Xitanium

Datasheet

Xitanium LED drivers – spot- and downlight SELV

Xitanium 50W WH 0.7-1.5A 54V TD DS 230V
9290 048 53201

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 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

Application

- Retail
- Offices

Features

- Operating windows - output current can be set via the Philips MultiOne configurator or with integrated dipswitches or SimpleSet
- 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
- Power ratings: 36-50W
- Compact housing for independent use with integrated strain relief and loop through

Logistical data

Specification item	Value
Product name	Xitanium 50W WH 0.7-1.5A 54V TD DS 230V
EOC	872110312789100
Logistic code 12NC	9290 048 53201
EAN1 (GTIN)	8721103127891
EAN3 (box)	8721103127907
Pieces per box	20
Weight	216 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	0.25	A	@ rated output power @ rated input voltage
Rated input power	55.0	W	@ rated output power @ rated input voltage
Power factor	0.90		@rated output power @ rated input voltage
Total harmonic distortion	20	%	@ rated output power @ rated input voltage
Efficiency	91.0	%	@ rated output power @ rated input voltage @ max. Uout
Rated input voltage DC	186...250	V_{dc}	Performance range. About different DC input forms, please refer to Design in Guide.
Rated input current DC	0.21...0.3	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 (W)	0.5	W	
Isolation input to output	Reinforced		

Electrical output data

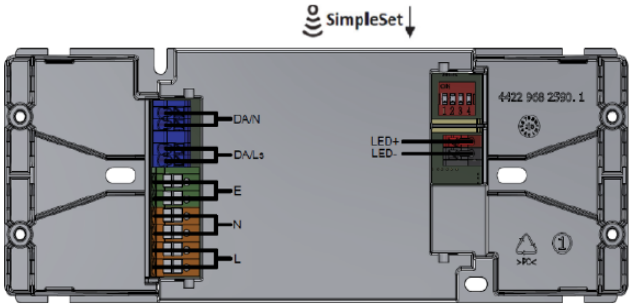
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	24...54	V_{dc}	
Output voltage max.	60	V	Maximum voltage at open load
Output current	700...1500	mA	
Output current min programmable	700	mA	
Min output current	10	mA	
Output current tolerance ±	5	%	@full load
Output current ripple LF	≤ 4	%	Ripple = peak / average, < 3kHz
Output P_{st}^{LM}	≤ 0.3		Within performance operating window
Output SVM	≤ 0.1		Within performance operating window
Output power	0.2...50.0	W	
Minimum performance output power	16.8	W	Power factor > 0.9 and THD < 20%

Control interfaces

Specification item	Value	Unit	Condition
Control method	Corridor Mode, DALI, TD		Output current amplitude dimming. Please refer to design-in guide at www.philips.com/oem for more controllability details.
Dimming range	1...100	%	For latest DALI certification status please visit www.digitalilluminationinterface.org/products
Isolation controls input to output	SELV		acc. IEC61347-1

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	mm² / AWG	solid / stranded wire
Output wire strip length	8.5...9.5	mm	
Control wire cross-section	0.5...1.5	mm² / AWG	solid / stranded wire
Control wire strip length	8.5...9.5	mm	
Maximum cable length	2	m	CISPR15: between LED driver and LED module
Loop Through	Input & Control		



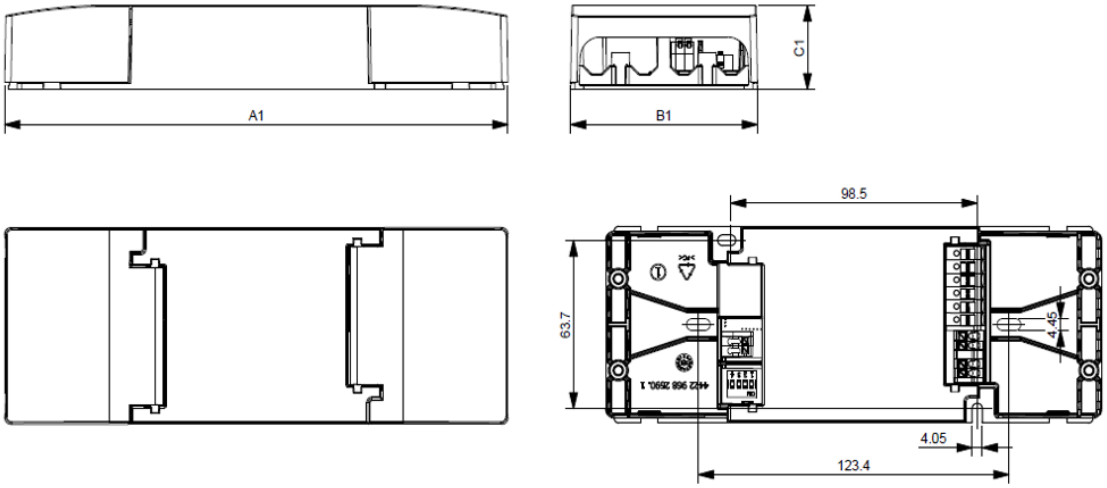
Default Dipswitch Settings				
Iout	Pin1	Pin2	Pin3	Pin4
1500	on	on	on	on
1400	on	on	on	off
1350	on	on	off	on
1300	on	on	off	off
1250	on	off	on	on
1200	on	off	on	off
1150	on	off	off	on
1100	on	off	off	off
1050	off	on	on	on
1000	off	on	on	off
950	off	on	off	on
900	off	on	off	off
850	off	off	on	on
800	off	off	on	off
750	off	off	off	on
700	off	off	off	off

