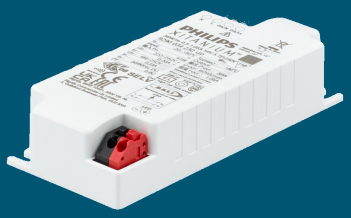
Xitanium

Datasheet

LED drivers – mini and extreme small

Xitanium 20W/m 0.15-0.5A 54V S TD 230V
9290 034 23306



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

Application

- Retail

Features

- Operating windows - Output current can be adjusted via the Philips MultiOne configurator ('TD' drivers) or with a resistor outside the driver
- Multiple versions - DALI dimmable & programmable, trailing-edge dimmable, fixed-current/fixed-output trailing-edge dimmable, fixed-output, and fixed-current/fixed-output
- Wide range of power ratings
- 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

Logistical data

Specification item	Value
Product name	Xitanium 20W/m 0.15-0.5A 54V S TD 230V
EOC	871951448624900
Logistic code 12NC	9290 034 23306
EAN1 (GTIN)	8719514486249
EAN3 (box)	8719514486256
Pieces per box	30
Weight	100 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	@ full output power @ rated input voltage
Max. input current	0.13	A	@ rated output power @ minimum performance input voltage
Rated input power	23.0	W	@ full 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	90.0	%	@ full output power @ rated input voltage
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	≤ 0.23	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. About different DC input forms, please refer to Design in Guide.
Standby Power (no load)	0.5	W	
Isolation input to output	SELV		

Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	5...54	V_{dc}	
Output voltage max.	60	V	Maximum output voltage (rms)
Output current	150...500	mA	
Output current min programmable	150	mA	
Min output current	3.5	mA	
Output current tolerance ±	5	%	@full load
Output current ripple LF	≤ 4	%	Ripple = peak / average, < 3kHz
Output P_{st}^{LM}	≤ 0.3		
Output SVM	≤ 0.1		
Output power	0.0...20.0	W	
Minimum performance output power	5	W	Power factor > 0.9 and THD < 20%

Control interfaces

Specification item	Value	Unit	Condition
Control method	DALI, TD		See design-in guide at www.philips.com/oem for more controllability details.
Dimming range	1...100	%	Default range
Isolation controls input to output	Reinforced		acc. IEC61347-1
Supported DALI parts	207, 251, 252, 253		Check website: https://www.dali-alliance.org/dali/standards.html for details.

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.5...1.5 / 20...16	mm² / AWG	solid / stranded wire
Input wire strip length	8...9	mm	
Output wire cross-section	0.5...1.5 / 20...16	mm² / AWG	solid / stranded wire
Output wire strip length	8...9	mm	
Control wire cross-section	0.5...1.5 / 20...16	mm² / AWG	solid / stranded wire
Control wire strip length	8...9	mm	
Maximum cable length	0.6	m	Total length of wiring including LED module, one way

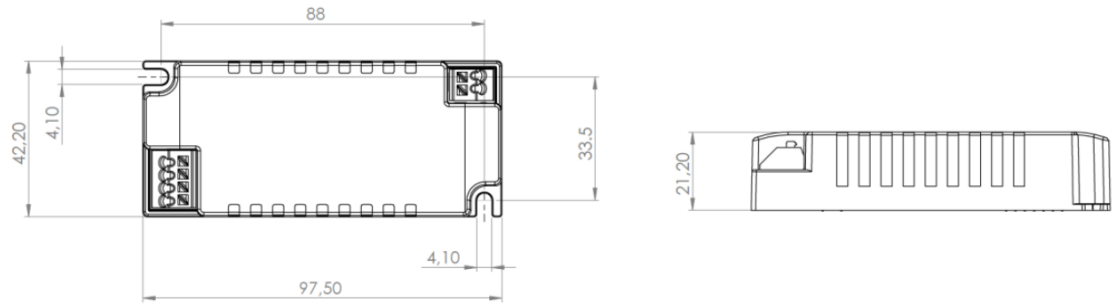


Isolation

Insulation per IEC61347-1	Mains	LED	DALI
Mains	-	SELV	Basic
LED	SELV	-	Reinforced
DALI	Basic	Reinforced	-

