

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium FULL Prog LED Xtreme drivers, Class I only

Xitanium FULL PROG 70W1000 NLD C150 Xt

Xitanium FULL Prog LED Xtreme drivers

Philips Xitanium Full Programmable LED drivers are specifically designed to deliver the highest performance, protection and configurability. The portfolio offers both central and standalone dimming protocols further increasing the energy savings and CO₂ reductions achieved with LED lighting. The Xtreme technology ensures maximum robustness and protection combined with a very long lifetime.

In this product family Philips introduces new drivers in a compact form factor with state-of-the-art features, which offer high value for both OEM customers and end-users. The products can replace the existing programmable outdoor LED drivers and will bring significant improvement in programming, assembly into a luminaire and electrical performance.

Benefits

- Ultimate robustness, offering peace of mind and lower maintenance costs
- Fully programmable LED-drivers designed for the new digital and connected lighting world
- Extended diagnostics via MultiOne
- Easy to design-in, configure and install for Class I applications
- Energy savings through high efficiency and via multiple dimming options

Features

- High surge protection (CM/DM)
- Long lifetime and robust protection against moisture, vibration and temperature
- Configurable operating windows (AOC)
- Multiple control interfaces: DALI or 1-10V, LineSwitch
- Autonomous dimming via integrated DynaDimmer
- Thermal protection for driver and for module (MTP)
- Constant Light Output (CLO)
- Adjustable Start-up Time (AST)
- Adjustable Light Output (ALO)
- End-Of-Life indicator (EOL)

Application

- Road and street lighting
- Area lighting
- Industrial lighting

Electrical input data

Specification item	Value	Unit	Condition
Nominal input voltage	220...240	V _{ac}	performance range
Nominal input frequency	50...60	Hz	
Nominal input current	0.38	A	@230V @ full load
Max. input current	0.4	A	@ minimum input voltage AC
Input voltage	230	V _{ac}	
Nominal input power	79	W	@230V @ full load
Power factor	≥ 0.99		@ full load. See graph.
Total harmonic distortion	≤ 9	%	@ full load. See graph.
Efficiency	88	%	@230V @ full load
Input voltage AC	198...264	V _{ac}	Operational range
Input frequency AC	45...66	Hz	Operational range
Standby power	0.45	W	
Isolation Input to Output	Double		

Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	30...100	V _{dc}	
Output voltage max.	180	V	Peak voltage at open load
Output current	0.07...1	A	Full output current setting
Output current min programmable	100	mA	
Output current min dimming	70	mA	
Output current tolerance	± 3	%	
Output current ripple LF	≤ 5	%	Ripple = peak / average
Output current ripple HF	≤ 20	%	
Output power	4...70	W	Full output

Electrical data controls input

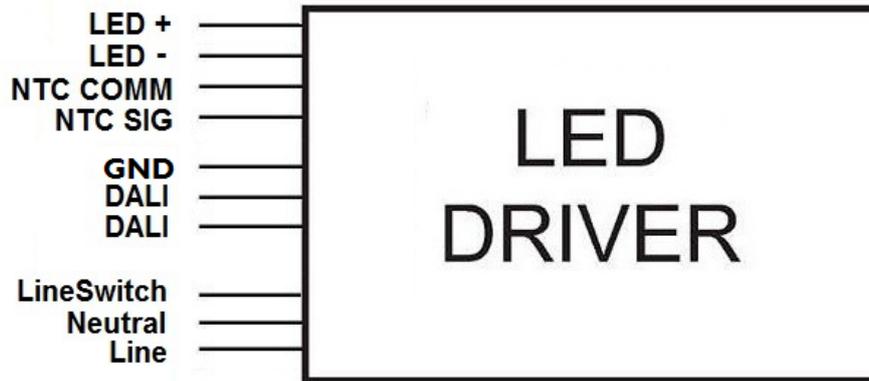
Specification item	Value	Unit	Condition
Control method	DALI, Dynadimmer, LineSwitch		Output current amplitude dimming
Dimming range	7...100	%	DALI acc. IEC62386-101, -102 Ed. 2.0
Galvanic Isolation	Double		

