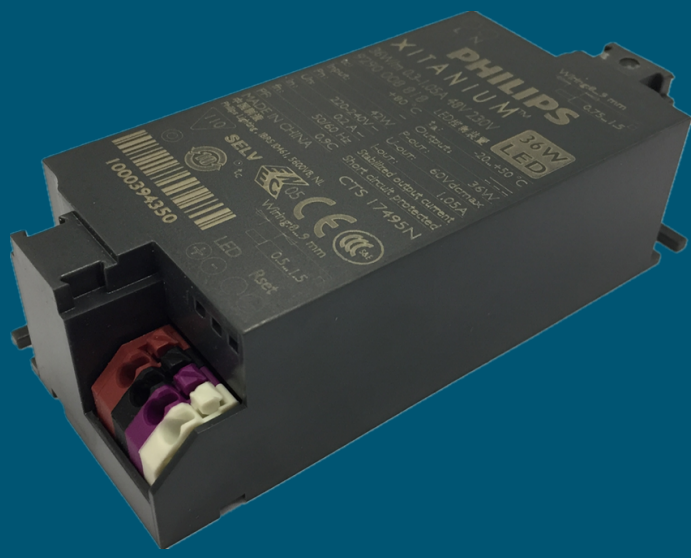
Xitanium

Datasheet

LED drivers – mini and extreme small

Xitanium 20W/m 0.15-0.5A 52V 230V
9290 014 36106



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 52V 230V
EOC	871869682929500
Logistic code 12NC	9290 014 36106
EAN1 (GTIN)	8718696829295
EAN3 (box)	8718696829301
Pieces per box	20
Strain Relief 12NCccc	929001461680 / For China use: 929001461880
Weight	110 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	0.12	A	@ rated output power @ rated input voltage
Max. input current	0.13	A	@ rated output power @ minimum performance 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	86.6	%	@ rated output power @ rated input voltage @ max. Uout
Rated input voltage DC	186...250	V_{dc}	Performance range
Rated input current DC	0.13...0.09	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
Isolation input to output	SELV		

Electrical output data

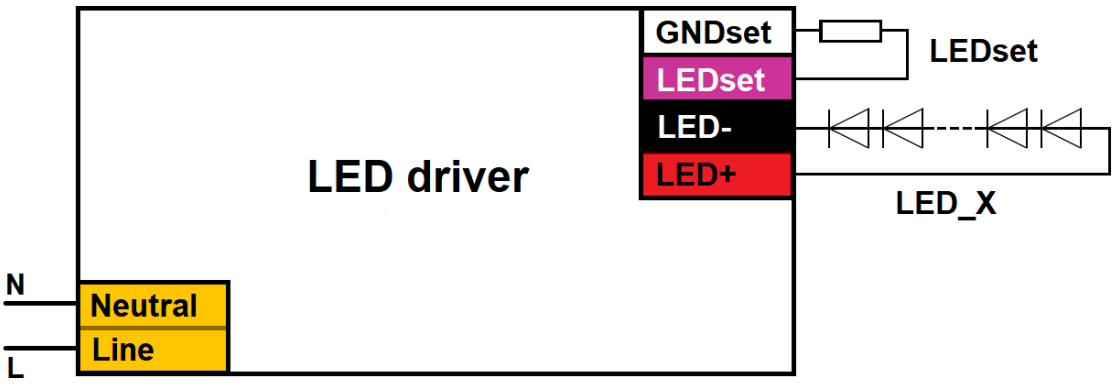
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	24...52	V_{dc}	
Output voltage max.	60	V	Maximum output voltage (rms)
Output current	150...500	mA	
Output current tolerance ±	5	%	@full load
Output current ripple LF	≤ 4	%	Ripple = peak / average, < 3kHz
Output current ripple HF	≤ 0.5	%	
Output P_{st}^{LM}	≤ 0.1		
Output SVM	≤ 0.3		
Output power	6.0...20.0	W	

Control interfaces

Specification item	Value	Unit	Condition
Control method	Fixed		

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.5...1.5 / 20...16	mm^2 / AWG	solid / stranded wire
Input wire strip length	8.5...9.5	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	
Maximum cable length	0.6	m	Total length of wiring including LED module, one way

