Xitanium

Datasheet

Xitanium non-iso DALI dimmable & programmable (TD16 SimpleSet)



Xitanium 60W 0.15-0.5A 220V TD16 230V
9290 039 94706

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

- Low profile housing (16mm height)
- SimpleSet configuration interface (NFC)
- High quality of light
- High reliability
- Future-proof flexibility
- Flicker and noise free dimming due to amplitude modulation dimming (AM)

Application

- Offices
- Healthcare
- Education
- Indoor parking areas
- Retail: supermarkets, shopping malls
- Industry

Features

- Configurable operating windows (AOC) via DALI and SimpleSet interface
- Adjustable Light Output (ALO)
- Constant Light Output (CLO)
- Corridor Mode (CM)
- Dimming supported during DC operation (DCemDim)
- Touch & Dim (TD)
- OEM Write Protection (OWP)
- Memory Bank 1 Extension / Luminaire Data (DALI part 251)
- Energy Reporting (DALI part 252)
- Diagnostics & Maintenance (DALI part 253)

Logistical data

Specification item	Value
Product name	Xitanium 60W 0.15-0.5A 220V TD16 230V
Logistic code 12NC	9290 039 94706
EAN1 (GTIN)	8720169357242
Pieces per box	24
Weight	180 gram

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	50...60	Hz	Nominal range
Rated input current	0.3	A	@ rated output power @ rated input voltage
Rated input power	66.0	W	@ rated output power @ rated input voltage
Power factor performance range	0.99		@ rated output power @ rated input voltage
Total harmonic distortion	20	%	@ rated output power @ rated input voltage
Efficiency	93.0	%	@ rated output power @ rated input voltage @ max. Uout
Rated input voltage DC	186...250	V_{dc}	Nominal range
Rated input current DC	0.26...0.35	A_{dc}	Nominal range
Input voltage AC	198...264	V_{ac}	Operational range
Input frequency AC	47.5...63	Hz	Operational range
Input voltage DC	168...275	V_{dc}	Operational range
Standby Power (W)	0.25	W	
Isolation input to output	No		

Electrical output data

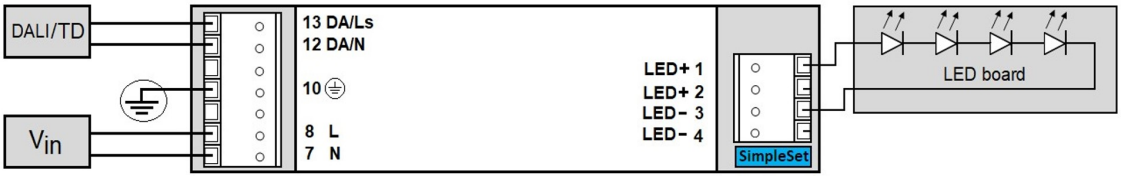
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	50...220	V_{dc}	
Output voltage max.	250	V	Maximum output voltage (rms)
Output current	150...500	mA	
Output current min programmable	150	mA	
Min output current	3	mA	
Output current tolerance ±	5	%	@full load
Output current ripple LF	≤ 4	%	Ripple = peak / average. Up to 2kHz.
Output P_{st}^{LM}	≤ 1.0		
Output SVM	≤ 0.3		
Output power	0.2...60.0	W	
Minimum performance output power	17	W	Power factor > 0.9 and THD < 20%

Control interfaces

Specification item	Value	Unit	Condition
Control method	Corridor Mode, DALI, TD		DALI parts: 101, 102, 207, 251, 252, 253. See design-in guide at www.philips.com/oem for more controllability details.
Dimming range	1...100	%	with AOC > 200mA 1% dimming possible; AOC < 80mA min. physical current = 2mA
Isolation controls input to output	Basic		acc. IEC61347-1

