PHILIPS

Xitanium

LED driver

Datasheet

Xitanium LITE Prog LED Xtreme drivers

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

9290 009 40806

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 offers drivers in both compact as well as stretched form factors 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 Insulation 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 immunity
- Long lifetime and robust protection against moisture, vibration and temperature
- Configurable operating windows (AOC)
- External control interface 1-10V or LineSwitch
- Autonomous dimming via integrated Dynadimmer or Dynadimmer LITE
- Adjustable thermal protection for driver (DTL, select models)
- Adjustable thermal protection for LED module (MTP, select models)
- Simplified linear version of Constant Light Output (CLO LITE)
- DC input voltage operation (select models)

Application

- Road and street lighting
- Area lighting
- Tunnel lighting
- Industrial lighting

March 2021

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	0.98		@ rated output power @ rated input voltage
Total harmonic distortion	8	%	@ rated output power @ rated input voltage
Efficiency	88.5	%	@ rated output power @ rated input voltage
Input voltage AC range	80…305	V_{ac}	Safety operational range; see MainsGuard graph
Input frequency AC range	45…66	Hz	Safety operational range
Isolation input to output	SELV		

Electrical output data

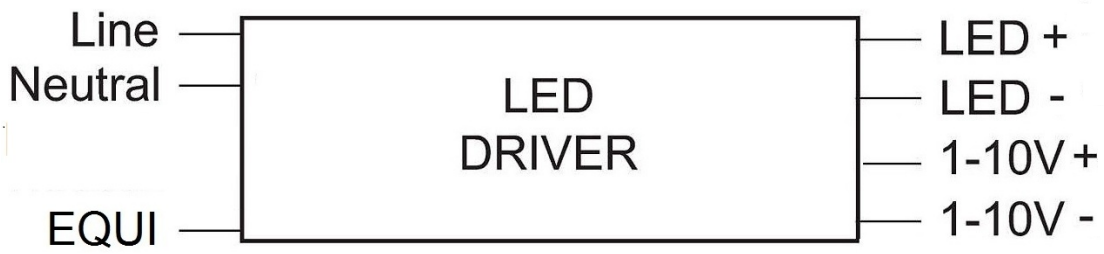
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	20…54	V_{dc}	
Output voltage max.	60	V	Maximum voltage at open load
Output current	0.07…1.05	A	
Output current min programmable	300	mA	
Output current min dimming	70	mA	
Output current tolerance ±	5	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average @ < 3kHz
Output current ripple HF	≤ 4	%	
Output P_{st}^{LM}	≤ 0.04		
Output SVM	≤ 0.04		
Output power	1.4…40	W	

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	1-10V, Dynadimmer		Output current amplitude dimming, 1-10V acc. IEC60929
Dimming range	10…100	%	Default curve: 1-8V
Isolation controls input to output	Basic		acc. IEC61347-1

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.5…1.5 / 20…16	mm^2 / AWG	WAGO250 (pitch 3.5 mm), solid / stranded wire
Input wire strip length	8.5…9.5	mm	
Output wire cross-section	0.5…1.5 / 20…16	mm^2 / AWG	WAGO250 (pitch 3.5 mm), solid / stranded wire
Output wire strip length	8.5…9.5	mm	
Control wire cross-section	0.5…1.5 / 20…16	mm^2 / AWG	WAGO250 (pitch 3.5 mm), solid / stranded wire
Control wire strip length	8.5…9.5	mm	
Maximum cable length	2.5	m	Total length of wiring including LED module

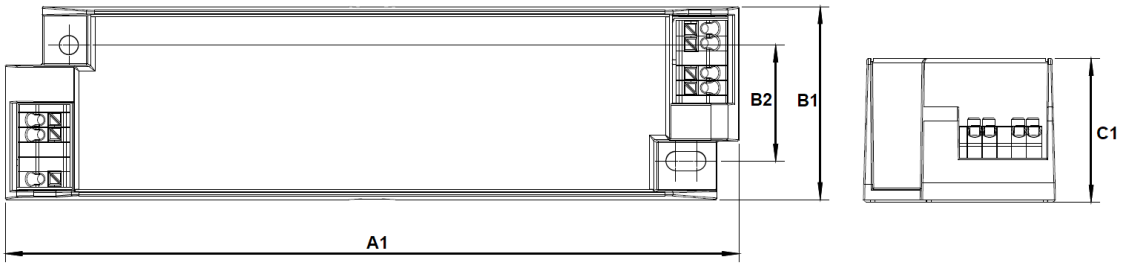


Insulation

Insulation per IEC61347-1	Mains	EQUI	LED	1-10V
Mains		Double	SELV	Basic
EQUI	Double		Basic	Basic
LED	SELV	Basic		Basic
1-10V	Basic	Basic	Basic	