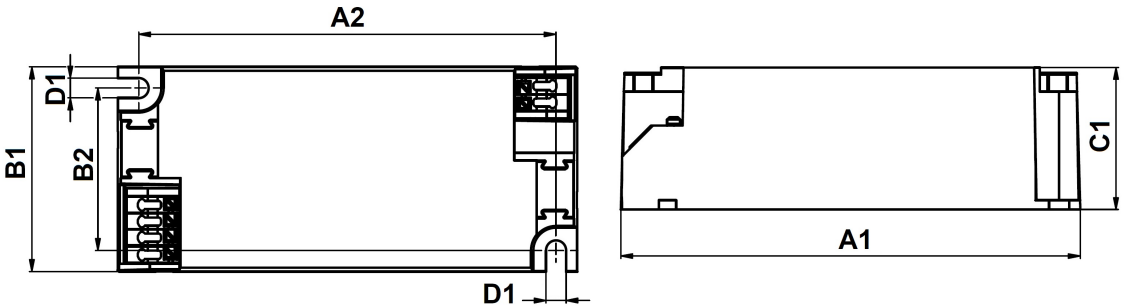


Isolation

Insulation per IEC61347-1	Input	Output+LEDset
Input	-	SELV
Output+LEDset	SELV	-

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	97.2	mm	
Mounting hole distance (A2)	88.5	mm	
Width (B1)	43	mm	
Width (B2)	34	mm	
Height (C1)	30	mm	
Mounting hole diameter (D1)	4.2	mm	
Weight	110	gram	

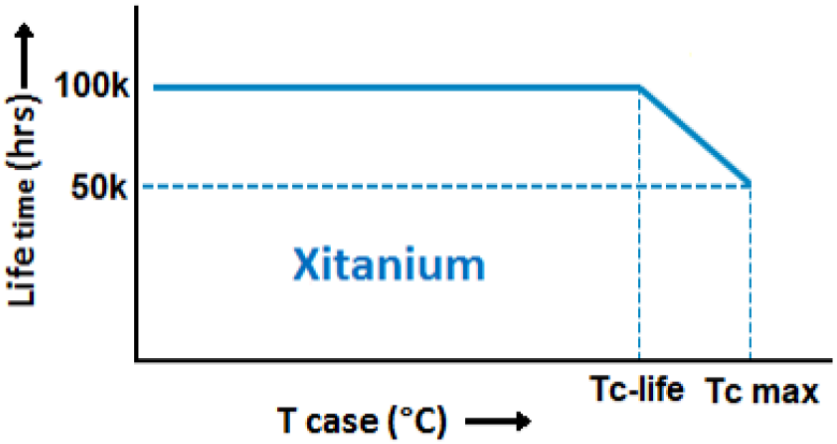


Operational temperatures and humidity

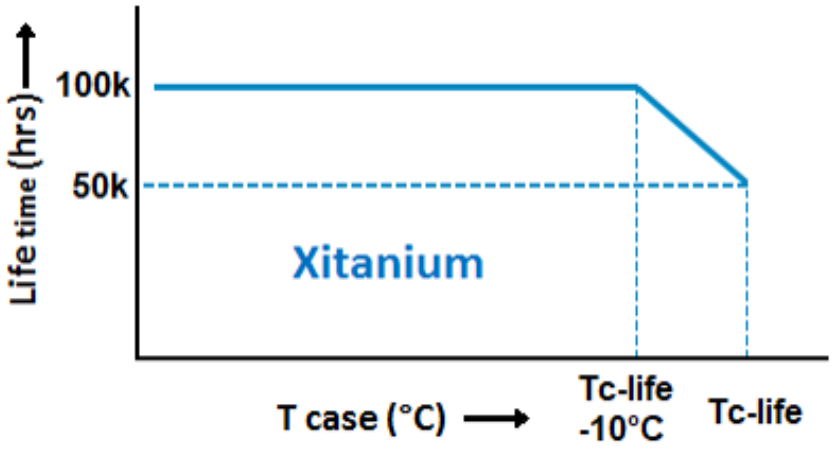
Specification item	Value	Unit	Condition
Ambient temperature	-20...+50	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded
Tcase-max	80	°C	Maximum temperature measured at T_{case}-point
Tcase-life	80	°C	Measured at T_{case}-point
Maximum housing temperature	110	°C	In case of a failure, 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%



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

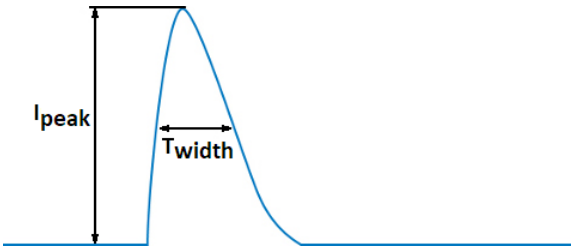
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	LEDset	150 mA	Set the output current via LEDset, do not leave open / short-circuit. See Design-In Guide for resistor value table
DC emergency (DCemDim)	No		With a DC mains the output current is 90%. (EOFi)

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	II	per IEC60598

Inrush current

Specification item	Value	Unit	Condition
Inrush current	4.5	A	Input voltage 230V
Inrush peak width	65	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)	0.5	mA peak	Acc. IEC61347-1. LED module contribution not included

