

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium FULL Prog LED Xtreme drivers

Xi FP 150W 0.2-0.7A SNLDAE 230V S240 sXt

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 stretched 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. One of the key features is SimpleSet®, an easy and fast way to configure the driver in a production environment, without the need to power the driver.

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 SimpleSet® and MultiOne
- Easy to design-in, configure and install for insulation Class I and Class II applications
- Energy savings through high efficiency and via multiple dimming options

Features

- SimpleSet®, wireless configuration interface
- High surge immunity (CM/DM)
- Long lifetime and robust protection against moisture, vibration and temperature
- Configurable operating windows (AOC)
- Multiple control interfaces: DALI, LineSwitch, AmpDim
- Autonomous dimming via integrated DynaDimmer
- Suitable for central DC operation (DCemDim)
- Thermal protection for LED 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
- Tunnel lighting
- Industrial lighting

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	202...254	V _{ac}	Performance range
Rated input voltage	230	V _{ac}	
Rated input frequency range	47...63	Hz	Performance range
Rated input current	0.72	A	@ rated output power @ rated input voltage
Max. input current	0.8	A	@ rated output power @ minimum performance input voltage
Rated input power	162	W	@ rated output power @ rated input voltage
Power factor	≥ 0.99		@ rated output power @ rated input voltage
Total harmonic distortion	≤ 7	%	@ rated output power @ rated input voltage
Efficiency	≥ 93	%	@ rated output power @ rated input voltage
Rated input voltage DC range	186...250	V _{dc}	Performance range, external DC-rated fuse required
Rated input current DC range	≤ 0.6	A _{dc}	Performance range
Input voltage AC range	198...264	V _{ac}	Operational range, see MainsGuard graph
Input frequency AC range	45...66	Hz	Operational range
Input voltage DC range	168...275	V _{dc}	Operational range
Standby Power (TD)	0.45	W	
Isolation input to output	Double		

Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	90...283	V _{dc}	
Output voltage max.	340	V	Peak voltage at open load
Output current	0.053...0.7	A	
Output current min programmable	200	mA	
Output current min dimming	53	mA	
Output current tolerance	± 3	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average
Output current ripple HF	≤ 15	%	
Output power	5...150	W	

Electrical data controls input

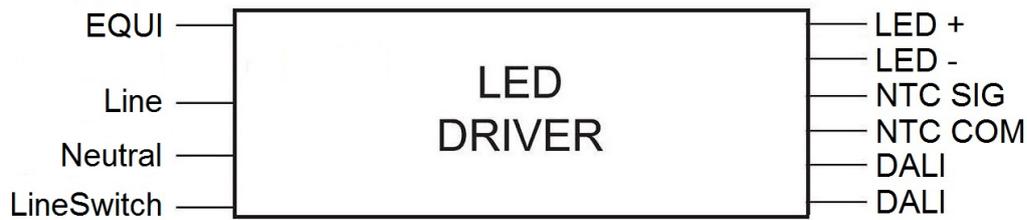
Specification item	Value	Unit	Condition
Control method	AmpDim, DALI, Dynadimmer, LineSwitch single-step		Output current amplitude dimming
Dimming range	10...100	%	DALI acc. IEC62386-101, -102 Ed. 2.0; LineSwitch: Vlow: < 160Vac Vhigh: 170 ... 264Vac
Galvanic Isolation	Double		

Logistical data

Specification item	Value
Product name	Xi FP 150W 0.2-0.7A SNLDAE 230V S240 sXt
Order code	871869648148600
Logistic code 12NC	9290 009 62206
EAN3	8718696481677
Pieces per box	10

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	0.2...1.5	mm ²	WAGO250 (3.5 mm), solid / stranded wire
	16...24	AWG	WAGO250 (3.5 mm), solid / stranded wire
Output wire strip length	8.5...9.5	mm	
Dimming wire cross-section	0.2...1.5	mm ²	WAGO250 (3.5 mm), solid / stranded wire
	16...24	AWG	WAGO250 (3.5 mm), solid / stranded wire
Dimming wire strip length	8.5...9.5	mm	
Maximum cable length	2500	mm	CISPR15: between driver and LED module
Maximum NTC output cable length	0.6	m	