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	97.5	mm	
Mounting hole distance (A2)	88	mm	
Width (B1)	42.2	mm	
Height (C1)	21.2	mm	
Mounting hole diameter (D1)	4.1	mm	
Weight	100	gram	

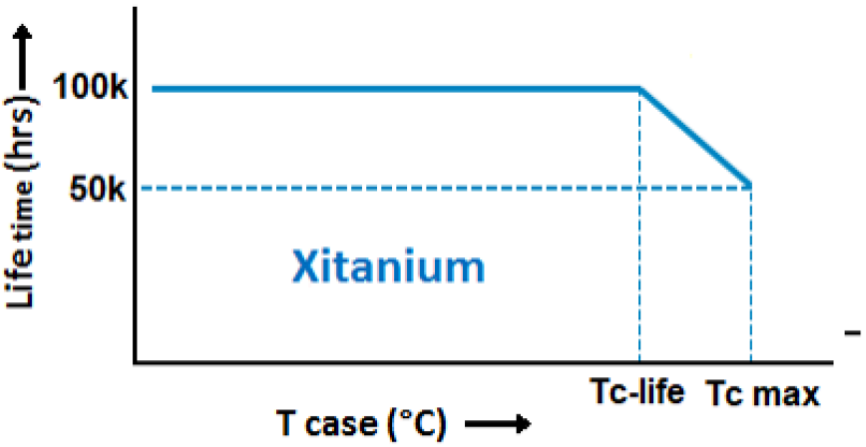


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20...+50	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded
Tcase-max	80	°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
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

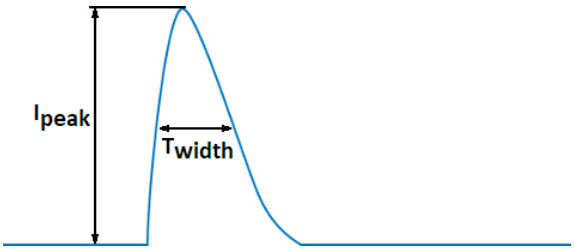
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	Programmable, SimpleSet	150 mA	
Adjustable Light Output (ALO)	Yes	OFF	
Constant Light Output (CLO)	Yes	OFF	
Touch & Dim (TD)	Yes	ON	
Corridor Mode	Yes	OFF	Default: T1=55s, T2=12s, T3=30min
DC emergency (DCemDim)	No		Light output is 100%
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
Energy metering (DALI part 252)	Yes	
Diagnostics (DALI part 253)	Yes	

Inrush current

Specification item	Value	Unit	Condition
Inrush current	6.7	A	Input voltage 230V
Inrush peak width	27	µs	Input voltage 230V, measured at 50% height
Drivers / MCB 16A type B @230V AC	≤ 34	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

Surge immunity

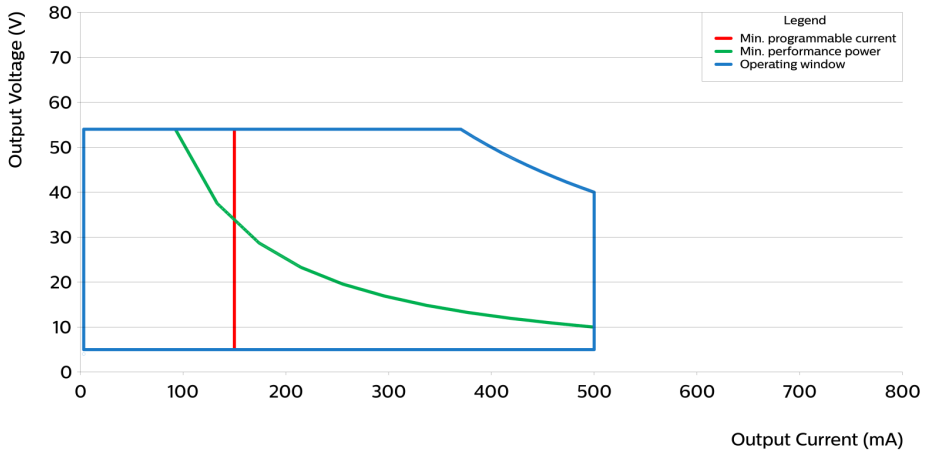
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge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

