PHILIPS

Xitanium

LED driver

Datasheet

Xitanium non-isolated DALI dimmable & programmable iXt

Xitanium 150W 0.2-0.7A 300V iXt TD 230V

9290 016 85706

Xitanium non-isolated DALI drivers 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 your complete lighting system is enhanced as our Industry Xtreme drivers offer longer lifetime, high surge specifications and a wide ambient temperature range.

Finally, application-oriented operating windows offer the flexibility required to provide the stable lumen output and light quality levels that are required in demanding industrial applications.

Benefits

- High quality of light
- High reliability
- Future-proof flexibility
- Fast and easy wireless programming with SimpleSet
- 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) or LEDset (resistor)
- Reduced ripple current
- Industry Xtreme (iXt) drivers offer longer life time, higher surge specifications and a wide T-ambient range

Application

- Offices
- Retail: supermarkets, shopping malls
- Indoor industry applications: warehouses, distribution centers, cold storage, manufacturing

April 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	0.72	A	@ rated output power @ rated input voltage
Rated input power	159	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	95	%	@ rated output power @ rated input voltage
Rated input voltage DC range	186…250	V_{dc}	Nominal range
Rated input current DC range	≤ 0.86	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	100…300	V_{dc}	
Output voltage max.	330	V	Peak voltage at open load
Output current	0.2…0.7	A	Full output current setting
Output current min programmable	200	mA	
Output current min dimming	4	mA	
Output current tolerance	± 5	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average
Output current ripple HF	≤ 4	%	
Output power	43…150	W	

Electrical data controls input

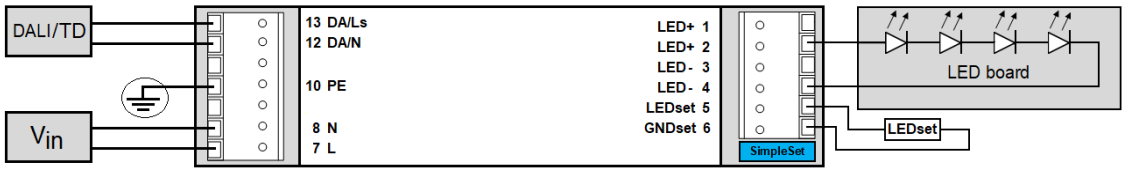
Specification item	Value	Unit	Condition
Control method	DALI, Touch & Dim (TD)		DALI Parts: 101, 102, 207, 251, 252, 253
Dimming range	1…100	%	lower-25°C and higher+50°C dimming to be set to 10%
Isolation controls input to output	Basic		

Logistical data

Specification item	Value
Product name	Xitanium 150W 0.2-0.7A 300V iXt TD 230V
Order code	871869968858500
Logistic code 12NC	9290 016 85706
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