Wiring and Connections

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

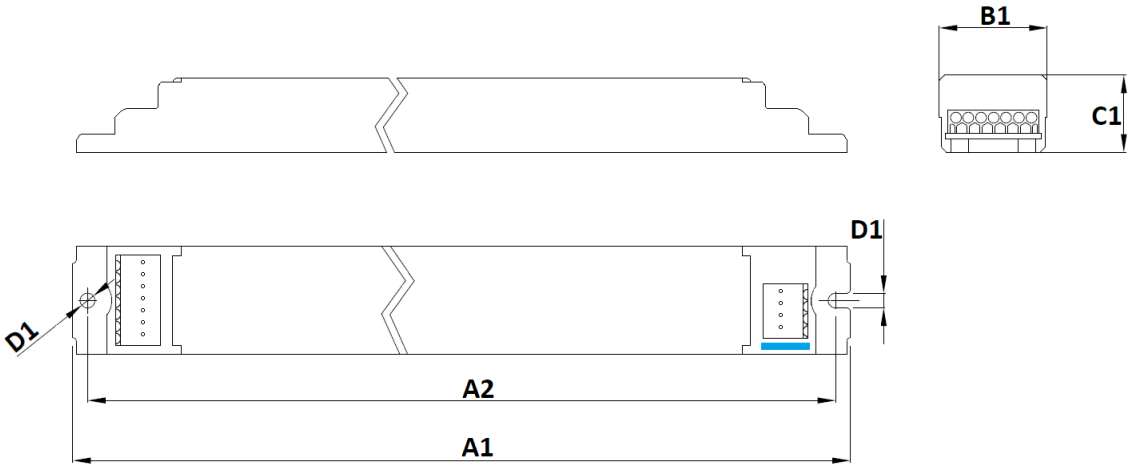


Isolation

Insulation per IEC61347-1	Input	Output	DALI	Housing
Input	-	No	Basic	Basic
Output	No	-	Basic	Basic
DALI	Basic	Basic	-	Basic
Housing	Basic	Basic	Basic	-

Dimensions and weight

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

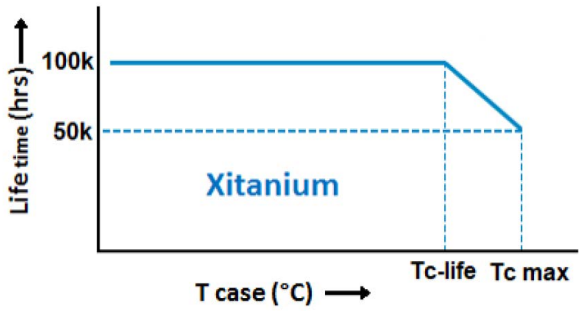


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-25...+50	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded
Tcase-max	80	°C	Maximum temperature measured at Tcase-point
Tcase-life	70	°C	Measured at Tcase-point measured at Tc-point 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 Tcmax - 10 degrees. Maximum failures = 10%
Driver lifetime Tcmax	50,000	hours	Measured temperature at Tcase-point is Tc-max. Maximum failures = 10%
Mains switching cycles	> 100,000	switches	See Design-in guide for detailed explanation



Maximum failures = 10%

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

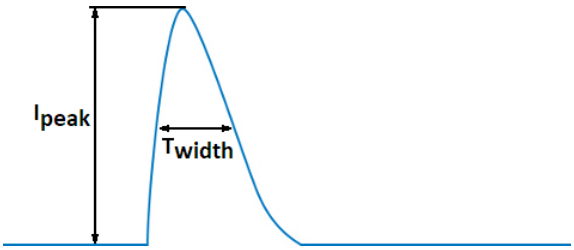
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	NFC, Programmable, SimpleSet	150 mA	
Adjustable Light Output (ALO)	Yes	OFF	
Constant Light Output (CLO)	Yes	OFF	
Touch & Dim (TD)	Yes	ON	
Corridor Mode	Yes	ON	Default: T1=55s, T2=12s, T3=30min
Min Dim Level (%)	Yes	1 %	
DC emergency (DCemDim)	Yes	ON	Default 15%, EOFi range = 1 .. 100% (EOFi = DCemDIM level)
DALI control supported at DC operation	Yes	OFF	
OEM Write Protection (OWP)	Yes	OFF	
DALI 102	Yes		Programmable via SimpleSet
Luminaire Info (DALI part 251)	Yes		
Luminaire maintenance (DALI part 253)	Yes		

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	I	per IEC60598
Output Overvoltage Detection	Yes	
Box configuration	Yes	
Energy metering (DALI part 252)	Yes	
Diagnostics via Signify tool	Yes	

Inrush current

Specification item	Value	Unit	Condition
Inrush current	36	A	Input voltage 230V
Inrush peak width	130	µs	Input voltage 230V, measured at 50% height
Drivers / MCB 16A type B @230V AC	≤ 25	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 Protective Conductor Current (ins. Class I)	0.5	mA rms	Acc. IEC60598-1. LED module contribution not included

