PHILIPS

Xitanium

LED driver

Datasheet

Xitanium Prog/Prog+ LED Xtreme drivers

Xitanium 150W 0.7A Prog+ 230V-F sXt

Xitanium Prog/Prog+ LED Xtreme drivers

Philips Xitanium Prog/Prog+ 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.

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
- 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, 1-10V (Prog+ : also AmpDim)
- Autonomous dimming via integrated DynaDimmer
- Suitable for DC operation
- Thermal protection for driver and for module (MTP)
- Constant Light Output (CLO)
- Adjustable Start-up Time (AST)
- End-Of-Life indicator (EOL)

Application

- Road and street lighting
- Area lighting
- Industrial lighting

December 2016

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	0.7	A	@230V @ full load
Max. input current	0.82	A	@ minimum input voltage AC
Input voltage	230	V_{ac}	
Nominal input power	161	W	@230V @ full load
Power factor	≥ 0.99		@ full load. See graph.
Total harmonic distortion	≤ 10	%	@ full load. See graph.
Efficiency	92	%	@230V @ full load
Nominal input voltage DC	186…250	V_{dc}	
Nominal input current DC	0.4	A	Input voltage 230 V_{dc}, full load
Input voltage AC	198…264	V_{ac}	Operational range
Input frequency AC	45…66	Hz	Operational range
Input voltage DC	168…275	V_{dc}	Maximum permissible range
Standby power	0.45	W	
Isolation Input to Output	Basic		

Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	90…280	V_{dc}	
Output voltage max.	290	V	Peak voltage at open load
Output current	0.053…0.7	A	Full output current setting
Output current min programmable	100	mA	
Output current min dimming	53	mA	
Output current tolerance	± 5	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average
Output current ripple HF	≤ 15	%	
Output power	4.8…150	W	Full output

Electrical data controls input

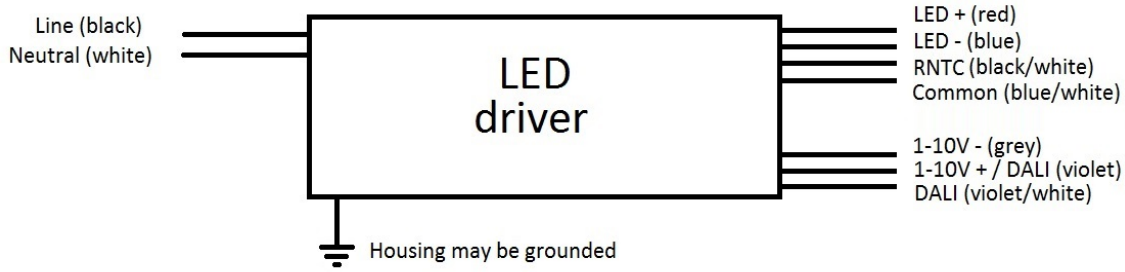
Specification item	Value	Unit	Condition
Control method	1-10V, AmpDim, DALI, Dynadimmer		Output current amplitude dimming, DALI acc. IEC62386-102/207; 1-10V acc. IEC60929
Dimming range	8…100	%	Default range
Galvanic Isolation	Basic		

Logistical data

Specification item	Value
Product name	Xitanium 150W 0.7A Prog+ 230V-F sXt
Order code	871829176563900
Logistic code 12NC	9290 007 12503
EAN3	
Pieces per box	10

Wiring & Connections

Specification item	Value	Unit	Condition
Input wire cross-section	0.82	mm^2	solid wire, double-insulated
	18	AWG	solid wire, double-insulated
Input wire strip length	8...12	mm	
Output wire cross-section	0.82	mm^2	solid wire, double-insulated
	18	AWG	solid wire, double-insulated
Output wire strip length	8...12	mm	
Maximum cable length	10000	mm	Total length of wiring including LED module, one way
Maximum NTC output cable length	0.6	m	

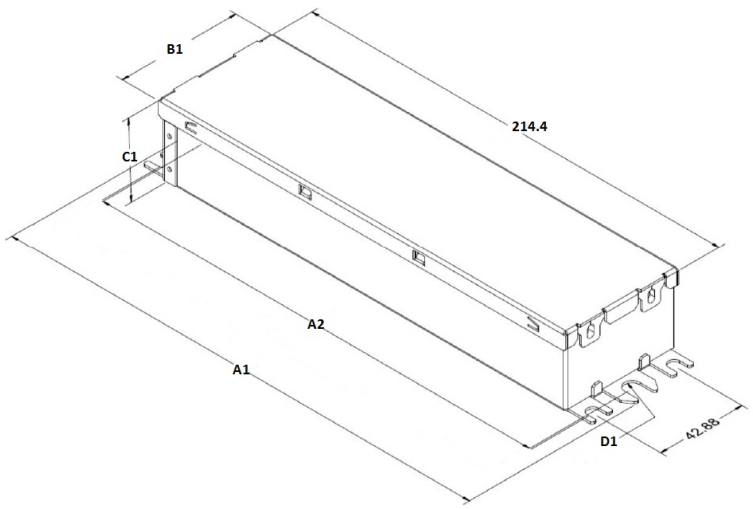


Insulation

Insulation	Mains	Housing	LED+NTC	DALI + 1-10V
Mains		Double	Basic	Basic
Housing	Double		Double	Double
LED+NTC	Basic	Double		Basic
DALI + 1-10V	Basic	Double	Basic	

Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	240.5	mm	
Width (B1)	59.8	mm	
Width (B2)	42.88	mm	
Height (C1)	37.6	mm	
Fixing hole diameter (D1)	6	mm	
Fixing hole distance (A2)	226	mm	
Weight	900	gram	



Operational temperatures and humidity

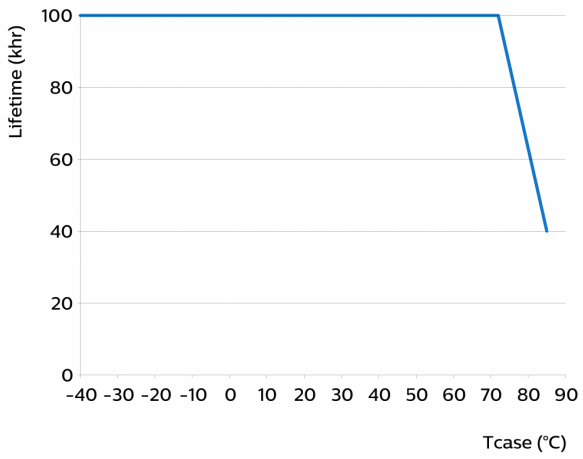
Specification item	Value	Unit	Condition
Ambient temperature	-40…+57	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded.
Starting Ambient temperature	-40…+57	°C	
Tcase-max	85	°C	Maximum temperature measured at T_{case}-point
Tcase-life	72	°C	Measured at T_{case}-point
Maximum housing temperature	110	°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		
DC emergency dimming (DCemDIM)	Yes		Default level = 15% of programmed AOC. Consult separate application note for more details.
Diagnostics	Yes		
Ampdim	Yes		
Adjustable Start-up Time AST	Yes		
1-10V minimum dim level	Yes		
Integrated Dynadimmer	Yes		
End Of Life indicator	Yes		

Features

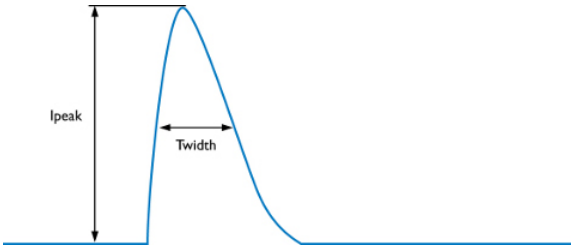
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I and II		per IEC60598
Over temperature protection driver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

Certificates and standards

Specification item	Value
Approval marks	CB / CE / ENEC
Ingress Protection classification	

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	70	A	Input voltage 230V
Inrush current T_{width}	190	µs	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 9	pcs	



MCB	Rating	Relative number of LED drivers
B	10A	63%
B	13A	81%
B	16A	100% (stated in datasheet)
B	20A	125%
B	25A	156%
C	10A	104%
C	13A	135%
C	16A	170%
C	20A	208%
C	25A	260%

Driver touch current

Specification item	Value	Unit	Condition
Typical touch current	< 0.7	mA peak	Acc. IEC61347-1. LED module contribution not included

Surge immunity

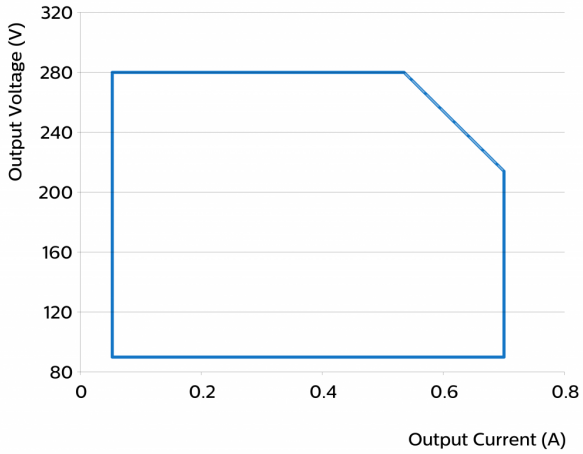
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	4	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	4	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge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

Additional information

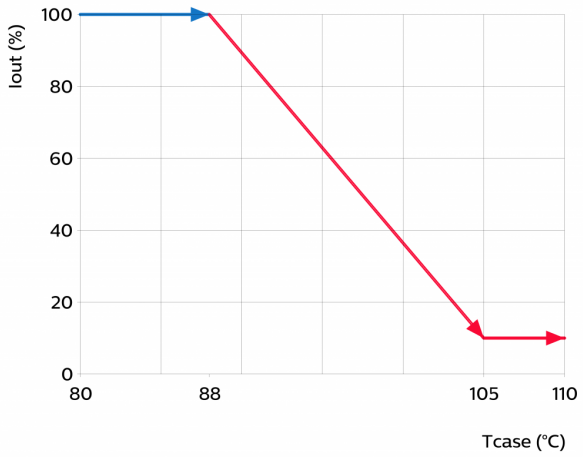
Specification item	Default setting	Remark	Condition
AOC	700	mA	
CLO	OFF		
MTP	ON		
Dynadimmer	OFF		
EOL	OFF		
1-10V	ON		

