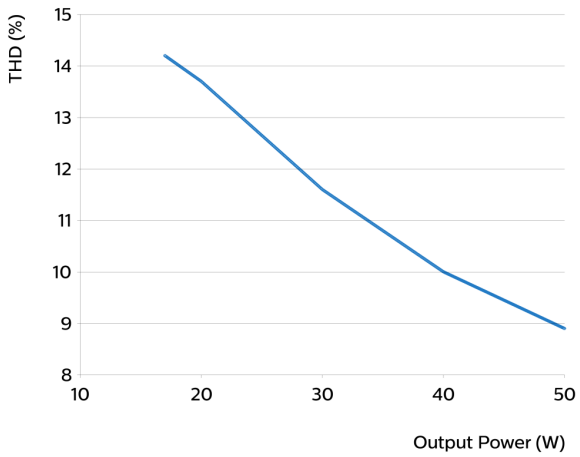
Power factor versus output power



Efficiency versus output power



THD versus output power



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