Logistical data

Specification item	Value
Product name	Xitanium FULL PROG 70W1000 NLD C150 Xt
Order code	871829175649100
Logistic code 12NC	9290 008 84306
EAN3	
Pieces per box	12

Wiring & Connections

Specification item	Value	Unit	Condition
Input wire cross-section	0.5...2.5	mm ²	WAGO804, solid / stranded wire
	12...20	AWG	WAGO804, solid / stranded wire
Input wire strip length	10...11	mm	
Output wire cross-section	0.3...1.5	mm ²	WAGO805, solid / stranded wire
	16...24	AWG	WAGO805, solid / stranded wire
Output wire strip length	9...10	mm	
Maximum cable length	20000	mm	Total length of wiring including LED module, one way
Maximum NTC output cable length	0.6	m	

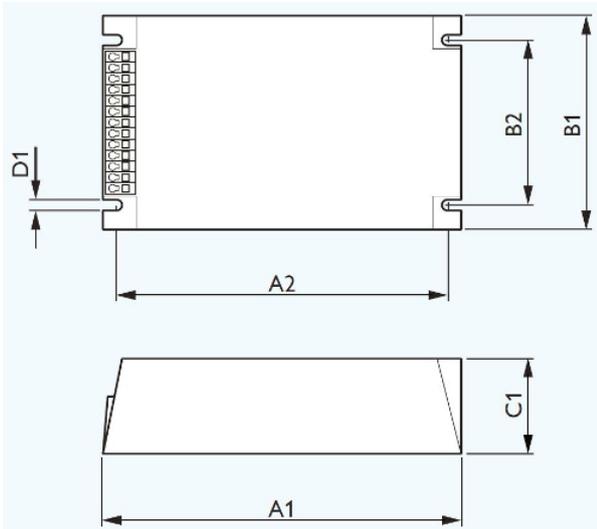


Insulation

Insulation	Mains	LineSwitch	GND	DALI	LED+NTC
Mains		No	Re-inforced	Basic	Double
LineSwitch	No		Re-inforced	Basic	Double
GND	Re-inforced	Re-inforced		Re-inforced	Re-inforced
DALI	Basic	Basic	Re-inforced		Double
LED+NTC	Double	Double	Re-inforced	Double	

Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	150	mm	
Width (B1)	90	mm	
Width (B2)	70	mm	
Height (C1)	40	mm	
Fixing hole diameter (D1)	4.5	mm	
Fixing hole distance (A2)	133.6	mm	
Weight	770	gram	



Operational temperatures and humidity

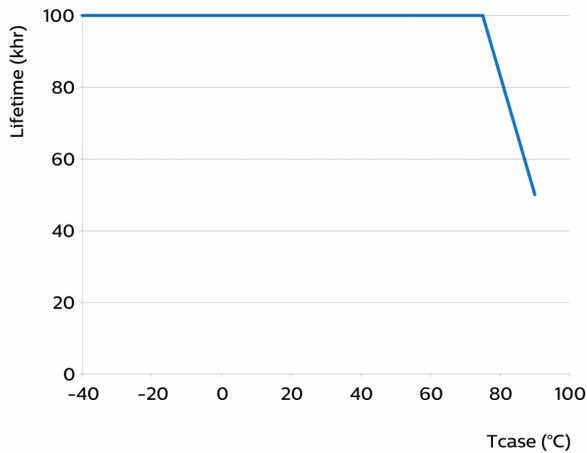
Specification item	Value	Unit	Condition
Ambient temperature	-30...+60	°C	Higher ambient temperature allowed as long as T _{case-max} is not exceeded.
Starting Ambient temperature	-40...+60	°C	
T _{case-max}	90	°C	Maximum temperature measured at T _{case} -point
T _{case-life}	75	°C	Measured at T _{case} -point
Maximum housing temperature	130	°C	In case of a failure
Relative humidity	10...90	%	Non-condensing

Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+80	°C	
Relative humidity	5...95	%	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%