Surge immunity

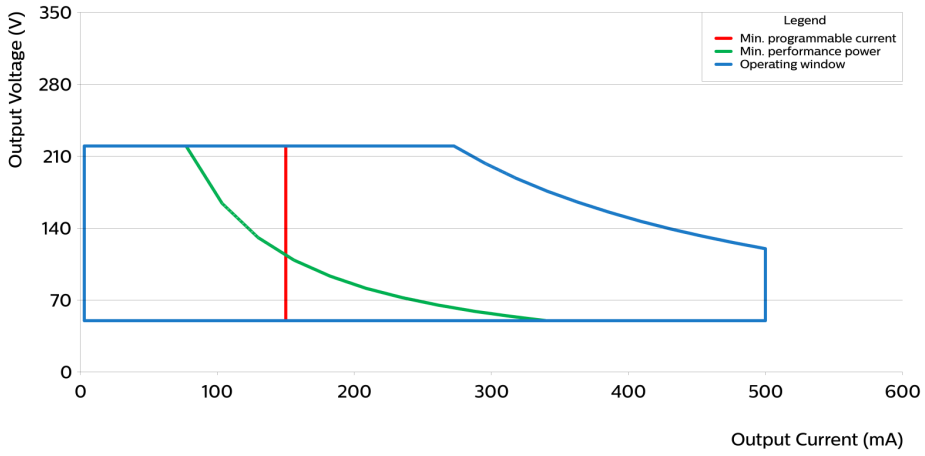
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	L-N Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	L/N - PE Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	1	kV	DALI/TD - DALI-TD Acc. IEC61000-4-5. 2 Ohm,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

Specification item	Value
Approval marks and Certifications	CCC / CE / DALI 2 / EAC / EL / ENEC / RCM / UA / UKCA
Ingress Protection classification (IP)	20
Application	Indoor Linear
Mounting Type	Built-in

Graphs

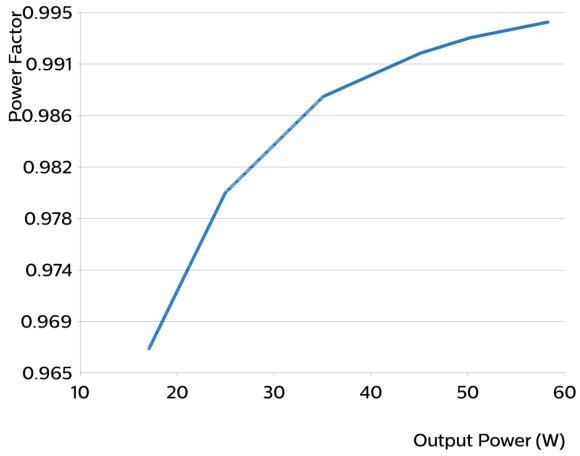
Operating window



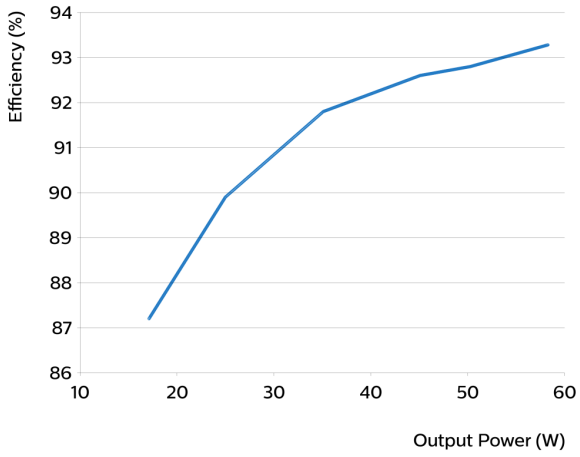
Type	Output current (mA)	Min. output voltage (V)	Max. output voltage (V)	Max. output power (W)
Xitanium 60W 0.15-0.5A 220V TD16 230V	150	50	220	33
Xitanium 60W 0.15-0.5A 220V TD16 230V	200	50	220	44
Xitanium 60W 0.15-0.5A 220V TD16 230V	250	50	220	55
Xitanium 60W 0.15-0.5A 220V TD16 230V	300	50	200	60
Xitanium 60W 0.15-0.5A 220V TD16 230V	350	50	171	60
Xitanium 60W 0.15-0.5A 220V TD16 230V	400	50	150	60
Xitanium 60W 0.15-0.5A 220V TD16 230V	450	50	133	60

Xitanium 60W 0.15-0.5A 220V TD16 230V	500	50	120	60

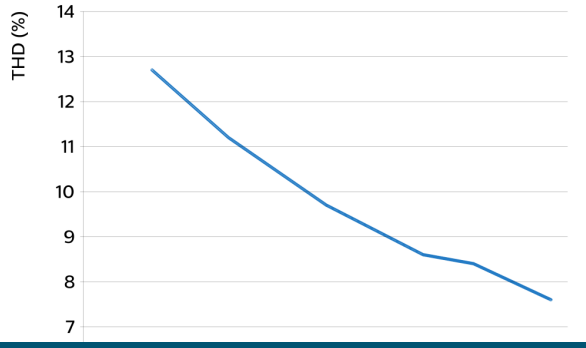
Power factor versus output power



Efficiency versus output power



THD versus output power



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