Graphs

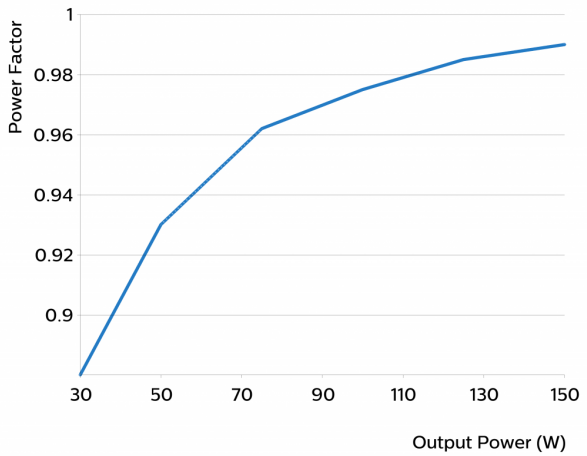
Operating window



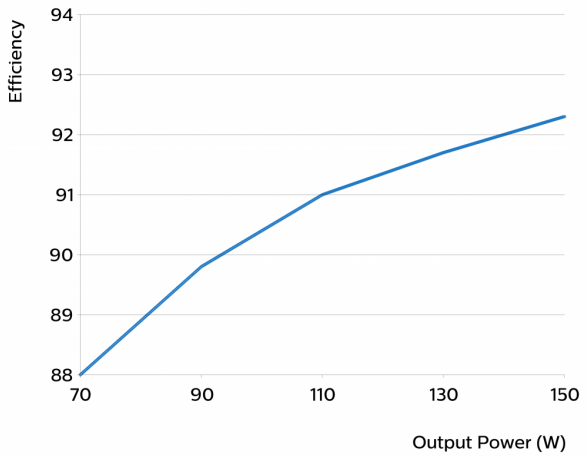
Thermal Guard



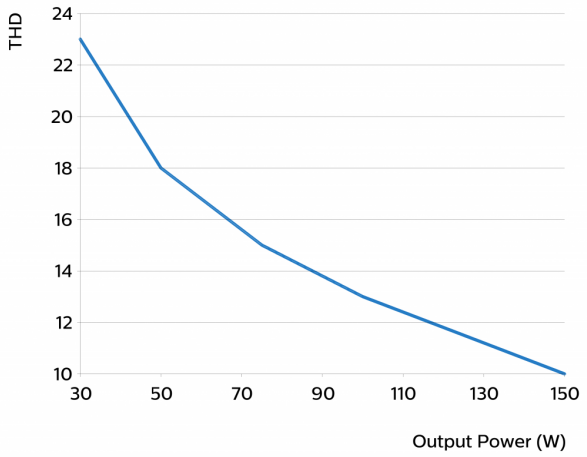
Power factor versus output power



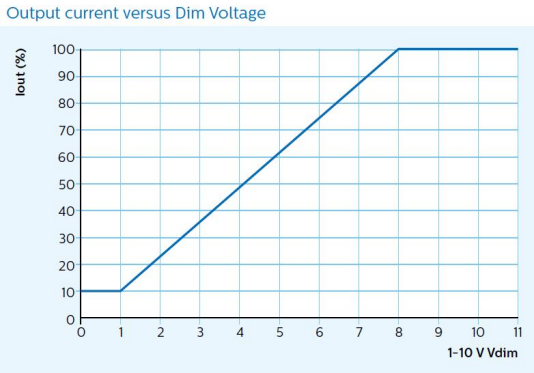
Efficiency versus output power



THD versus output power



I_{out} as function of 1-10V interface



Notes

Installation & Application Notes:

1: By factory default, the 1-10V interface is enabled and DALI interface is disabled.
These controls are mutually exclusive.

2: Integrated Dynadimmer cannot be overruled by DALI. These controls are mutually exclusive.

3: Driver is for built-in use only and must not be exposed to the elements such as snow, water and ice or to any other chemical agent which can be expected to have an adverse effect on the driver (e.g. corrosive environments). It is the responsibility of both luminaire manufacturer and installer to prevent exposure. Common sense needs to be used in order to define the proper luminaire or application IP rating.

4: Driver housing is allowed to be connected to accessible insulation Class II luminaire parts. Driver is suitable for insulation Class I and II applications.

6: Standard lead length on all wires: 500 +/- 30mm solid copper. Insulation rating: 105°C/600V.

7: DC emergency application notes (DCemDim): please refer to separate application note and driver design-in guide.

Date of release: December 8, 2016