PHILIPS

Xitanium

LED driver

Datasheet

Xitanium FULL Prog LED Xtreme drivers

Xi FP 40W 0.3-1.0A SNLDAE 230V S175 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 CO_2 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 insulation Class I and Class II applications
- Energy savings through high efficiency and via multiple dimming options

Features

- High surge immunity (CM/DM)
- Long lifetime and robust protection against moisture, vibration and temperature
- Configurable operating windows (AOC)
- Multiple control interfaces: DALI, 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
- Tunnel lighting
- Industrial lighting

March 2017

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	0.2	A	@ rated output power @ rated input voltage
Max. input current	0.21	A	@ rated output power @ minimum performance input voltage
Rated input power	46	W	@ rated output power @ rated input voltage
Power factor	≥ 0.99		@ rated output power @ rated input voltage
Total harmonic distortion	≤ 8	%	@ rated output power @ rated input voltage
Efficiency	≥ 89	%	@ 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	≤ 0.15	A_{dc}	Performance range
Input voltage AC range	80…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	SELV		

Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	20…54	V_{dc}	
Output voltage max.	60	V	Peak voltage at open load
Output current	0.07…1.05	A	Full output current setting
Output current min programmable	300	mA	
Output current min dimming	70	mA	
Output current tolerance	± 3	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average
Output current ripple HF	≤ 20	%	
Output power	1.4…40	W	Full output

Electrical data controls input

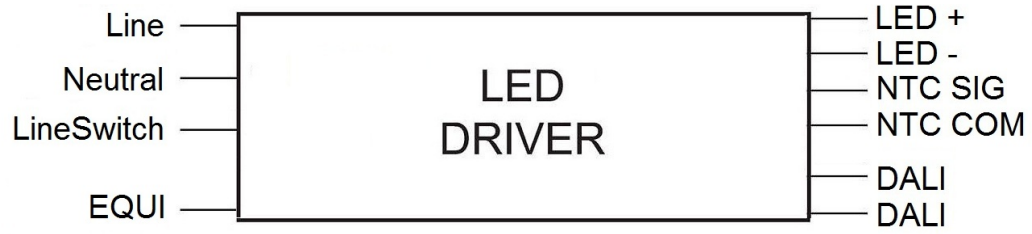
Specification item	Value	Unit	Condition
Control method	AmpDim, DALI, Dynadimmer, LineSwitch		Output current amplitude dimming
Dimming range	7…100	%	DALI acc. IEC62386-101, -102 Ed. 2.0; LineSwitch: Vlow: < 160Vac Vhigh: 170 … 264Vac
Galvanic Isolation	Double		

Logistical data

Specification item	Value
Product name	Xi FP 40W 0.3-1.0A SNLDAE 230V S175 sXt
Order code	871869652663700
Logistic code 12NC	9290 009 89306
EAN3	8718696526644
Pieces per box	20

Wiring & Connections

Specification item	Value	Unit	Condition
Input 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
Input wire strip length	8.5...9.5	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	
Maximum cable length	2500	mm	Total length of wiring including LED module, one way
Maximum NTC output cable length	0.6	m	

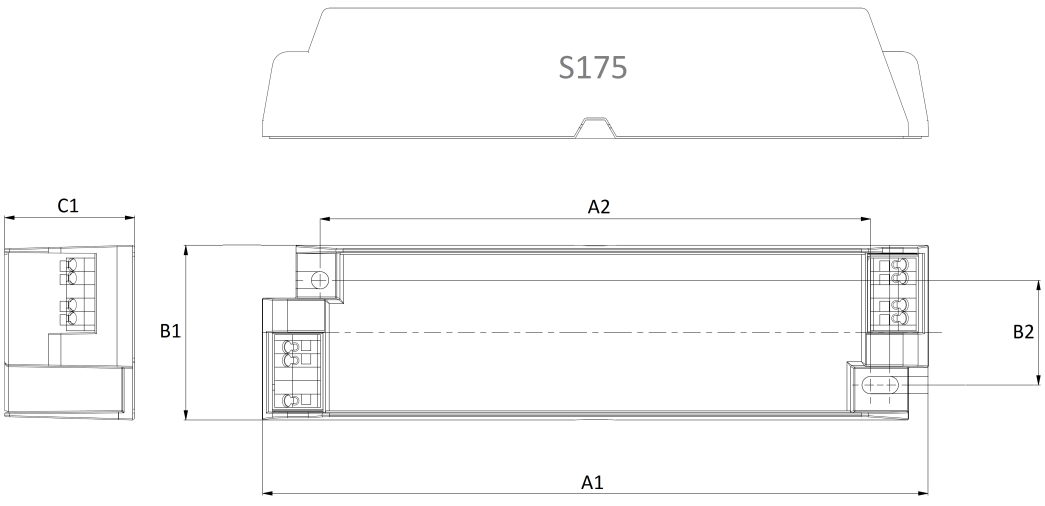


Insulation

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

Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	175	mm	
Width (B1)	46	mm	
Width (B2)	27.35	mm	
Height (C1)	34	mm	
Fixing hole diameter (D1)	4.5	mm	
Fixing hole distance (A2)	144	mm	
Weight	175	gram	



