

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium LED drivers – linear LV isolated

Xitanium 48W 0.7-1.05A 46V TD DS 230V I

9290 028 51700

Enabling future-proof LED technology

Xitanium LED drivers with single current output offer industry leading performance and reliability at optimized cost.

They are ideal for high volume applications while delivering to specific requirements. These drivers offer the same level of performance as Xitanium adjustable current linear drivers to ensure high quality of light, but with a specific current setting for optimized performance. Due to the low output current ripple, you can be sure to offer your customers high quality of light without visual flicker and stroboscopic effects.

Benefits

- High quality of light -assurance of camera and scanner-friendly performance
- High reliability
- Optimized performance at specific output current settings
- Flicker and noise free dimming with all Touch and DALI LED drivers due to amplitude dimming (AM)

Features

- Low output current tolerance
- Low output ripple current
- Long lifetime at high operating temperature
- Easy current selection via dipswitch
- Dali dimmable & programmable, 1-10V dimmable, and fixed-output versions available

Application

- Offices
- Industry
- Supermarkets / 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	0.24	A	@ full output power @ rated input voltage
Rated input power	54.2	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	89	%	@ 230V, full load
Input voltage AC range	202...254	V _{ac}	Operational range
Input frequency AC range	47.5...63	Hz	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	23...46	V _{dc}	
Output voltage max.	60	V	Maximum output voltage (rms)
Output current	0.7/0.8/0.9/1.05	A	
Output current tolerance	± 5	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average, < 3kHz
Output current ripple HF	≤ 15	%	
Output power	16.1...48.3	W	

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	DALI 2.0, Touch & Dim (TD)		
Dimming range	3...100	%	Default range

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.75...1.5 / 18...16	mm ² / AWG	Type250 (Independent), solid / stranded wire
Input wire strip length	8.5...9.5	mm	
Output wire cross-section	0.5...1.5 / 20...16	mm ² / AWG	Type250, solid / stranded wire
Output wire strip length	8.5...9.5	mm	
Control wire cross-section	0.75...1.5 / 18...16	mm ² / AWG	Type250 (Independent), solid / stranded wire
Control wire strip length	8.5...9.5	mm	
Maximum cable length	1	m	Total length of wiring including LED module, one way

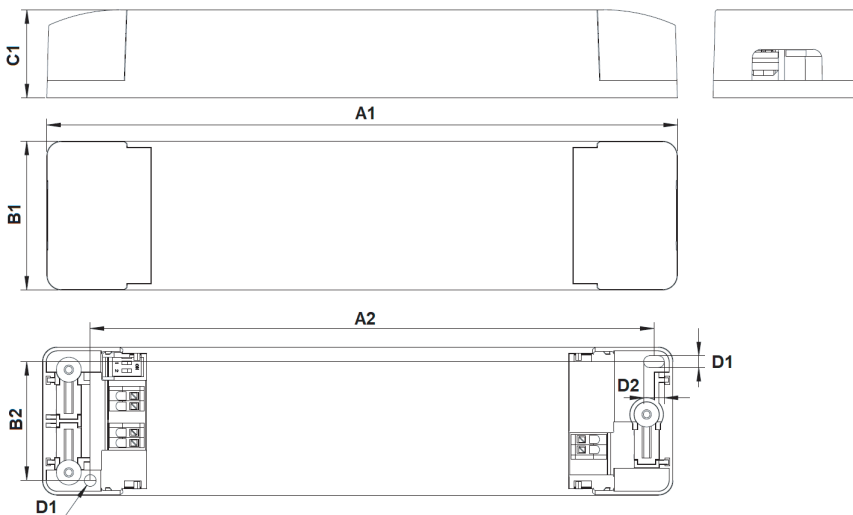


Insulation

Insulation per IEC61347-1	Input	Output	DALI
Input		SELV	Basic
Output	SELV		Double
DALI	Basic	Double	

