PHILIPS

Xitanium

LED driver

Datasheet

LED drivers – mini and extreme small

Xitanium 36W/m 0.3-1.05A 54V S TD 230V

9290 014 85206

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

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 SH housing for independent use with strain relief and loop-through

Application

- Retail

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 range	50…60	Hz	Performance range
Rated input current	0.2	A	@ full output power @ rated input voltage
Max. input current	0.22	A	@ rated output power @ minimum performance input voltage
Rated input power	41	W	@ full output power @ rated input voltage
Power factor	0.9		@ rated output power @ rated input voltage
Total harmonic distortion	20	%	@ rated output power @ rated input voltage
Efficiency	90.5	%	@ full output power @ rated input voltage
Rated input voltage DC range	186…250	V_{dc}	Performance range
Rated input current DC range	≤ 0.23	A_{dc}	Performance range
Input voltage AC range	198…264	V_{ac}	Operational range
Input frequency AC range	47.5…63	Hz	Operational range
Input voltage DC range	168…275	V_{dc}	Operational range
Standby Power	0.5	W	
Isolation input to output	SELV		

Electrical output data

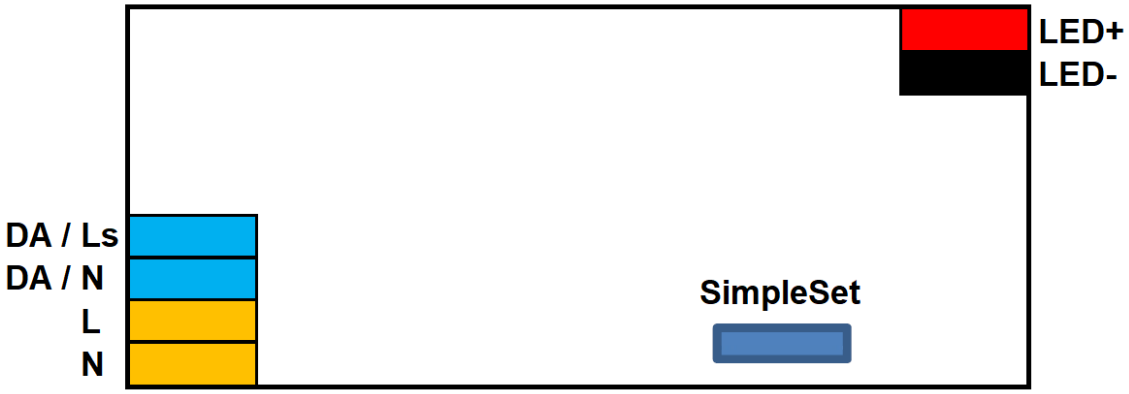
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	24…54	V_{dc}	
Output voltage max.	60	V	Maximum output voltage (rms)
Output current	0.3…1.05	A	
Output current tolerance	± 5	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average, < 3kHz
Output current ripple HF	≤ 10	%	
Output power	11…36	W	

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	DALI, Touch & Dim (TD)		
Dimming range	1…100	%	Default range
Isolation controls input to output	Reinforced		acc. IEC61347-1

Wiring and Connections

Specification item	Value	Unit	Condition
Input wire cross-section	0.5…1.5	mm^2	Type250, solid / stranded wire
	16…20	AWG	Type250, solid / stranded wire
Input wire strip length	8…9	mm	
Input wire cross-section	0.75…1.5	mm^2	Type250 (Independent), solid / stranded wire
	16…18	AWG	Type250 (Independent), solid / stranded wire
Input wire strip length	8…9	mm	
Output wire cross-section	0.5…1.5	mm^2	Type250, solid / stranded wire
	16…20	AWG	Type250, solid / stranded wire
Output wire strip length	8…9	mm	
Control wire cross-section	0.5…1.5	mm^2	Type250, solid / stranded wire
	16…20	AWG	Type250, solid / stranded wire
Control wire strip length	8…9	mm	
Maximum cable length	600	mm	Total length of wiring including LED module, one way