Operational temperatures and humidity

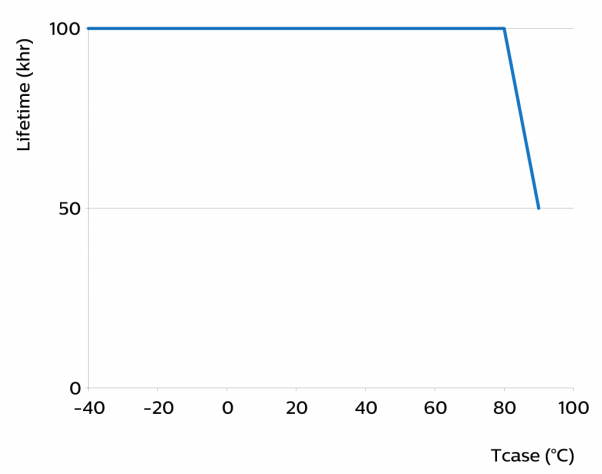
Specification item	Value	Unit	Condition
Ambient temperature	-40…+55	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded.
Starting Ambient temperature	-40…+55	°C	
Tcase-max	90	°C	Maximum temperature measured at T_{case}-point
Tcase-life	80	°C	Measured at T_{case}-point
Maximum housing temperature	120	°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%
Diagnostics	Yes		
Adjustable Light Output ALO	Yes		
Ampdim	Yes		
LineSwitch	Yes		
Adjustable Start-up Time AST	Yes		
Integrated Dynadimmer	Yes		
End Of Life indicator	Yes		

Features

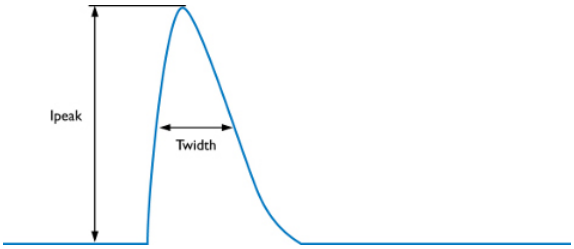
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I and II		per IEC60598
Over temperature protection driver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

Certificates and standards

Specification item	Value
Approval marks	CB / CCC / CE / ENEC / SELV
Ingress Protection classification	20

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	22	A	Input voltage 230V
Inrush current T_{width}	290	µs	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 20	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)	< 0.34	mA peak	Acc. IEC61347-1. LED module contribution not included

Surge immunity

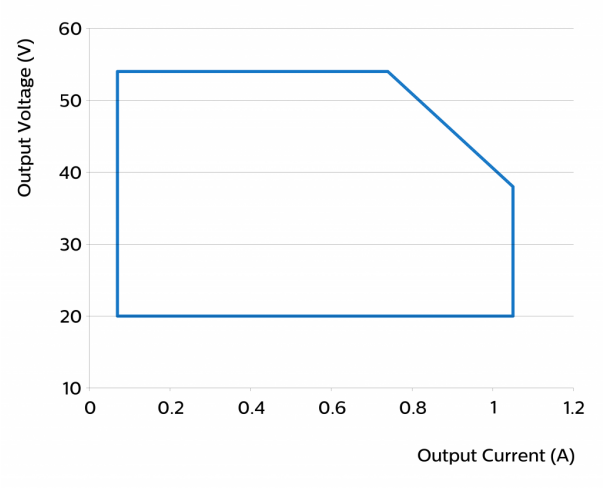
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	6	kV	L-N, Ls-L, Ls-N, acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	8	kV	L/N - EQUI, Ls - EQUI, acc.IEC61000-4-5. 12 Ohm 1.2/50us,8/20us
Control surge immunity (diff. mode)	1	kV	DALI - DALI, acc.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

