PHILIPS

Xitanium

LED driver

Datasheet

Xitanium non-isolated DALI dimmable & programmable

Xitanium 60W 0.15-0.5A 220V TD16 230V

9290 016 81606

Xitanium non-isolated DALI drivers are ideal for High Voltage (HV) linear systems and stand on three pillars: quality of light, reliability and flexibility.

By using Xitanium LED drivers in your luminaires, you can be sure to offer your customers high quality of light without visual flicker and stroboscopic effects. The reliability of our drivers is based on in-depth electronics knowledge and extensive testing.

Finally, application-oriented operating windows offer the flexibility required to provide the stable lumen output and light quality levels that lighting specifiers and architects demand.

Benefits

- High quality of light
- High reliability
- Future-proof flexibility
- Fast and easy wireless programming with SimpleSet (if applicable)
- Flicker and noise free dimming due to amplitude modulation dimming (AM)

Features

- High efficiency
- Wide operating windows - output current can be adjusted via the Philips MultiOne software, SimpleSet (NFC) and/or LEDset (resistor)
- Low ripple current

Application

- Offices
- Retail: supermarkets, shopping malls

October 2019

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	220…240	V_{ac}	Nominal range
Rated input voltage	230	V_{ac}	
Rated input frequency range	50…60	Hz	Nominal range
Rated input current	0.3	A	@ rated output power @ rated input voltage
Rated input power	66	W	@ rated 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	≤ 93	%	@ rated output power @ rated input voltage
Rated input voltage DC range	186…250	V_{dc}	Nominal range
Rated input current DC range	≤ 0.35	A_{dc}	Nominal range
Input voltage AC range	198…264	V_{ac}	Operational range
Input frequency AC range	45…66	Hz	Operational range
Input voltage DC range	168…275	V_{dc}	Operational range
Standby Power	0.25	W	
Isolation input to output	No		

Electrical output data

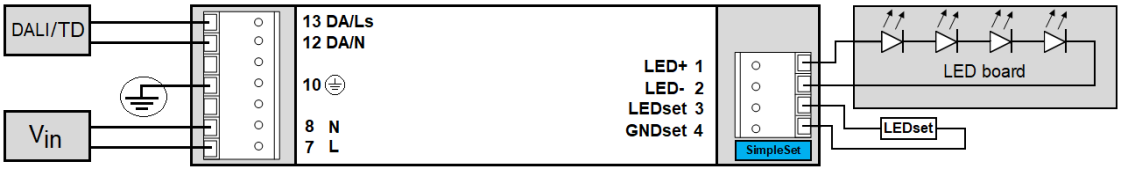
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	50…220	V_{dc}	
Output voltage max.	250	V	Maximum output voltage (rms)
Output current	0.15…0.5	A	
Output current min programmable	150	mA	
Output current min dimming	3	mA	
Output current tolerance	± 5	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average. Up to 2kHz.
Output P_{st}^{LM}	≤ 1		
Output SVM	≤ 0.4		
Output power	17…60	W	

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	Corridor Mode, DALI, Touch & Dim (TD)		DALI Parts: 101, 102, 207, 251, 252, 253
Dimming range	1…100	%	with AOC >300mA 1% dimming possible; AOC < 300mA min. physical current = 3mA
Isolation controls input to output	Basic		

Wiring and Connections

Specification item	Value	Unit	Condition
Input wire cross-section	0.5…1.5	mm^2	WAGO744, solid wire
	16…20	AWG	WAGO744, solid wire
Input wire strip length	8…9	mm	
Output wire cross-section	0.5…1.5	mm^2	WAGO744, solid wire
	16…20	AWG	WAGO744, solid wire
Output wire strip length	8…9	mm	
Maximum cable length	2000	mm	Total length of wiring including LED module, one way. For longer wiring please double check EMI behavior of luminaire

