PHILIPS

Xitanium

LED driver

Datasheet

Xitanium LITE Prog LED Xtreme drivers

Xi LP 40W 0.3-1.0A S1 230V S175 sXt

Xitanium LITE Prog LED Xtreme drivers

Philips Xitanium Lite Programmable LED drivers are value engineered to deliver a carefully selected feature set and high-end performance, making it a preferred choice for many outdoor applications. The portfolio offers high flexibility with a customizable operating window, enabling differentiation in LED lighting designs via system tuning and being prepared for LED efficacy upgrades.

In this product family Philips introduces new drivers in a stretched form factor with a balanced feature set, 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 without the need to power the driver.

Benefits

- Ultimate robustness, offering peace of mind and lower maintenance costs
- Balanced configurable feature set covering the most common applications
- Easy to design-in and install for Class I and Class II applications
- Energy savings through high efficiency and via a choice of dimming options

Features

- SimpleSet®, wireless configuration interface
- High surge protection
- Long lifetime and robust protection against moisture, vibration and temperature
- Configurable operating windows(AOC)
- External control interface
- 1-step autonomous dimming via integrated DynaDimmer LITE
- Thermal protection for driver (integrated)
- Simplified linear version of Constant Light Output (CLO LITE)

Application

- Road and street lighting
- Area lighting

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	220 ... 240	Vac	Performance
Input voltage range	198 ... 264	Vac	Operational
Rated input frequency range	50 ... 60	Hz	Performance
Input frequency range	45 ... 66	Hz	Operational
Rated input current	0.21	A	230Vac, full load
Rated input power	46	W	230Vac, full load
Power factor	≥ 0.99		230Vac, full load. See graph
Total harmonic distortion	≤ 10	%	230Vac, full load. See graph
Efficiency	88	%	230Vac, full load. See graph

Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	20...54	Vdc	See graph
Output voltage max.	60	V	Peak voltage at open load
Programmable output current	300 ... 1000	mA	
Output current min. dimming	200	mA	
Output current tolerance	± 5	%	
Output current ripple LF	≤ 6	%	Ripple = peak / average, 70Hz … 1kHz
Output current ripple HF	≤ 5	%	Ripple = peak / average, > 1kHz
Output power range	4 ... 40	W	

Electrical data controls input

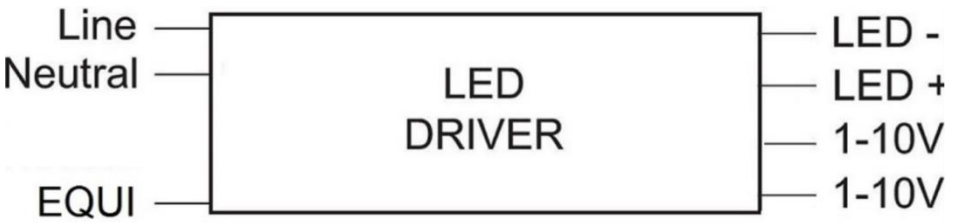
Specification item	Value	Unit	Condition
Control method	1- 10V, Dynadimmer LITE		1-10V acc. IEC60929, 150µA sourcing current
Dimming range	20...100	%	Output current amplitude dimming

Logistical data

Specification item	Value
Product name	Xi LP 40W 0.3-1.0A S1 230V S175 sXt
Order code	871869647596600
Logistic code 12NC	9290 009 40806
EAN3	8718696475973
Pieces per box	20

Wiring & Connections

Specification item	Value	Unit	Condition
Input wire cross-section	0.2...1.5	mm^2	Push-in at 45° angle, solid and stranded wire
	24...16	AWG	
Input wire strip length	8.5...9.5	mm	
Output wire cross-section	0.2...1.5	mm^2	Push-in at 45° angle, solid and stranded wire
	24...16	AWG	
Output wire strip length	8.5...9.5	mm	
Maximum output cable length	2.5	m	CISPR15: between driver and LED module