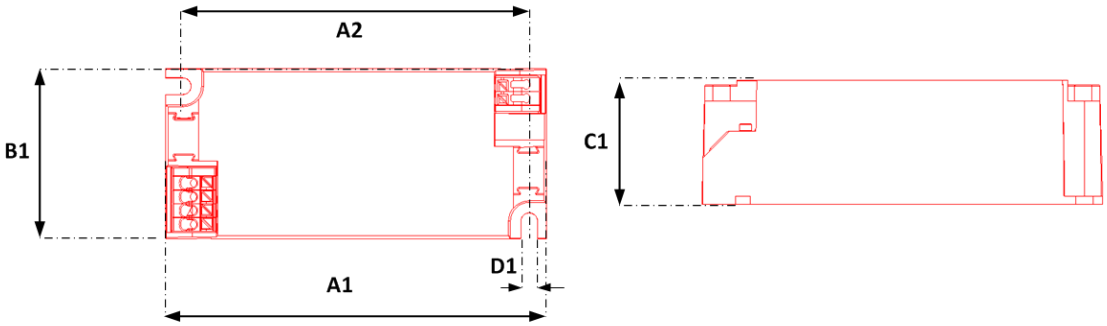


Insulation

Insulation per IEC61347-1	Mains	LED	DALI
Mains		SELV	Basic
LED	SELV		Re-inforced
DALI	Basic	Re-inforced	

Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	97.2	mm	
Width (B1)	43	mm	
Height (C1)	30	mm	
Fixing hole diameter (D1)	4.2	mm	
Fixing hole distance (A2)	88.5	mm	
Weight	88	gram	



Logistical data

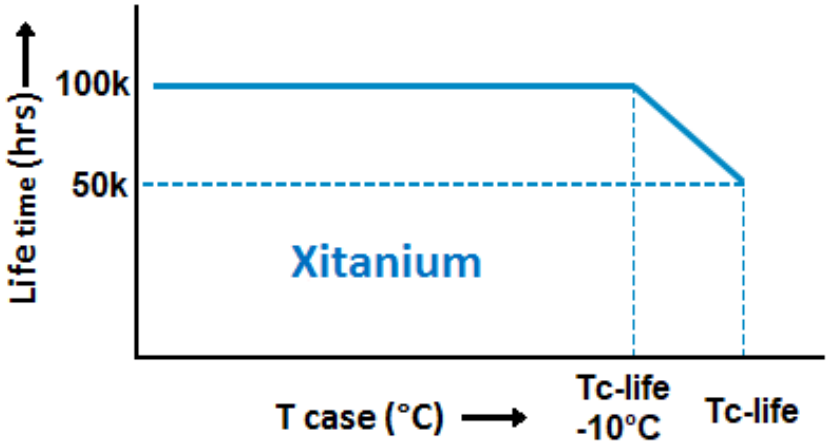
Specification item	Value
Product name	Xitanium 36W/m 0.3-1.05A 54V S TD 230V
EOC	871869966564700
Logistic code 12NC	9290 014 85206
EAN3	8718699665654
Pieces per box	20

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%



Storage temperature and humidity

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

Programmable features

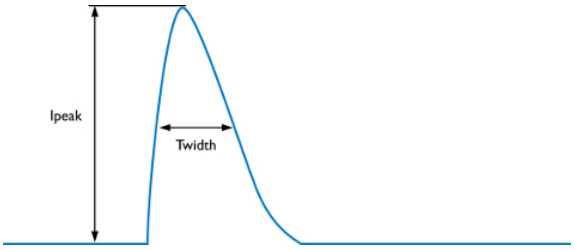
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	Programmable, SimpleSet	700 mA	
DC emergency dimming (DCemDim)	No		Light output is 100%
Corridor mode	Yes		Default: T1=55s, T2=12s, T3=30min

Features

Specification item	Value	Remark	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

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	18	A	Input voltage 230V
Inrush current T_{width}	250	µs	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 34	pcs	Indicative value



MCB	Rating	Relative number of LED drivers
B	4A	25%
B	6A	40%
B	10A	63%
B	13A	81%
B	16A	100% (stated in datasheet)
B	20A	125%
B	25A	156%
B	32A	200%
B	40A	250%
C	4A	42%
C	6A	63%
C	10A	104%
C	13A	135%
C	16A	170%
C	20A	208%
C	25A	260%
C	32A	340%
C	40A	415%

Driver touch current / protective conductor 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