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	175	mm	
Mounting hole distance (A2)	144	mm	
Width (B1)	46	mm	
Width (B2)	27.35	mm	
Height (C1)	34	mm	
Mounting hole diameter (D1)	4.5	mm	
Weight	172	gram	



Logistical data

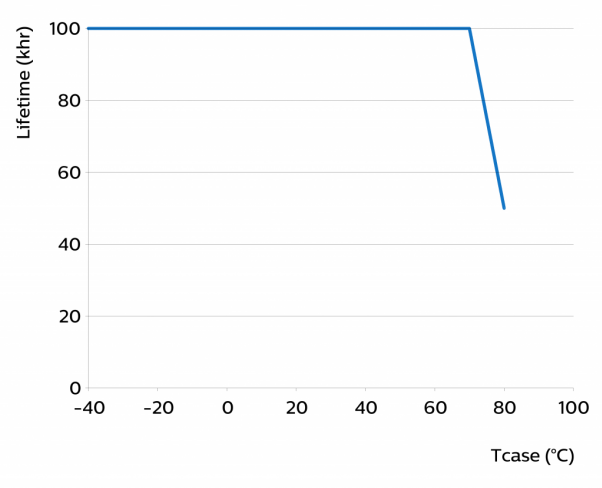
Specification item	Value
Product name	Xi LP 40W 0.3-1.0A S1 230V S175 sXt
EOC	871869647596600
Logistic code 12NC	9290 009 40806
EAN1 (GTIN)	8718696475966
EAN3 (box)	8718696475973
Pieces per box	20

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
Tcase-max	80	°C	Maximum temperature measured at T_{case}-point
Tcase-life	70	°C	Measured at T_{case}-point
Maximum housing temperature	130	°C	In case of a failure, inherent by design
Relative humidity	10…90	%	Non-condensing

Lifetime

Specification item	Value	Unit	Condition
Driver lifetime	100,000	hours	Measured temperature at Tcase-point is Tcase-life. Maximum failures = 10%



Storage temperature and humidity

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

Programmable features

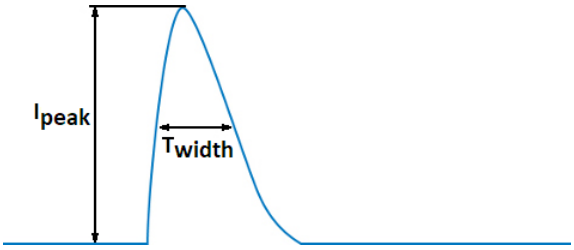
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	SimpleSet	700 mA	
Constant Light Output (CLO) LITE	Yes		
Integrated Dynadimmer	Yes	OFF	5-step, no light turn-off possible
Min Dim Level	Yes	10 %	
OEM Write Protection (OWP)	Yes	OFF	

Features

Specification item	Value		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
Overtemperature protection	Yes		Automatic recovering
Diagnostics	Yes		

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	16	A	Input voltage 230V
Inrush current T_{width}	240	µs	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 25	pcs	Indicative value



MCB	Rating	Relative number of LED drivers
B	4A	25%
B	6A	40%
B	10A	63%
B	13A	81%
B	16A	100% (stated in datasheet)
B	20A	125%
B	25A	156%
B	32A	200%
B	40A	250%
C	4A	42%
C	6A	63%
C	10A	104%
C	13A	135%
C	16A	170%
C	20A	208%
C	25A	260%
C	32A	340%
C	40A	415%

Driver touch current / protective conductor current

Specification item	Value	Unit	Condition
Typical Touch Current (ins. Class II)	0.3	mA peak	Acc. IEC61347-1. LED module contribution not included
Typical Protective Conductor Current (ins. Class I)	0.2	mA rms	Acc. IEC60598-1. LED module contribution not included