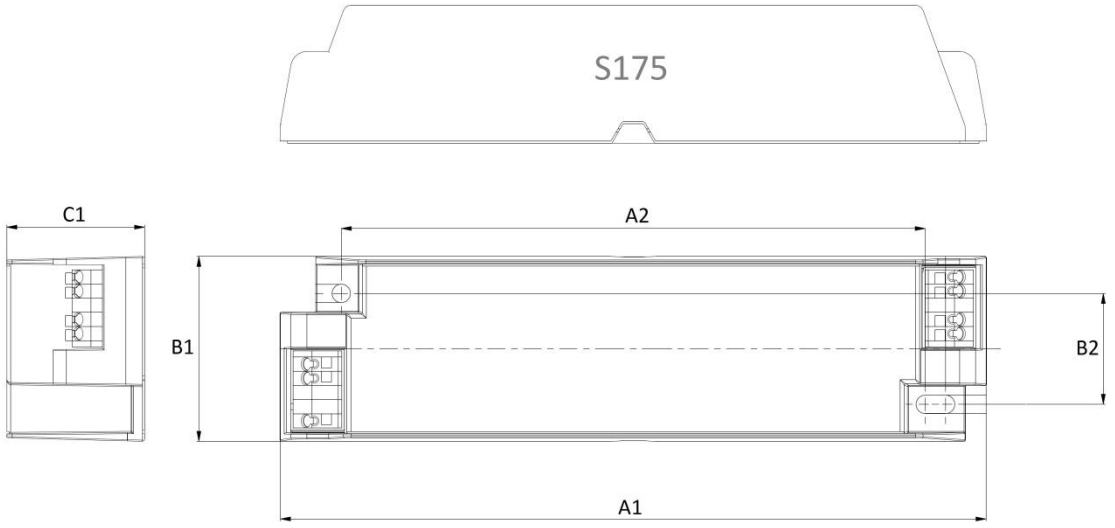


Insulation

Insulation	Mains	EQUI	LED	1-10V
Mains	N/A	Double	Double (SELV)	Basic
EQUI	Double	N/A	Basic	Basic
LED	Double (SELV)	Basic	N/A	Basic
1-10V	Basic	Basic	Basic	N/A

Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	175 ± 0.1	mm	
Width (B1)	46 ± 0.5	mm	
Height (C1)	34 ± 0.4	mm	
Fixing hole diameter	4.5	mm	Mounting screw: M4. Max. torque: 1.5Nm
Fixing hole distance (A2)	144 ± 0.2	mm	
Fixing hole distance (B2)	27.35 ± 0.2		
Weight	165	gram	



Operational temperatures and humidity

Specification item	Value	Unit	Condition
Driver ambient temperature	-30...+55	°C	At rated output power. Higher ambient temperature allowed as long as Tcase-max is not exceeded
Tcase-min	-30	°C	Min. steady-state Tcase
Tcase-max	+80	°C	Max. steady-state Tcase
Tcase-life	-30...+70	°C	For rated driver lifetime
Maximum housing temperature	130	°C	In case of failure
Relative humidity	10...90	%	Non-condensing
Ingress Protection	20		Suggested luminaire IP: ≥ IP54
Noise and hum	16	dB	Typical

Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-30...+55	°C	
Relative humidity	10...90	%	Non-condensing

Lifetime

Specification item	Value	Unit	Condition
Rated driver lifetime	100,000	hours	Tcase ≤ Tcase-life Maximum failures = 10%

Programmable features

Specification item	Value	Remark	Default setting
Adjustable Output Current (AOC)	SimpleSet	See Design-in guide	700mA
1-10V dimming interface	Yes	1-8V, 1-9V	Enabled, 1-8V
Constant Lumen Over Lifetime (CLO)	Yes	CLO LITE	Disabled
Diagnostics	Yes	Basic	Enabled
Integrated Dynadimmer	Yes	Dynadimmer LITE, override possible by 1-10V	Disabled

Features

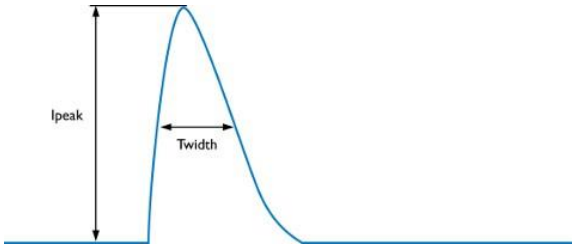
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Overheating protection	Yes		Automatic recovering Driver shutdown at Tcase= 100°C Driver restart at Tcase= 90°C
Hot wiring	No		
Suitable for luminaire insulation class	I and II		Per IEC60598

Certificates and standards

Specification item	Value
Approval marks	CE / ENEC / CB

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	27	A	Input voltage 230Vac
Inrush current t_{width}	265	µs	Input voltage 230Vac, measured at 50% I_{peak}
Typical number of drivers	Max. 18	pcs	MCB 16A B type, mains impedance 200mΩ + 400µH