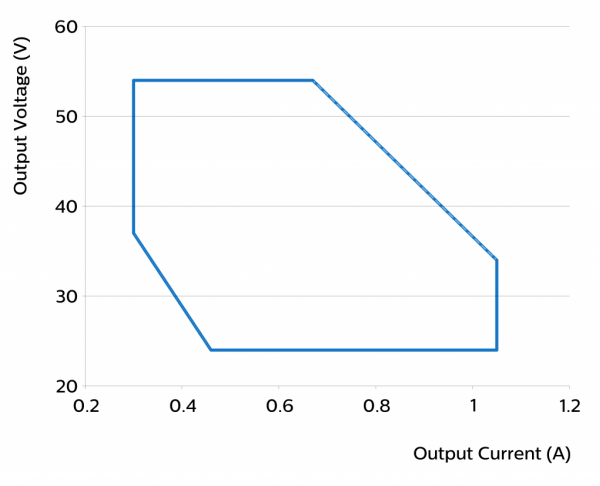
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge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

Application Info

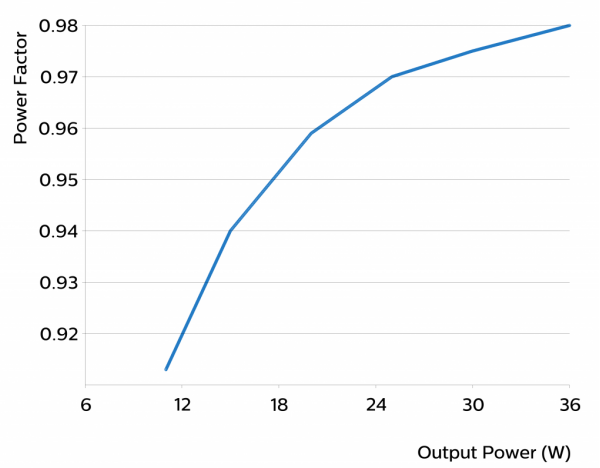
Specification item	Value
Approval marks	CE / DALI 2 / Double-insulated / EL / ENEC / SELV
Ingress Protection classification (IP)	20

Graphs

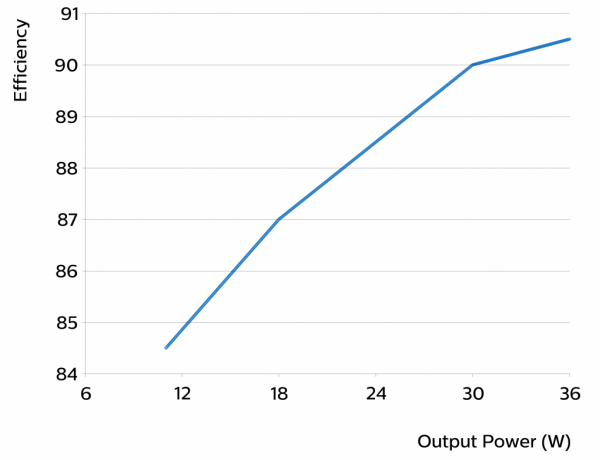
Operating window



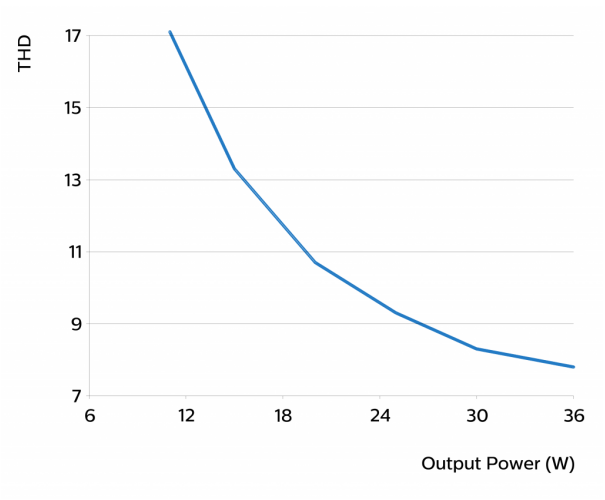
Power factor versus output power



Efficiency versus output power



THD versus output power



Date of release: November 28, 2019 v1

www.philips.com/oem