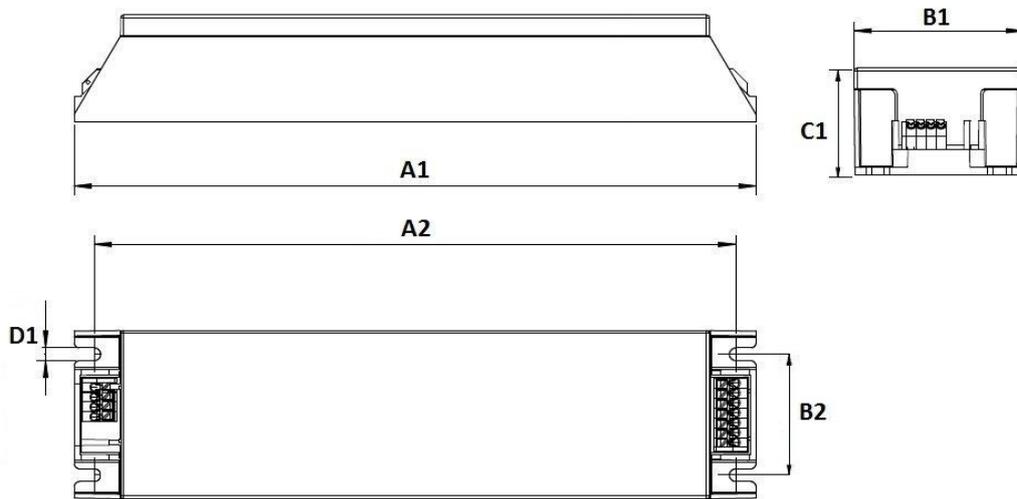


Insulation

Insulation	Mains	EQUI	LED + NTC	LineSwitch	DALI
Mains		Double	Double	NA	Basic
EQUI	Double		Basic	Double	Double
LED + NTC	Double	Basic		Double	Double
LineSwitch	NA	Double	Double		Basic
DALI	Basic	Double	Double	Basic	

Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	240	mm	
Width (B1)	59.7	mm	
Width (B2)	42.9	mm	
Height (C1)	37.8	mm	
Fixing hole diameter (D1)	4.5	mm	
Fixing hole distance (A2)	226	mm	
Weight	650	gram	



Operational temperatures and humidity

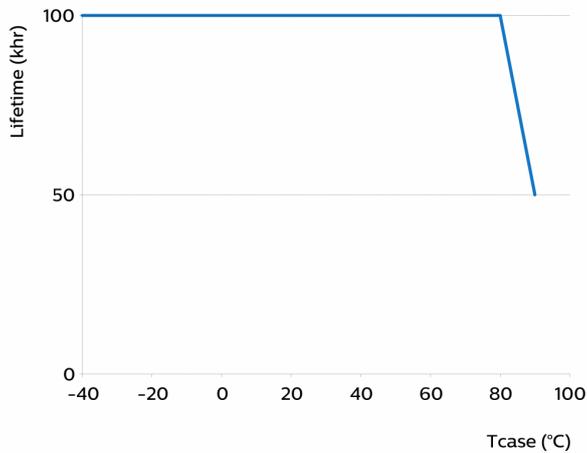
Specification item	Value	Unit	Condition
Ambient temperature	-40...+55	°C	Higher ambient temperature allowed as long as T _{case-max} is not exceeded.
T _{case-max}	90	°C	Maximum temperature measured at T _{case-point}
T _{case-life}	80	°C	Measured at T _{case-point}
Maximum housing temperature	130	°C	In case of a failure
Relative humidity	10...90	%	Non-condensing

Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+90	°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, SimpleSet	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 AOC: 15%. EOF(x) range: 10 ... 60%
Diagnostics	Yes		
Adjustable Light Output (ALO)	Yes		
Ampdim	Yes		
LineSwitch single-step	Yes		
Adjustable Start-up Time (AST)	Yes		
Integrated Dynadimmer	Yes		5-step, light turn-off possible
End Of Life indicator	Yes		

Features

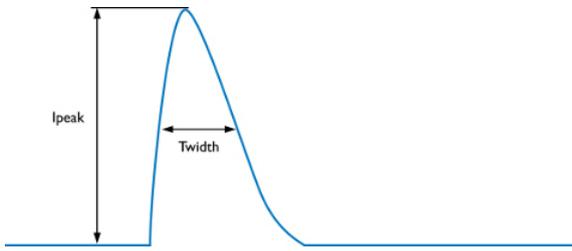
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I and II		per IEC60598
Over temperature protection driver	Yes		Automatic recovering, dimming at $T_c=90^\circ\text{C}$, shutdown at $T_c=95^\circ\text{C}$, resume at $T_c=80^\circ\text{C}$
Overheating protection	Yes		Automatic recovering

Certificates and standards

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

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	53	A	Input voltage 230V
Inrush current T_{width}	300	μ s	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 8	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 / protective conductor current

Specification item	Value	Unit	Condition
Typical touch current (ins. Class II)	< 0.45	mA peak	Acc. IEC61347-1. LED module contribution not included
Typical protective conductor current (ins. Class I)	< 0.3	mA rms	. LED module contribution not included

Surge immunity

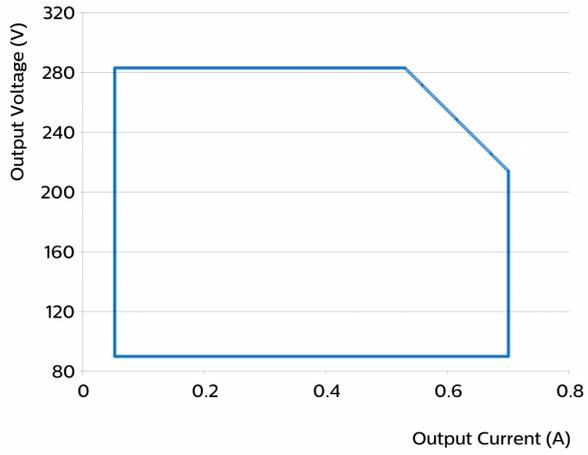
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	6	kV	L-N, Ls-L, Ls-N, acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	8	kV	L/N - EQUI, Ls - EQUI acc. IEC61000-4-5. 12 Ohm 1.2/50us, 8/20us
Control surge immunity (diff. mode)	1	kV	DALI - DALI acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge immunity (comm. mode)	4	kV	DALI - EQUI acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
DALI surge immunity (comm. mode)	4	kV	DALI - L/N/Ls acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Additional information

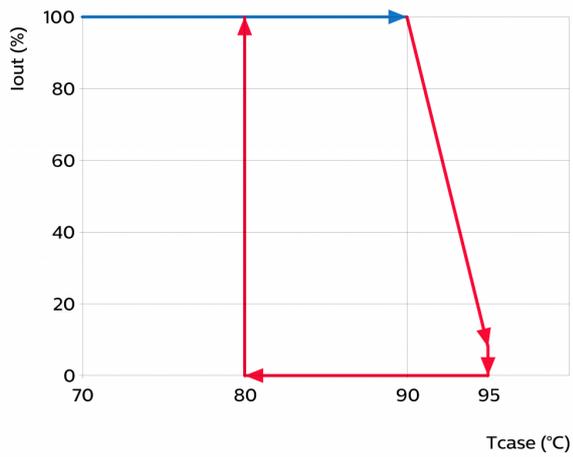
Specification item	Default setting	Remark	Condition
AOC	700	mA	
LineSwitch	ON		
CLO	OFF		
MTP	OFF		
Dynadimmer	OFF		
EOL	OFF		