Surge immunity

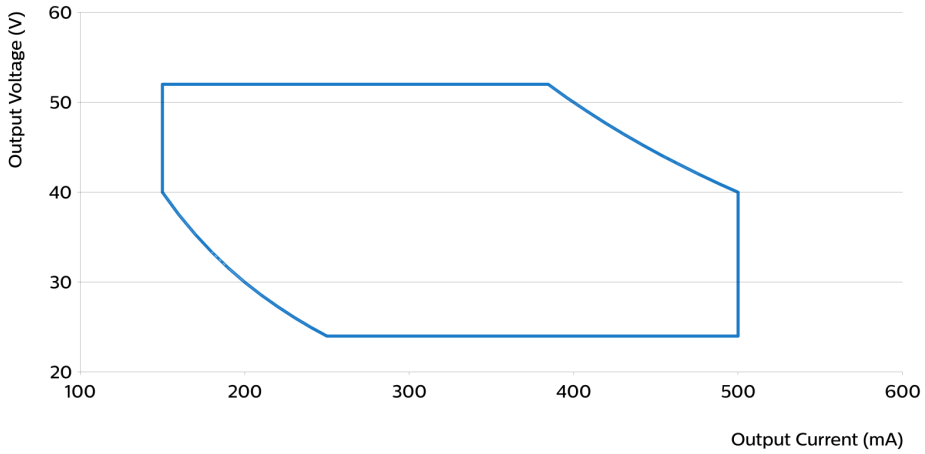
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Application Info (Approbation)

Specification item	Value
Approval marks and Certifications	CCC / CE / EL / ENEC / SELV
Ingress Protection classification (IP)	20
Application	Indoor Point
Mounting Type	Built-in / Independent

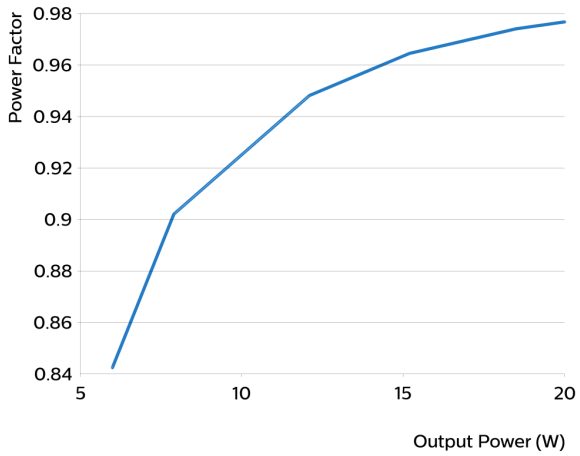
Graphs

Operating window

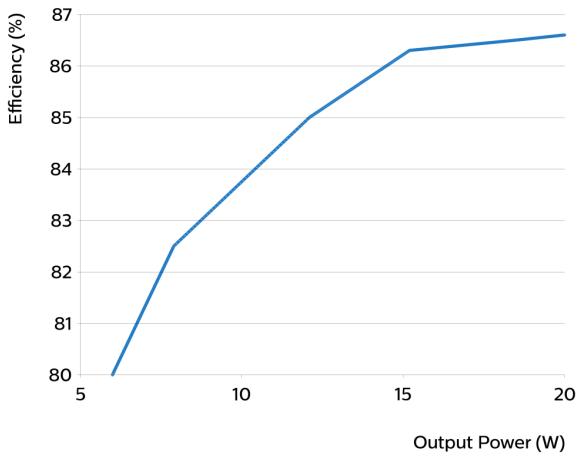


Type	Output current (mA)	Min. output voltage (V)	Max. output voltage (V)	Max. output power (W)
Xitanium 20W/m 0.15-0.5A 52V 230V	150	40	52	7.8
Xitanium 20W/m 0.15-0.5A 52V 230V	200	30	52	10.4
Xitanium 20W/m 0.15-0.5A 52V 230V	250	24	52	13
Xitanium 20W/m 0.15-0.5A 52V 230V	300	24	52	15.6
Xitanium 20W/m 0.15-0.5A 52V 230V	350	24	52	18.2
Xitanium 20W/m 0.15-0.5A 52V 230V	400	24	50	20
Xitanium 20W/m 0.15-0.5A 52V 230V	450	24	44	20
Xitanium 20W/m 0.15-0.5A 52V 230V	500	24	40	20

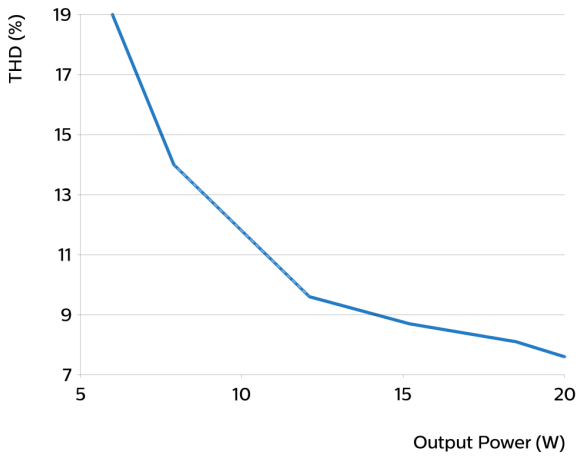
Power factor versus output power



Efficiency versus output power



THD versus output power



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