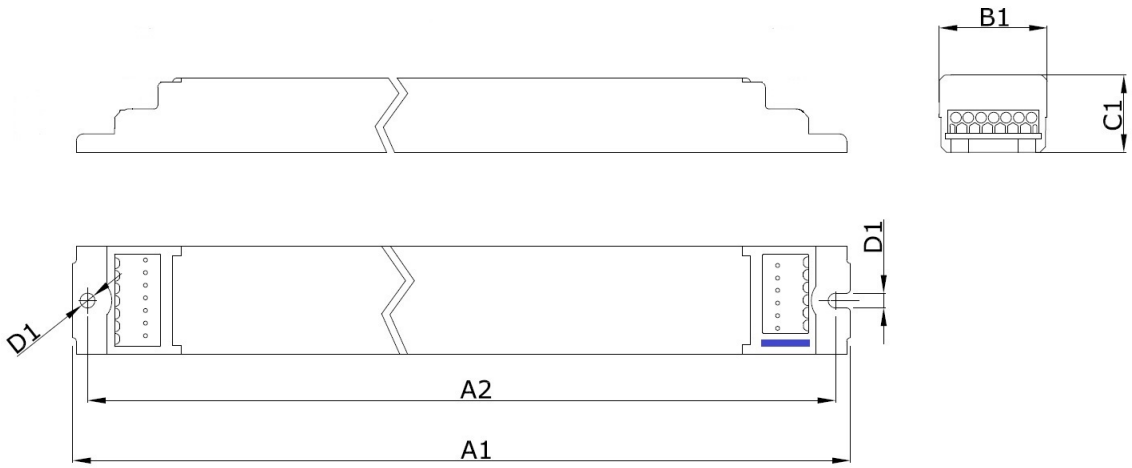


Insulation

Insulation	input	output	DALI	PE
input		Non	Basic	Basic
output	Non		Basic	Basic
DALI	Basic	Basic		Basic
PE	Basic	Basic	Basic	

Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	360	mm	
Width (B1)	30	mm	
Height (C1)	21	mm	
Fixing hole diameter (D1)	4.1	mm	
Fixing hole distance (A2)	350	mm	
Weight	284	gram	

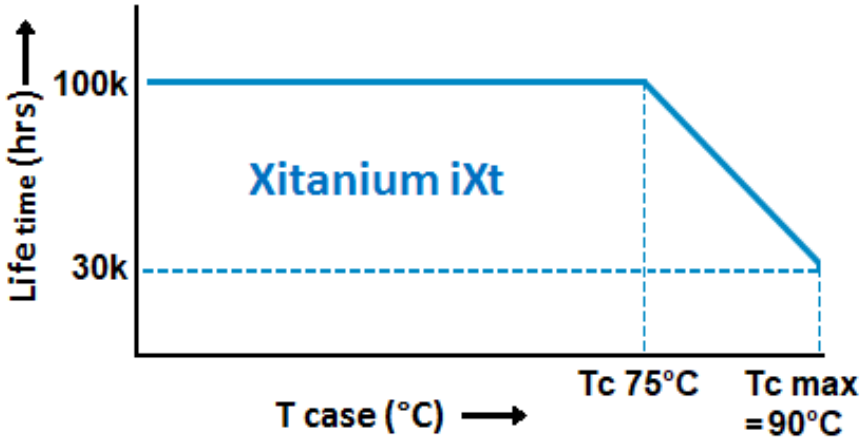


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40…+60	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded. Below -30°C DALI performance cannot be guaranteed.
Tcase-max	90	°C	lifetime 30khrs;
Tcase-life	75	°C	lifetime 100khrs; Measured at T_c-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	100,000	hours	Measured temperature at T_{case}-point is T_{case}-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	-40…+85	°C	
Relative humidity	5…95	%	Non-condensing

Programmable features

Specification item	Value	Remark	Condition
Set output current (AOC)		See Design-in guide.	Default output current: = 200 mA
LED module temperature derating (MTP)	No		
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	Yes		
Diagnostics	Yes		

Features

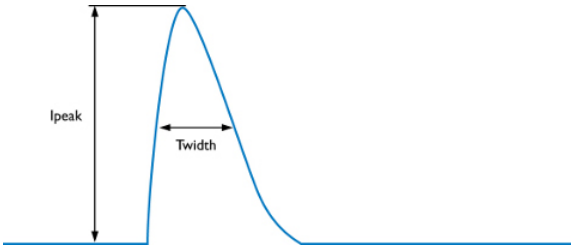
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I		per IEC60598
Output Overvoltage Detection	Yes		

Certificates and standards

Specification item	Value
Approval marks	CE / ENEC / F-mark
Ingress Protection classification (IP)	20

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	5.1	A	Input voltage 230V
Inrush current T_{width}	760	µs	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 12	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