Surge immunity

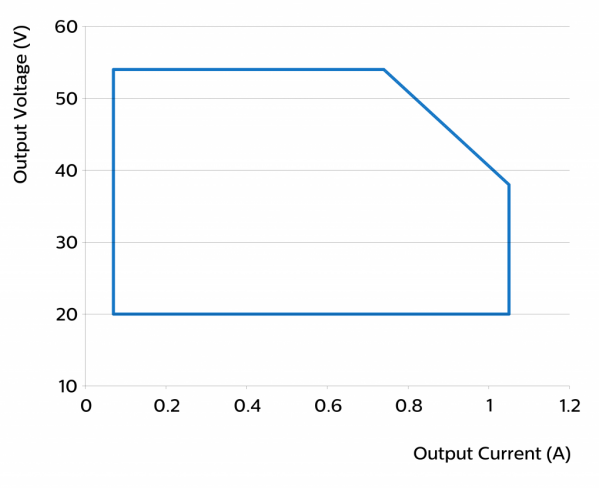
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	6	kV	L-N acc. IEC61000-4-5. 2 Ohm 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	10	kV	L/N - EQUI 10kV acc. EN61547; 8kV acc. IEC61000-4-5, 12 Ohm 1.2/50us,8/20us
Control surge immunity (diff. mode)	0.5	kV	1-10V + -: acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge immunity (comm. mode)	6	kV	1-10V - EQUI, acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (comm. mode)	6	kV	1-10V - L/N, acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Application Info

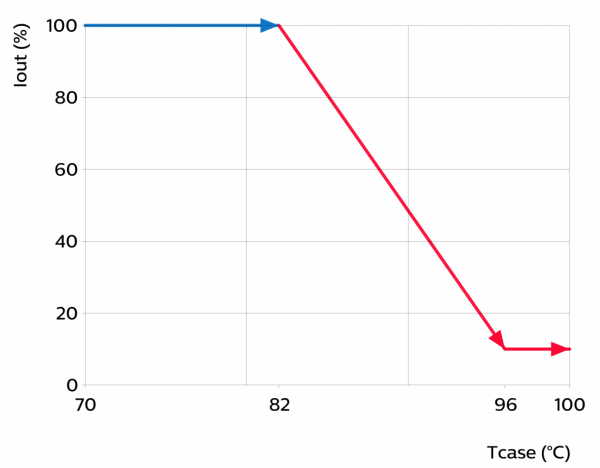
Specification item	Value
Approval marks	130 / CCC / CE / Double-insulated Built-In / EAC / ENEC / SELV / UA
Ingress Protection classification (IP)	20
Application	Outdoor
Mounting Type	Built-in