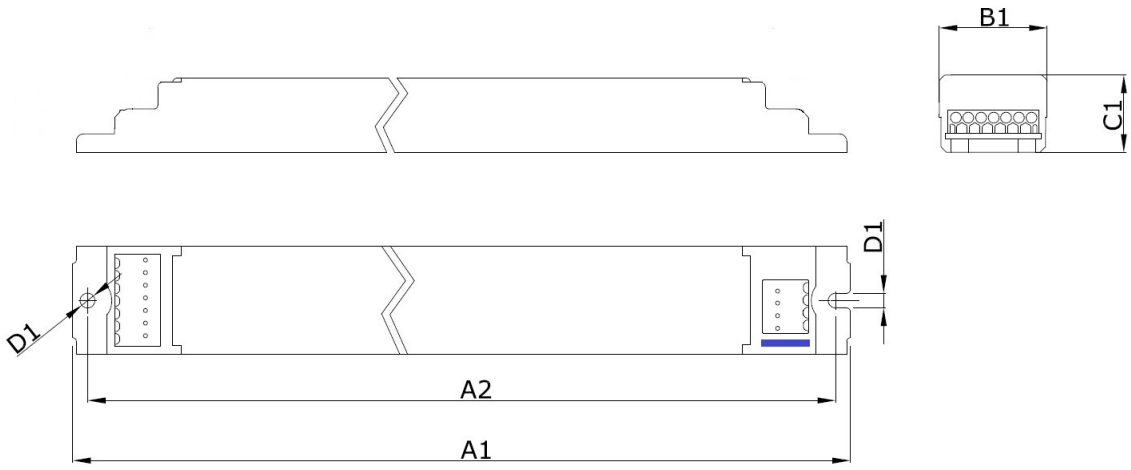


Insulation

Insulation	Input	Output	DALI	Housing
Input		Non	Basic	Basic
Output	Non		Basic	Basic
DALI	Basic	Basic		Basic
Housing	Basic	Basic	Basic	

Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	280	mm	
Width (B1)	30	mm	
Height (C1)	16	mm	
Fixing hole diameter (D1)	4.1	mm	
Fixing hole distance (A2)	270	mm	
Weight	180	gram	



Logistical data

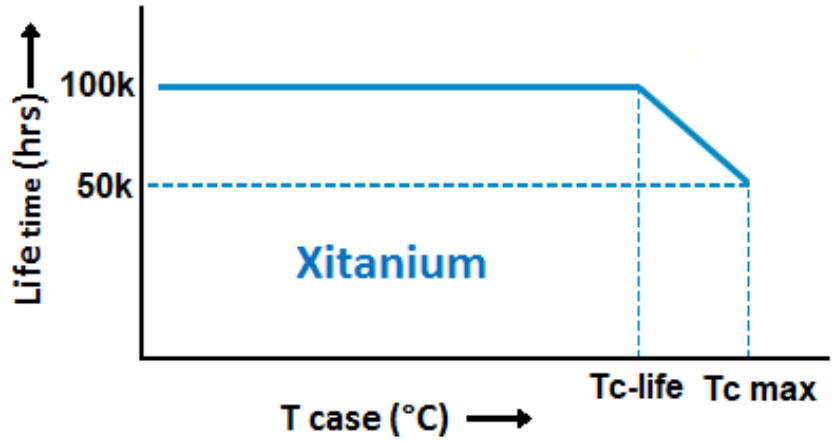
Specification item	Value
Product name	Xitanium 60W 0.15-0.5A 220V TD16 230V
EOC	871869965371200
Logistic code 12NC	9290 016 81606
Pieces per box	24

Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-25…+50	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded
Tcase-max	80	°C	lifetime 50khrs;
Tcase-life	70	°C	lifetime 100khrs; Measured at T_c-point
Maximum housing temperature	110	°C	In case of a failure. Thermal protection: 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 Tcase-life. Maximum failures = 10%
Mains switching cycles	> 100,000	switches	See Design-in guide for detailed explanation



Storage temperature and humidity

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

Programmable features

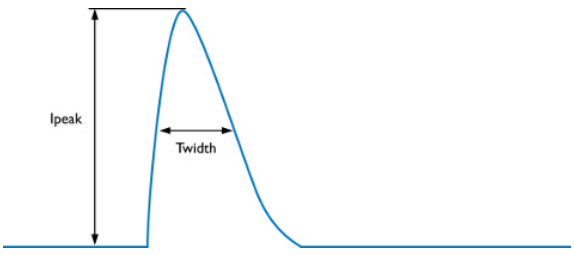
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	LEDset, Programmable, SimpleSet	150 mA	
NTC on LEDset	Yes	OFF	
Constant Lumen Over Lifetime (CLO)	Yes	OFF	
Adjustable Light Output (ALO)	Yes	OFF	
Touch & Dim (TD)	Yes	ON	
Minimum dim level	Yes	1 %	
DC emergency dimming (DCemDim)	Yes	ON	Default 15%, EOFx range = 1 .. 100% (EOFx = DCemDIM level)
Corridor mode	Yes	ON	Default: T1=55s, T2=12s, T3=30min
OEM OverWrite Protection (OWP)	Yes	OFF	
Luminaire Info	Yes		

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		per IEC60598
Output Overvoltage Detection	Yes		
Energy metering	Yes		
Diagnostics	Yes		