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	215	mm	
Mounting hole distance (A2)	192.2	mm	
Width (B1)	50.5	mm	
Width (B2)	40.5	mm	
Height (C1)	30	mm	
Mounting hole diameter (D1)	4	mm	
Mounting hole diameter (D2)	7	mm	
Housing color	White		



Logistical data

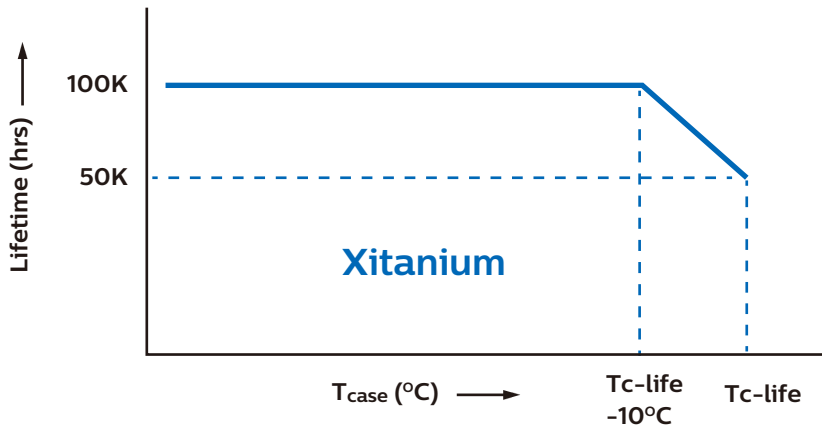
Specification item	Value
Product name	Xitanium 48W 0.7-1.05A 46V TD DS 230V I
Logistic code 12NC	9290 028 51780
EOC	692234192215200
Pieces per box	24

Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20...+45	°C	Higher ambient temperature allowed as long as T _{case-max} is not exceeded
T _{case-max}	75	°C	Maximum temperature measured at T _{case-point}
T _{case-life}	65	°C	Measured at T _{case-point}
Maximum housing temperature	130	°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

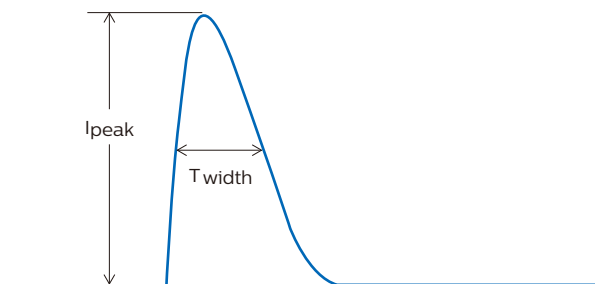
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)		700 mA	Via dipswitch
Constant Light Output (CLO)	No		
Adjustable Light Output (ALO)	No		
Dynadimmer	No		
Touch & Dim (TD)	Yes	ON	
DC emergency (DCemDim)	No		
Corridor mode	No		
OEM Write Protection (OWP)	No		

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	II		per IEC60598
Energy metering	No		
Diagnostics	No		

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	17.2	A	Input voltage V
Inrush current T_{width}	270	μ s	Input voltage V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 24	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

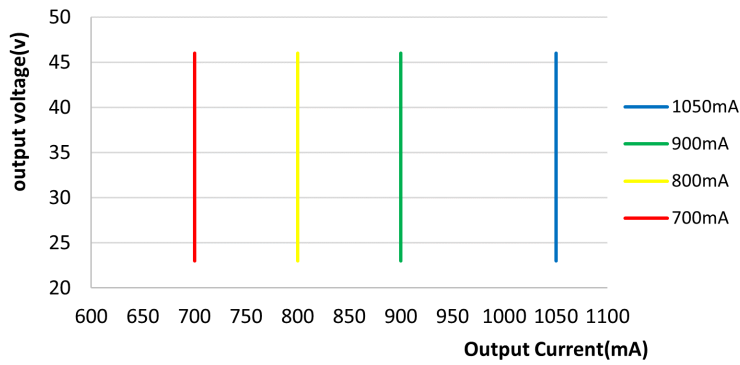
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge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