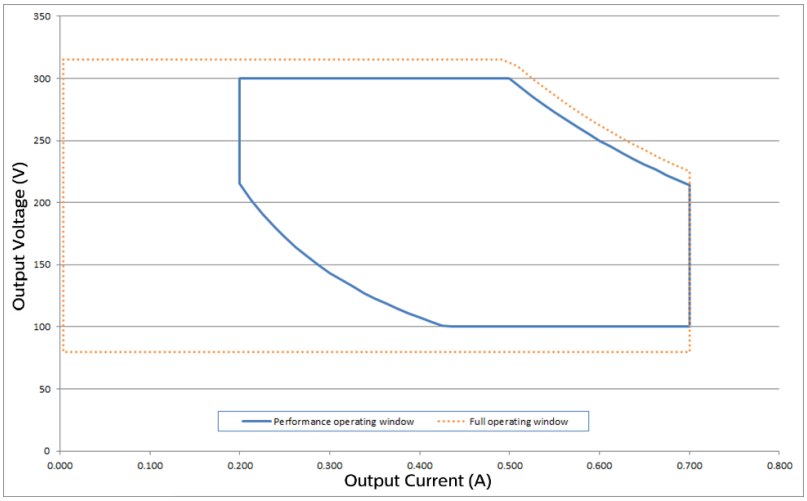
Specification item	Value	Unit	Condition
Typical protective conductor current (ins. Class I)	0.5	mA rms	Acc. IEC61347-1. LED module contribution not included

Surge immunity

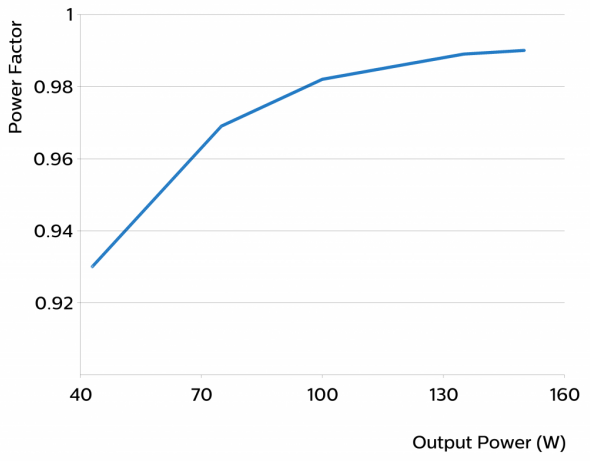
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	2	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	4	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge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

Graphs

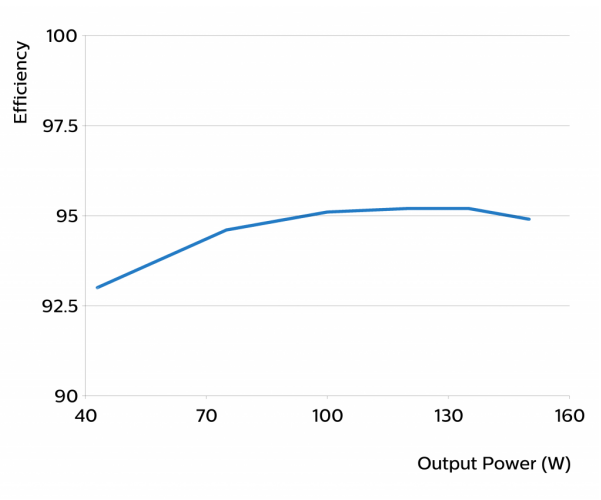
Operating window



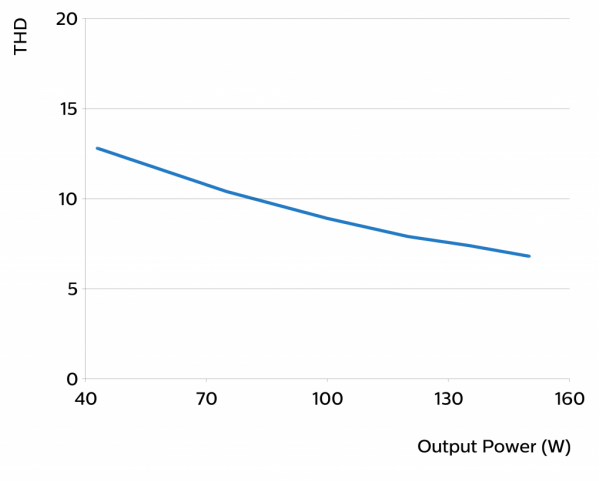
Power factor versus output power



Efficiency versus output power



THD versus output power



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