Isolation

Insulation per IEC61347-1	Input	Output	DALI
Input	-	SELV	Basic
Output	SELV	-	SELV
DALI	Basic	SELV	-

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	201	mm	
Width (B1)	75	mm	
Height (C1)	32.5	mm	
Weight	216	gram	

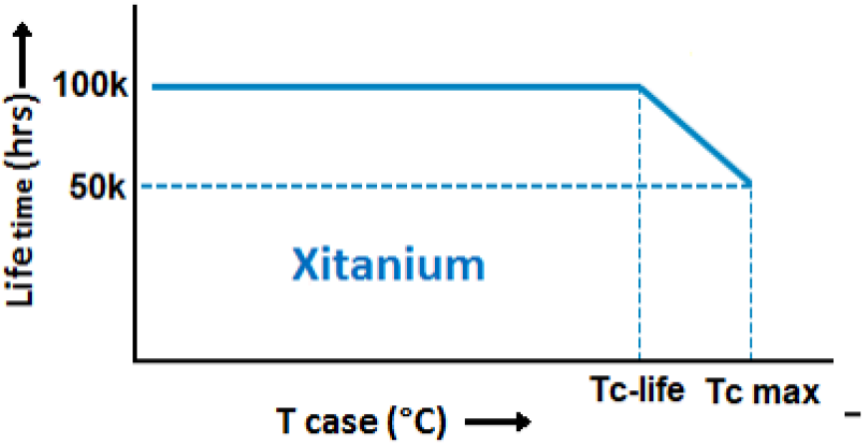


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20...+50	°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	90	°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 Tcmax - 10 degrees. Maximum failures = 10%
Driver lifetime Tcmax	50,000	hours	Measured temperature at Tcase-point is Tc-max. Maximum failures = 10%



Maximum failures = 10%

Maximum failures = 10%

Temperature [°C]	Lifetime	Unit	Condition
90	100000	hr	Temperature measured @Tc point
85	>100000	hr	
80	>100000	hr	

Storage temperature and humidity

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

Programmable features

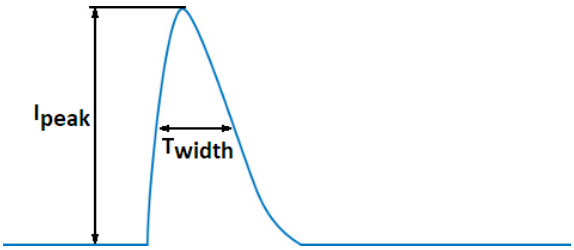
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	DipSwitch, Programmable, SimpleSet	700 mA	
Adjustable Light Output (ALO)	Yes	OFF	
Constant Light Output (CLO)	Yes	OFF	
Touch & Dim (TD)	Yes	ON	
Corridor Mode	Yes	ON	Default: T1=55s, T2=12s, T3=30min
Min Dim Level (%)	Yes	1 %	
DC emergency (DCemDim)	Yes	ON	Default 15%, EOFx range = 1 .. 100% (EOFx = DCemDIM level). Internal fuse rating: T2A 250VDC/AC
DALI control supported at DC operation	Yes	OFF	
OEM Write Protection (OWP)	Yes	OFF	
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
Box configuration	Yes	
Energy metering (DALI part 252)	Yes	Accuracy 4% down to %50 load
Diagnostics (DALI part 253)	Yes	
Diagnostics via Signify tool	Yes	

Inrush current

Specification item	Value	Unit	Condition
Inrush current	25.9	A	Input voltage 230V
Inrush peak width	168	µs	Input voltage 230V, measured at 50% height
Drivers / MCB 16A type B @230V AC	≤ 30	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