Application Info

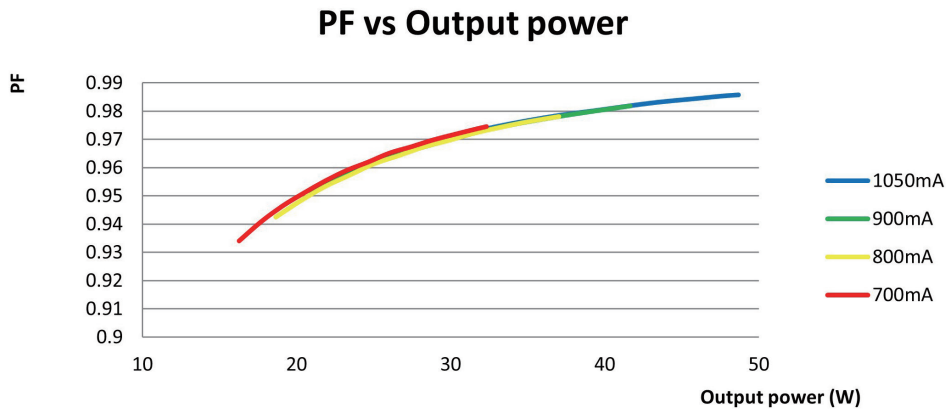
Specification item	Value
Approval marks	CB / CCC / CE / ENEC / SELV / RCM / TISI
Ingress Protection classification (IP)	20

Graphs

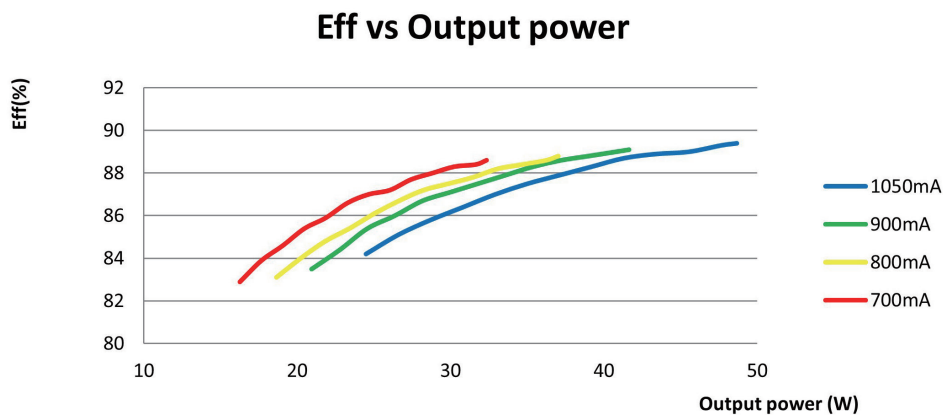
Operating window

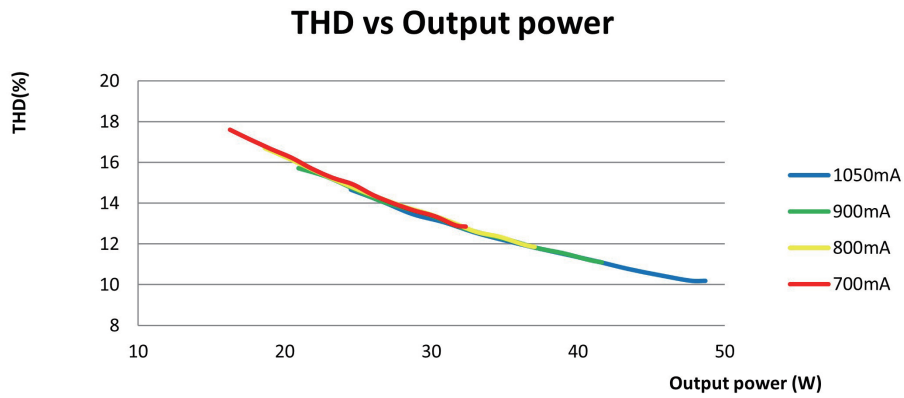


Power factor versus output power



Efficiency versus output power





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