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

Driver touch current

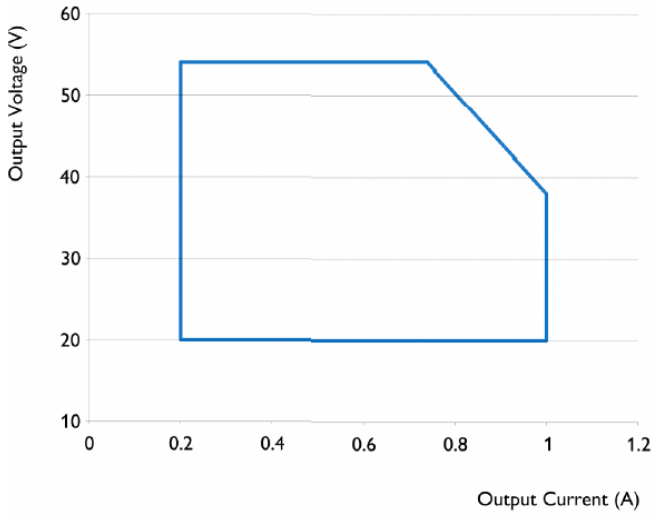
Specification item	Value	Unit	Condition
Typical touch current	0.48 / 0.56	mA_{peak}	Acc. IEC61347-1 at 230Vac 50/60Hz LED module contribution not included

Surge immunity

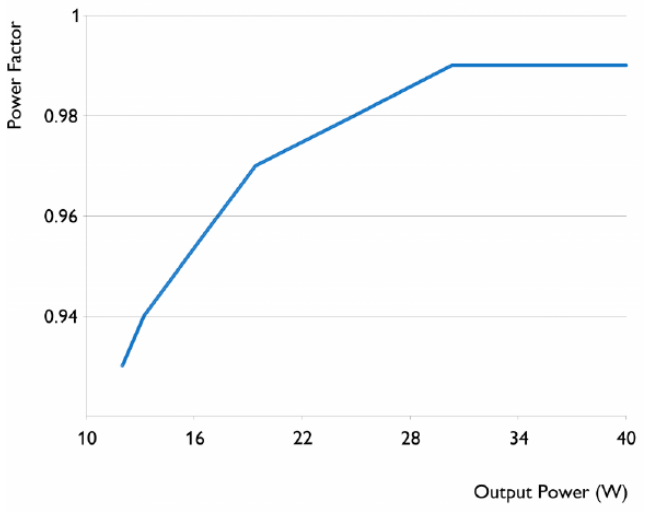
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	6 / 3	kV / kA	L-N, acc. IEC61000-4-5. 2 Ohm, 1.2/50µs, 8/20µs
Mains surge immunity (comm. mode)	6	kV	L/N – GND acc. IEC61000-4-5. 12 Ohm, 1.2/50µs, 8/20µs
Control surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm 1.2/50µs, 8/20µs
Control surge immunity (comm. mode)	2	kV	Control – L/N/GND acc. IEC61000-4-5. 12 Ohm 1.2/50µs, 8/20µs

Graphs

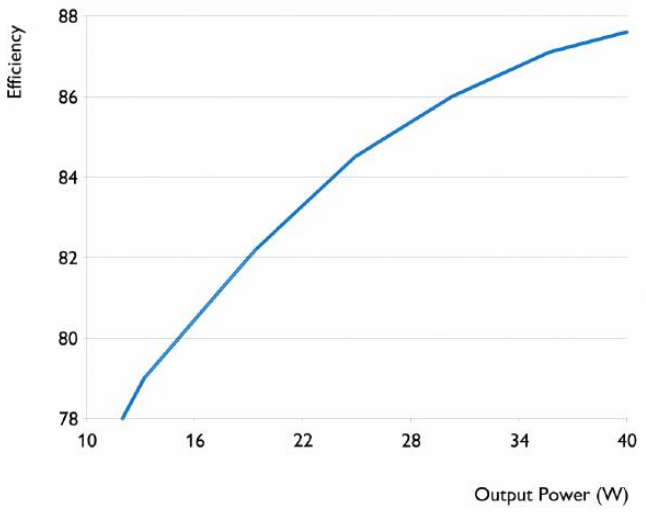
Operating window



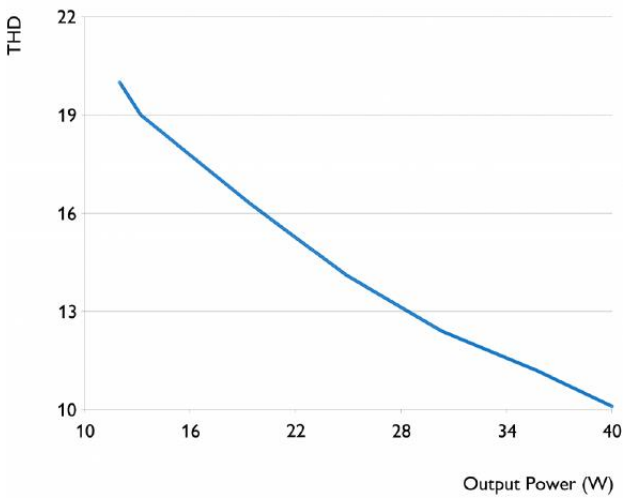
Power factor versus output power



Efficiency versus output power



THD versus output power



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Date of release: November 2015

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