Programmable features

Specification item	Value	Remark	Condition
Set output current (AOC)	Programmable	See Design-in guide.	Default output current: = 700 mA
LED module temperature derating (MTP)	Yes		
Constant Lumen Over Lifetime (CLO)	Yes		
Diagnostics	Yes		
Adjustable Light Output ALO	Yes		
LineSwitch	Yes		
Adjustable Start-up Time AST	Yes		
Integrated Dynadimmer	Yes		
End Of Life indicator	Yes		

Features

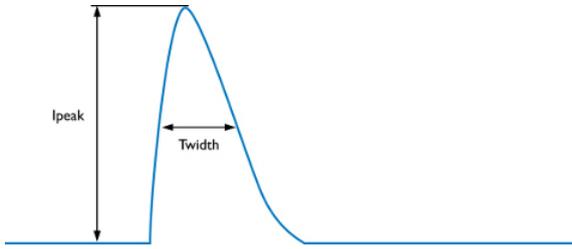
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I		per IEC60598
Over temperature protection driver	Yes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

Certificates and standards

Specification item	Value
Approval marks	CB / CE / ENEC / VDE-EMV
Ingress Protection classification	20

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	6	A	Input voltage 230V
Inrush current T_{width}	800	μ s	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 25	pcs	



Maximum recommended number of drivers per MCB

MCB Rating	B	C
10A	16	20
13A	20	26
16A	25	32
20A	31	40
25A	39	50

Driver touch current

Specification item	Value	Unit	Condition
Typical touch current	< 0.34	mA peak	Acc. IEC61347-1. LED module contribution not included

Surge immunity

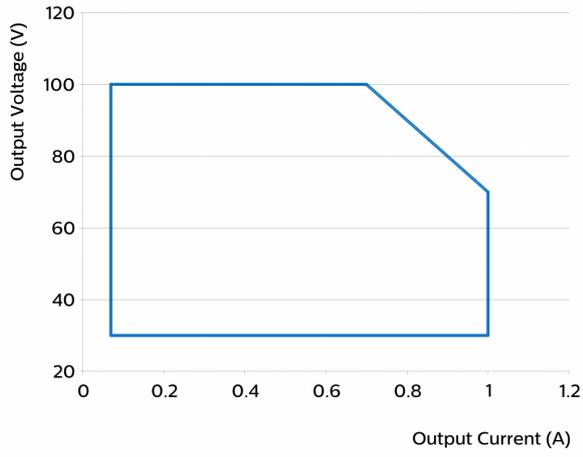
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	4	kV	L-N, Ls-L, Ls-N, acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	10	kV	L/N - GND, acc. IEC61000-4-5. 12 Ohm 1.2/50us, 8/20us
Control surge immunity (diff. mode)	0.9	kV	DALI - DALI, acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge immunity (comm. mode)	6	kV	DALI - GND, acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
DALI surge immunity (comm. mode)	10	kV	L/N - DALI acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Additional information

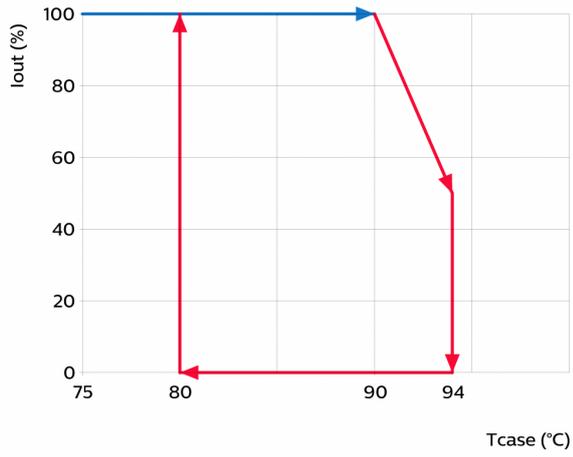
Specification item	Default setting	Remark	Condition
AOC	700	mA	
LineSwitch	ON		
ALO	OFF		
CLO	OFF		
MTP	ON		
Dynadimmer	OFF		
AST	OFF		
EOL	OFF		