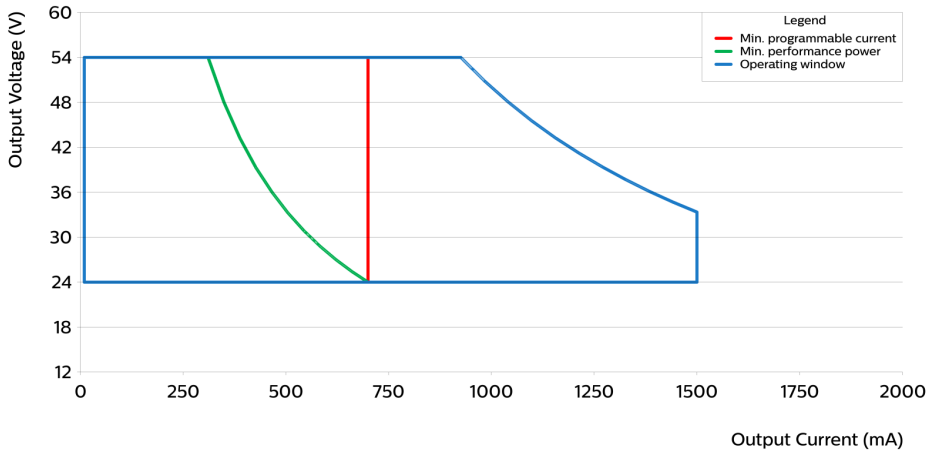
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge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

Application Info (Approbation)

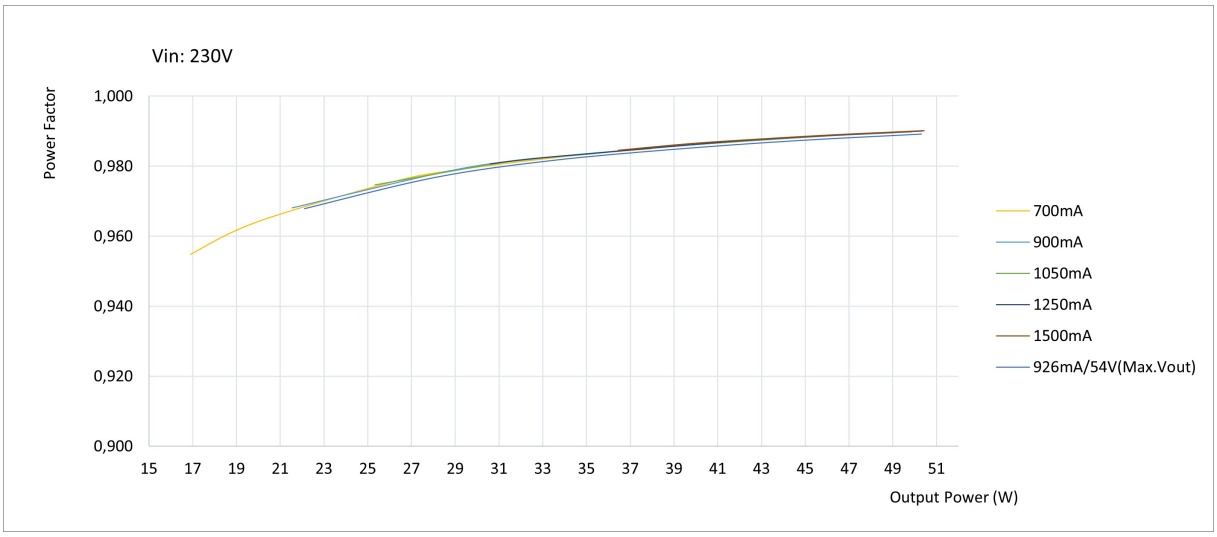
Specification item	Value
Approval marks and Certifications	CCC / CE / DALI 2 / Double-insulated / EAC / EL / ENEC / Independent / RCM / SELV / UA / UKCA / WEEE
Ingress Protection classification (IP)	20
Application	Indoor Point
Mounting Type	Independent

