

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium non-isolated DALI dimmable & programmable

Xitanium 35W 0.08-0.35A 220V TD21 230V

9290 016 81706

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

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	0.18	A	@ rated output power @ rated input voltage
Rated input power	40	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	90	%	@ rated output power @ rated input voltage
Rated input voltage DC range	186...250	V _{dc}	Nominal range
Rated input current DC range	≤ 0.22	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	0.3	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	Peak voltage at open load
Output current	0.08...0.35	A	Full output current setting
Output current min programmable	80	mA	
Output current min dimming	2	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	10...35	W	

Electrical data controls input

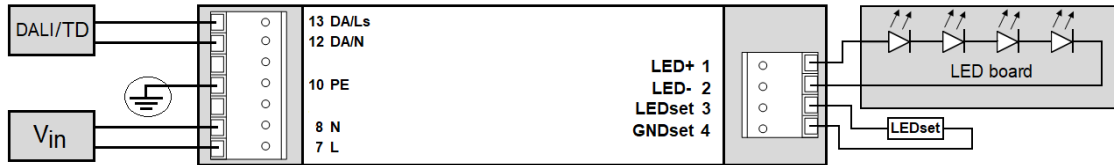
Specification item	Value	Unit	Condition
Control method	Corridor Mode, DALI, Touch & Dim (TD)		DALI parts: 101, 102, 207, 251
Dimming range	1...100	%	with AOC >300mA 1% dimming possible; AOC < 300mA min. physical current = 3mA
Isolation controls input to output	Basic		

Logistical data

Specification item	Value
Product name	Xitanium 35W 0.08-0.35A 220V TD21 230V
Order code	871869965373600
Logistic code 12NC	9290 016 81706
Pieces per box	24

Wiring & 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

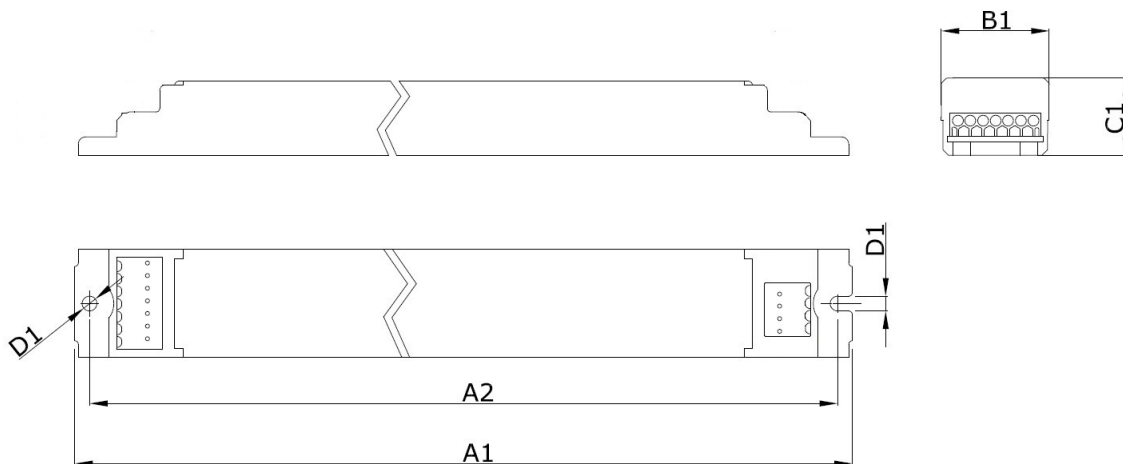


Insulation

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)	21	mm	
Fixing hole diameter (D1)	4.1	mm	
Fixing hole distance (A2)	270	mm	
Weight	180	gram	

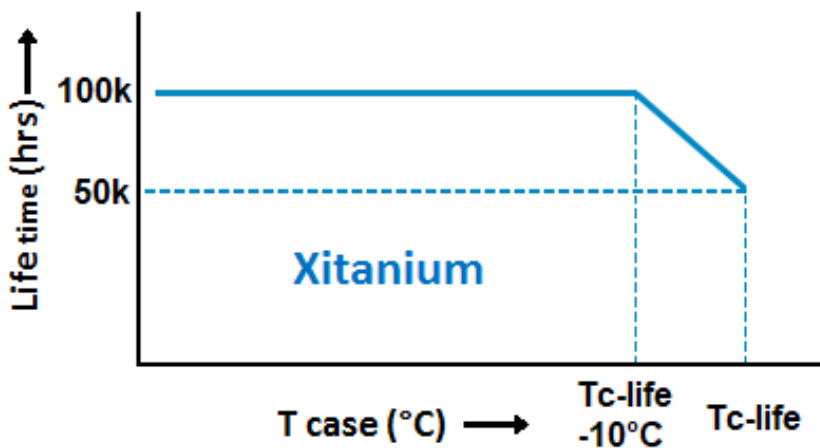


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-25...+50	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded.
Tcase-max	75	°C	Maximum temperature measured at T _{case} -point
Tcase-life	75	°C	Measured at T _{case} -point
Maximum housing temperature	110	°C	In case of a failure
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%
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	Value	Remark	Condition
Set output current (AOC)	LEDset, Programmable	See Design-in guide.	Default output current: ≤ 80 mA
Constant Lumen Over Lifetime (CLO)	Yes		
DC emergency dimming (DCemDIM)	Yes		Current output decreased to 15%
Corridor mode	Yes	See Design-in guide	Default: T1=55s, T2=12s, T3=30min
Energy metering	No		
Diagnostics	No		
Adjustable Light Output (ALO)	Yes		
Luminaire Info	Yes		
Minimum dim level	Yes		
Touch & Dim (TD)	Yes		
OEM OverWrite Protection (OWP)	Yes		