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	20.9	A	Input voltage 230V
Inrush current T_{width}	192	µs	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 29	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 Protective Conductor Current (ins. Class I)	0.5	mA rms	Acc. IEC60598-1. LED module contribution not included

Surge immunity

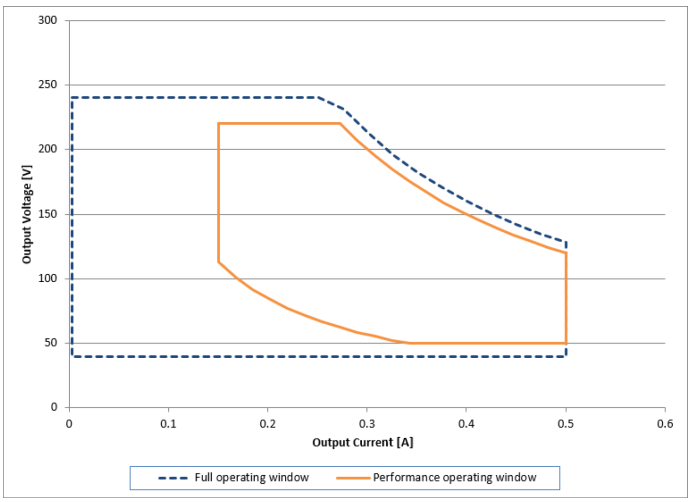
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	L- N Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	L/N - PE Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	1	kV	DALI/TD - DALI-TD Acc. IEC61000-4-5. 2 Ohm,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

Application Info

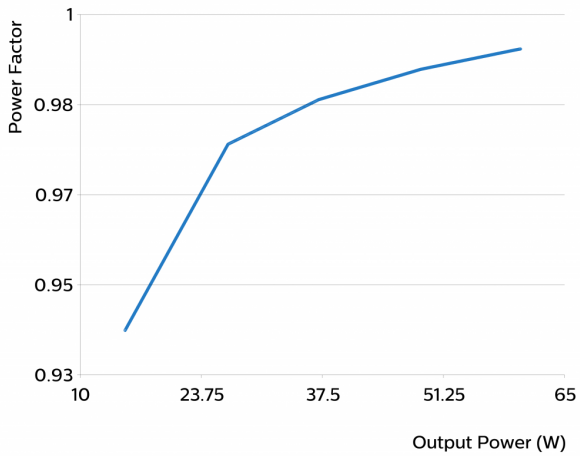
Specification item	Value
Approval marks	CCC / CE / ENEC / VDE-EMC
Ingress Protection classification (IP)	20

Graphs

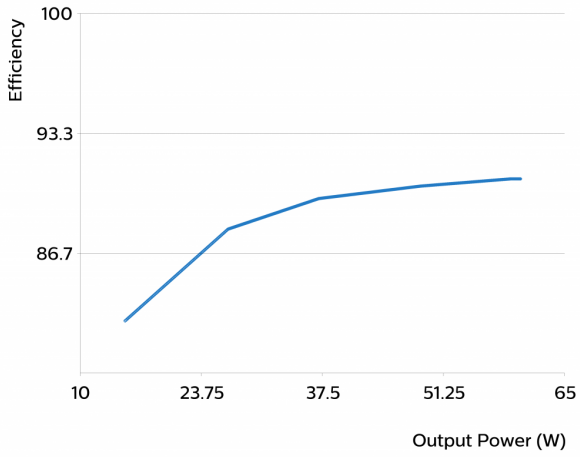
Operating window



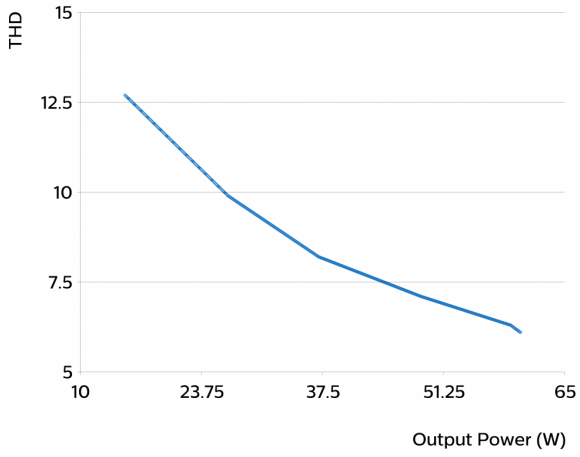
Power factor versus output power



Efficiency versus output power



THD versus output power



Date of release: October 29, 2019 v2

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