Graphs

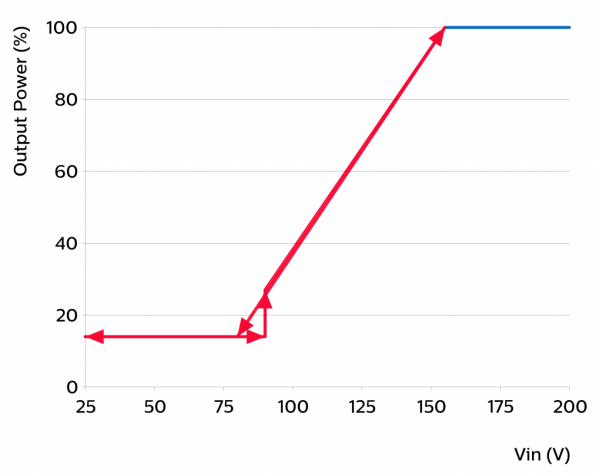
Operating window



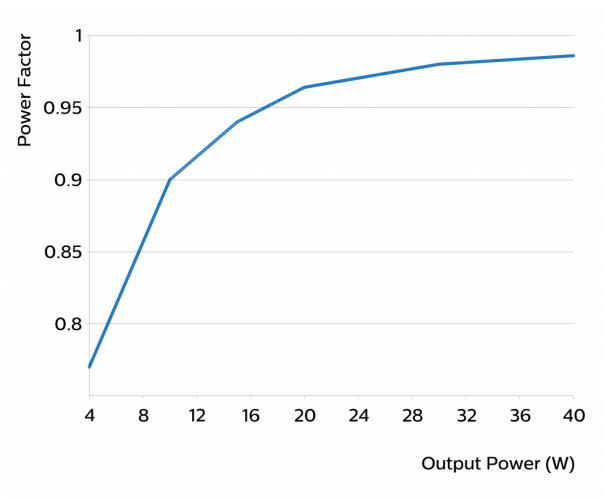
Thermal Guard



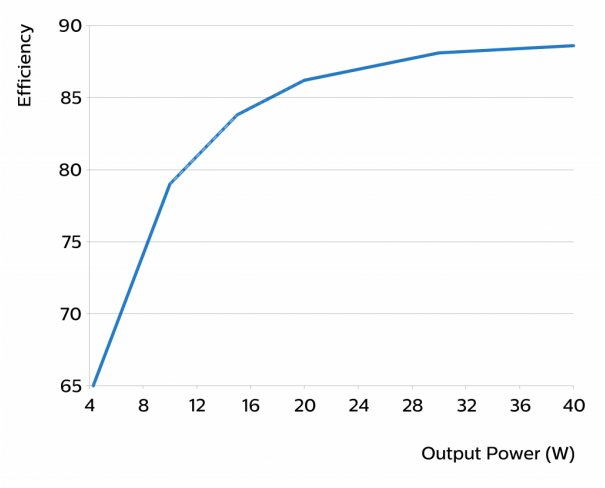
Mains Guard



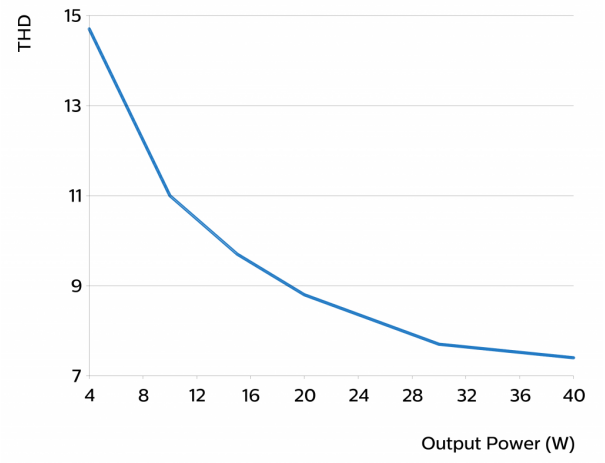
Power factor versus output power



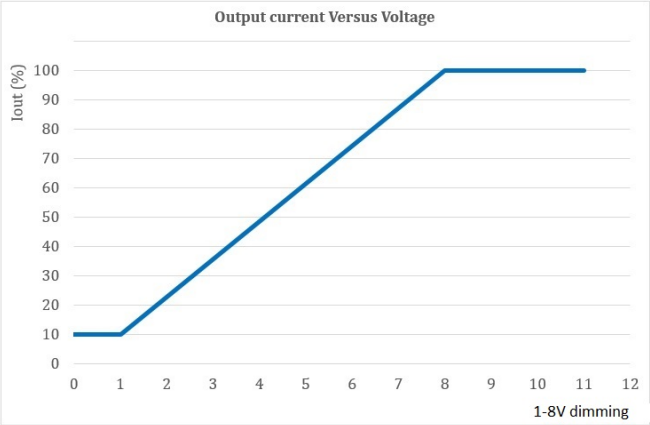
Efficiency versus output power

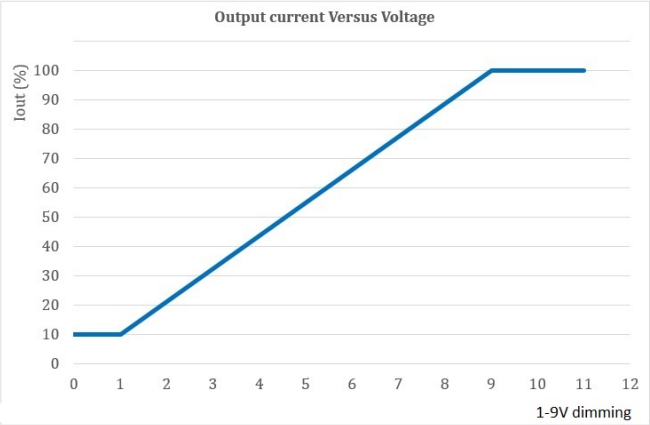


THD versus output power



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





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