Features

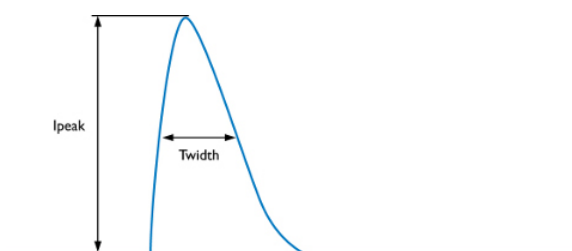
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I		per IEC60598
Output Overvoltage Detection	Yes		

Certificates and standards

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

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	23.1	A	Input voltage 230V
Inrush current T_{width}	221	μ s	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 22	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. IEC61347-1. LED module contribution not included

Surge immunity

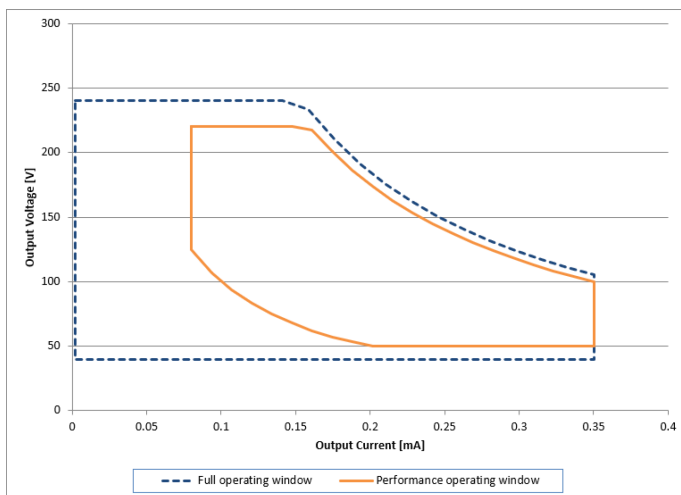
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	L-N Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	L/N - PE Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	1	kV	DALI/TD - DALI-TD Acc. IEC61000-4-5. 2 Ohm,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

Factory default settings

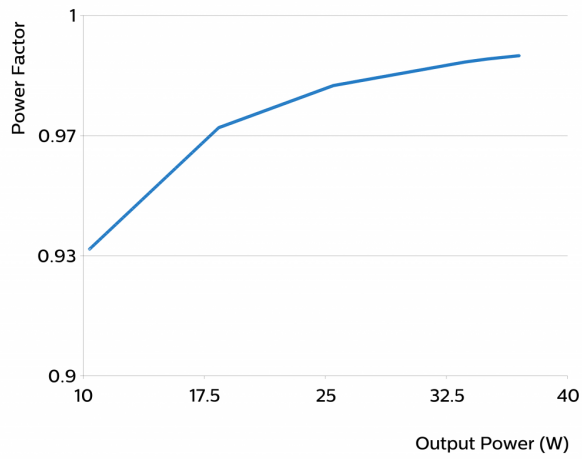
Specification item	Default setting	Remark	Condition
AOC	80	mA	
Touch & Dim (TD)	ON		
Minimum dim level	1	%	

Graphs

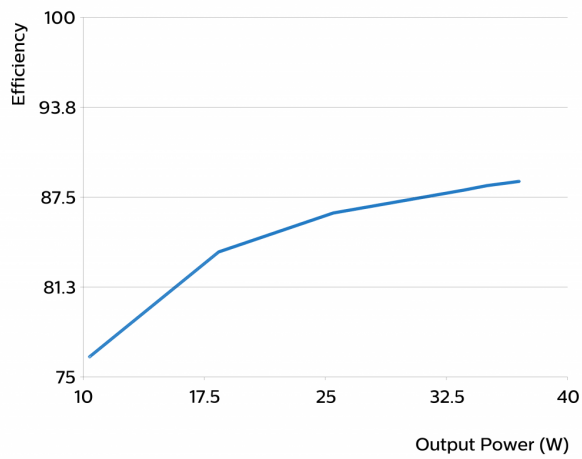
Operating window



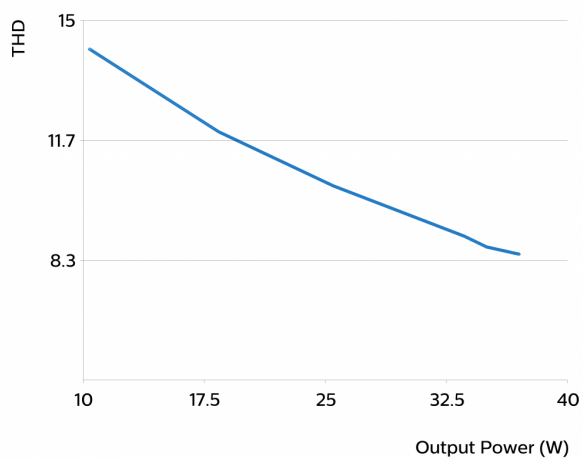
Power factor versus output power



Efficiency versus output power



THD versus output power





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