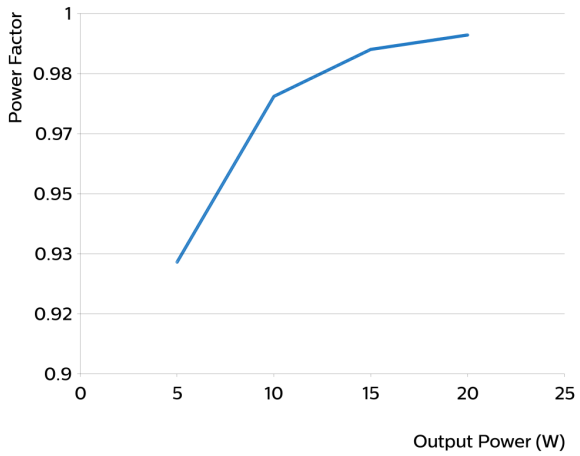
Graphs

Operating window

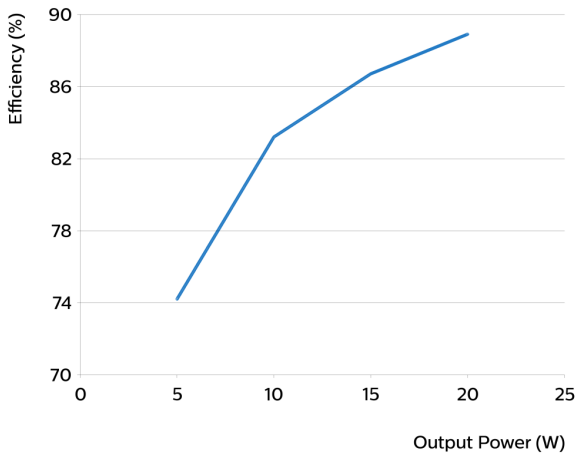


Type	Output current (mA)	Min. output voltage (V)	Max. output voltage (V)	Max. output power (W)
Xitanium 20W/m 0.15-0.5A 54V S TD 230V	150	5	54	8.1
Xitanium 20W/m 0.15-0.5A 54V S TD 230V	200	5	54	10.8
Xitanium 20W/m 0.15-0.5A 54V S TD 230V	250	5	54	13.5
Xitanium 20W/m 0.15-0.5A 54V S TD 230V	300	5	54	16.2
Xitanium 20W/m 0.15-0.5A 54V S TD 230V	350	5	54	18.9
Xitanium 20W/m 0.15-0.5A 54V S TD 230V	400	5	50	20
Xitanium 20W/m 0.15-0.5A 54V S TD 230V	450	5	44	20
Xitanium 20W/m 0.15-0.5A 54V S TD 230V	500	5	40	20

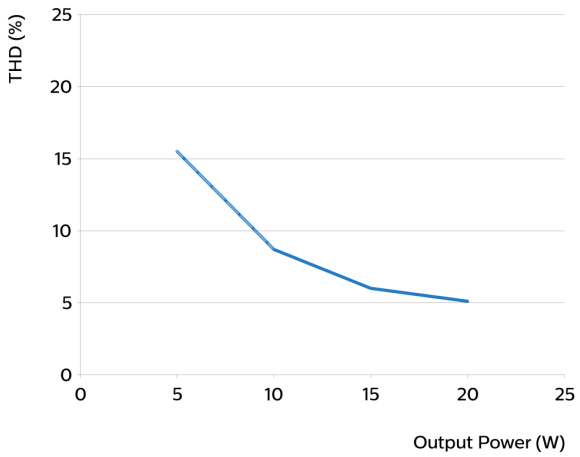
Power factor versus output power



Efficiency versus output power



THD versus output power



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