Additional information

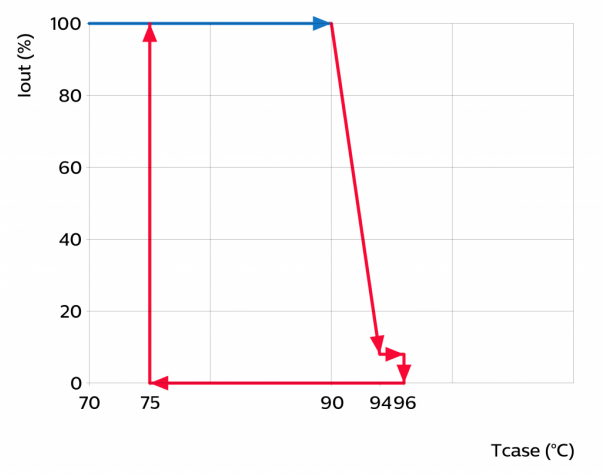
Specification item	Default setting	Remark	Condition
AOC	700	mA	
LineSwitch	ON		
CLO	OFF		
MTP	ON		
Dynadimmer	OFF		
EOL	OFF		

Graphs

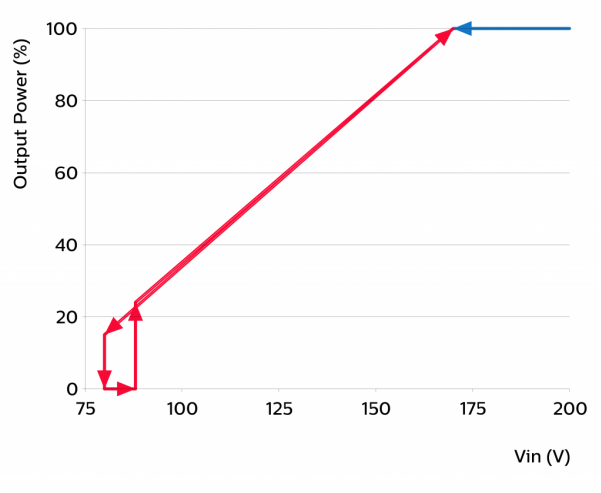
Operating window



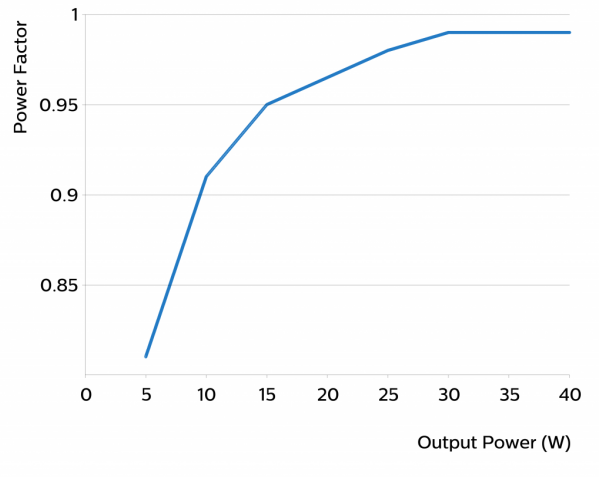
Thermal Guard



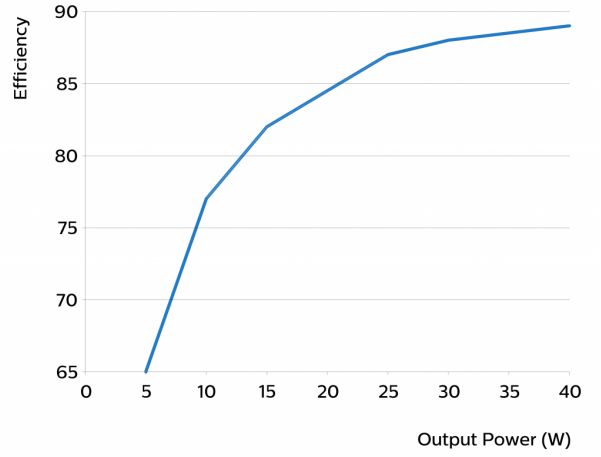
Mains Guard



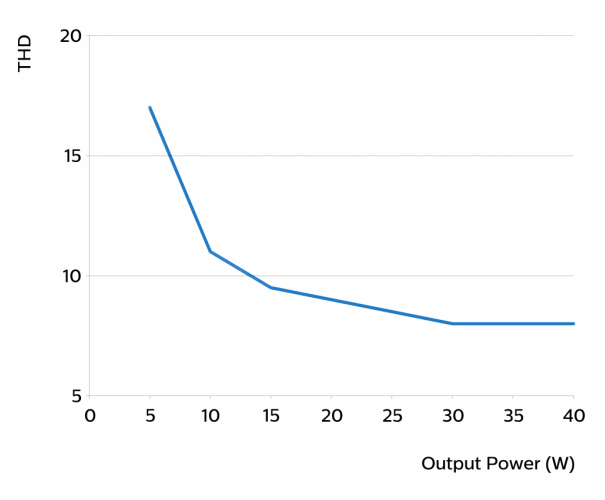
Power factor versus output power



Efficiency versus output power



THD versus output power



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