Graphs

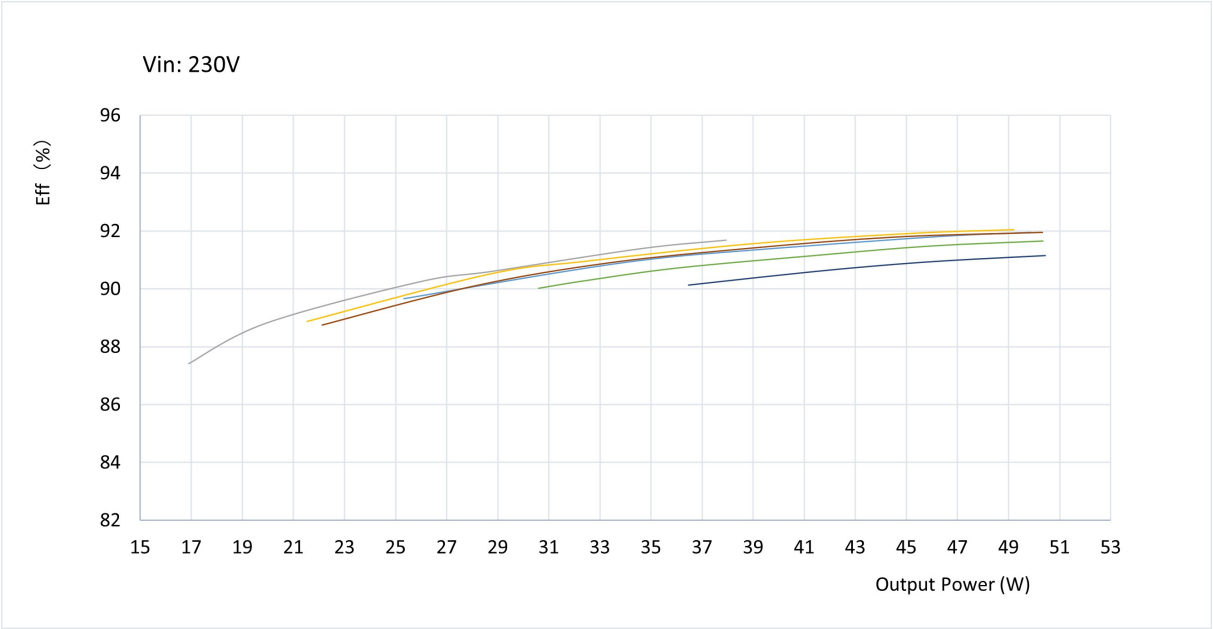
Operating window



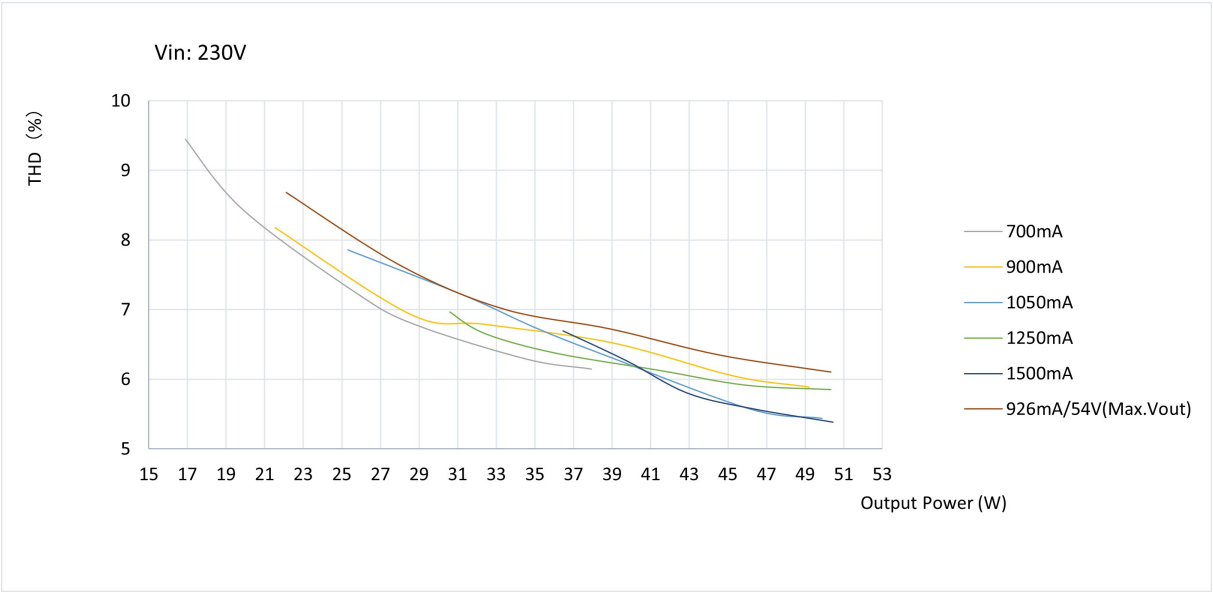
Power factor versus output power



Efficiency versus output power



THD versus output power



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