Graphs

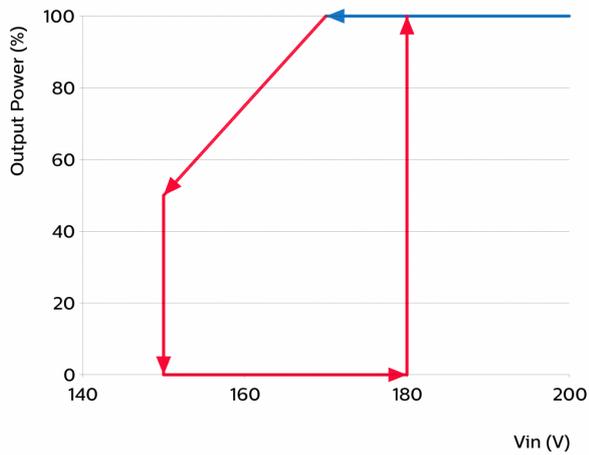
Operating window



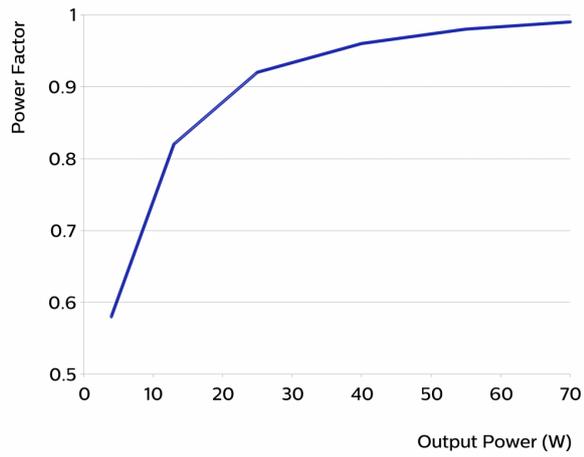
Thermal Guard



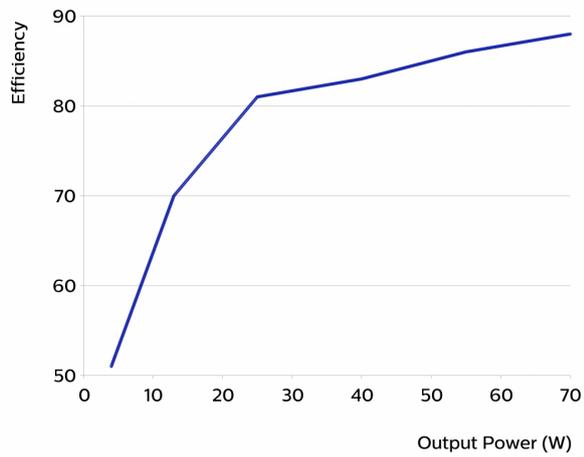
Mains Guard



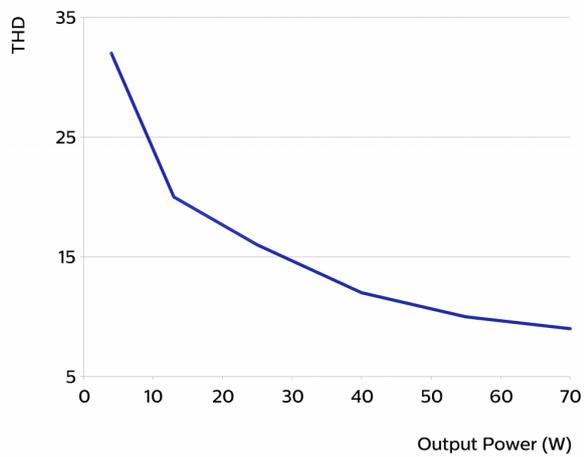
Power factor versus output power



Efficiency versus output power



THD versus output power



Notes

Driver GND terminal only allowed to be connected to protective earth.



©2016 Philips Lighting B.V.

All rights reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent- or other industrial or intellectual property rights. Data subject to change.

Date of release: September 15, 2016

www.philips.com/technology