Graphs

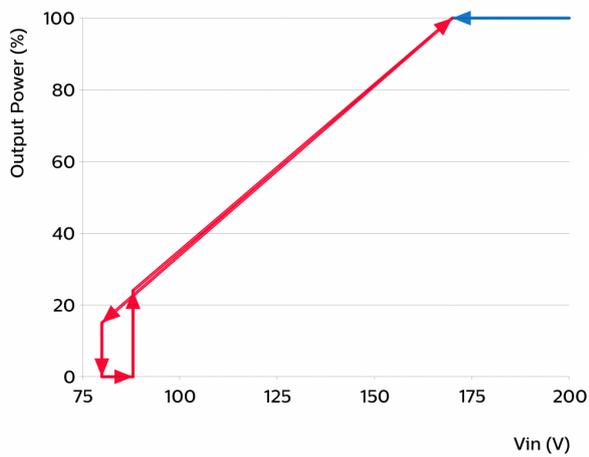
Operating window



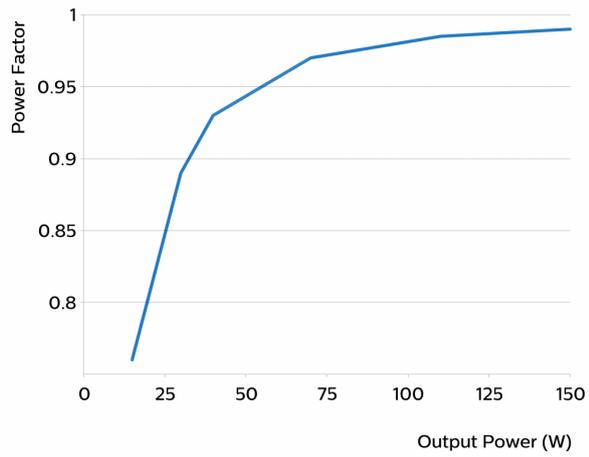
Thermal Guard



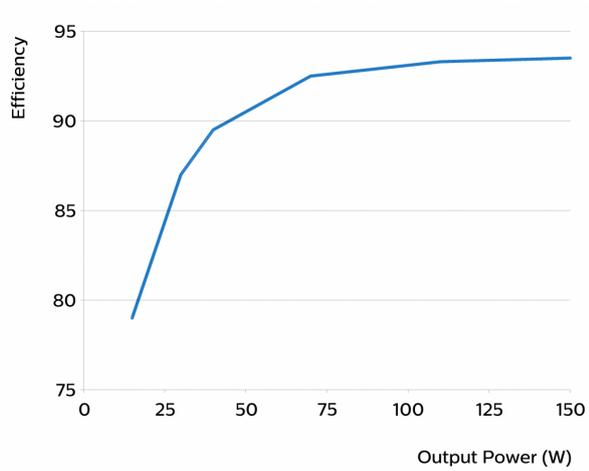
Mains Guard



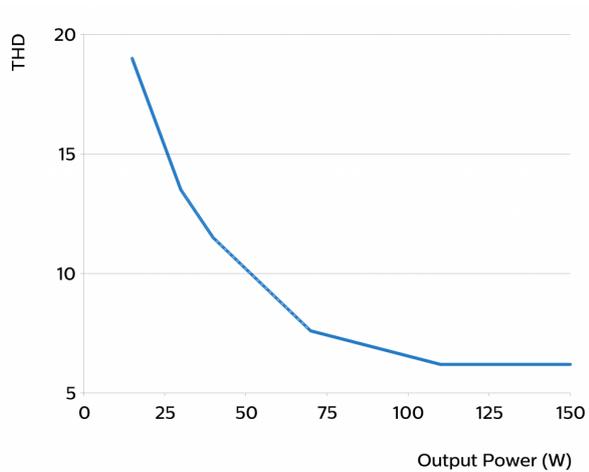
Power factor versus output power



Efficiency versus output power



THD versus output power





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