Xitanium

Datasheet

Xitanium LITE Prog LED Xtreme drivers

Xi LP 165W 0.5-1.5A S1 230V C170 sXt
9290 015 71906



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

Application

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

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)

Logistical data

Specification item	Value
Product name	Xi LP 165W 0.5-1.5A S1 230V C170 sXt
EOC	871869671132300
Logistic code 12NC	9290 015 71906
EAN1 (GTIN)	8718696711323
EAN3 (box)	8718696711330
Pieces per box	9
Weight	920 gram

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	47...63	Hz	Performance range
Rated input current	0.78	A	@ rated output power @ rated input voltage
Max. input current	0.89	A	@ rated output power @ minimum performance input voltage
Rated input power	178.0	W	@ rated output power @ rated input voltage
Power factor performance range	≥ 0.99		@ rated output power @ rated input voltage@ rated output power @ rated input voltage
Total harmonic distortion	5	%	@ rated output power @ rated input voltage
Efficiency	92.0	%	@ rated output power @ rated input voltage @ max. Uout
Rated input voltage DC	186...250	V_{dc}	Performance range. No external DC-rated fuse required. Internal fuse rating T5A 250VDC/AC. EOFi = 60%.
Rated input current DC	≤ 0.65	A_{dc}	Performance range
Input voltage AC	85...264	V_{ac}	Operational range
Input frequency AC	45...66	Hz	Operational range
Input voltage DC	168...275	V_{dc}	Operational range
Isolation input to output	Double		

Electrical output data

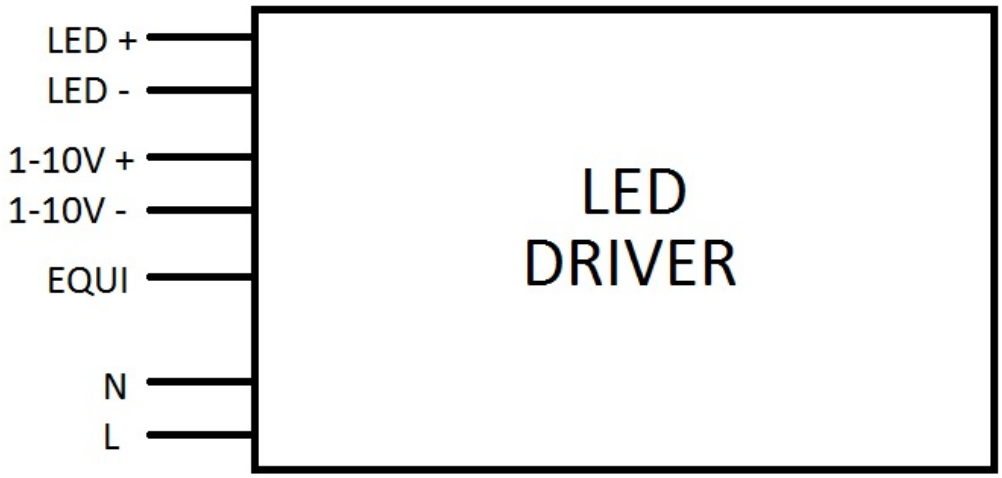
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	54...157	V_{dc}	
Output voltage max.	200	V	Maximum voltage at open load
Output current	150...1500	mA	
Output current min programmable	500	mA	
Min output current	150	mA	
Output current tolerance ±	5	%	@full load
Output current ripple LF	≤ 4	%	Ripple = peak / average, < 3kHz
Output current ripple HF	≤ 4	%	
Output P_{st}^{LM}	≤ 0.4		
Output SVM	≤ 0.3		
Output power	9.0...165.0	W	

Control interfaces

Specification item	Value	Unit	Condition
Control method	1-10V, Dynadimmer		Output current amplitude dimming, 1-10V acc. IEC60929. Please refer to design-in guide at www.philips.com/oem for more controllability details.
Dimming range	10...100	%	Default curve: 1-8V
Isolation controls input to output	Double		acc. IEC61347-1

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.5...2.5	mm² / AWG	solid / stranded wire
Input wire strip length	10...11	mm	
Output wire cross-section	0.5...1.5 / 20...16	mm² / AWG	solid / stranded wire
Output wire strip length	8.5...9.5	mm	
Control wire cross-section	0.5...1.5 / 20...16	mm² / AWG	solid / stranded wire
Control wire strip length	8.5...9.5	mm	
Maximum cable length	1.5	m	CISPR15: between driver and LED module

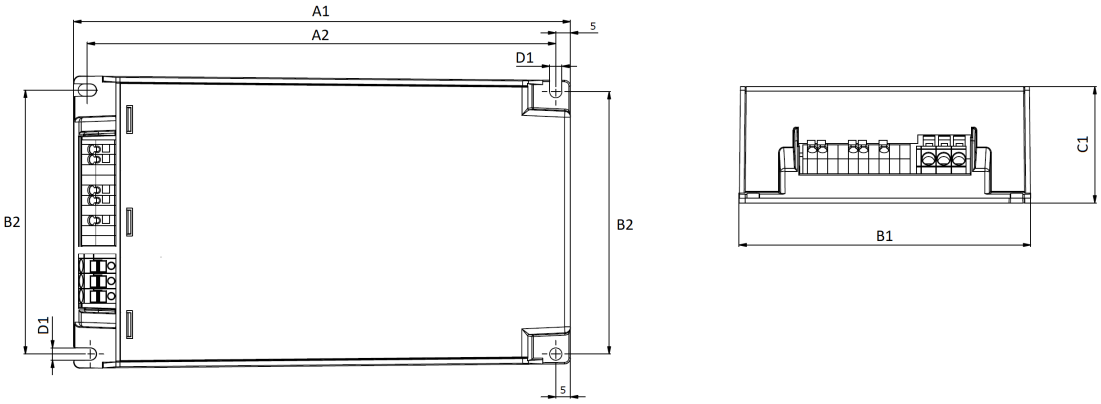


Isolation

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

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	170	mm	
Mounting hole distance (A2)	160	mm	
Width (B1)	100	mm	
Width (B2)	90	mm	
Height (C1)	40	mm	
Mounting hole diameter (D1)	4.2	mm	
Weight	920	gram	

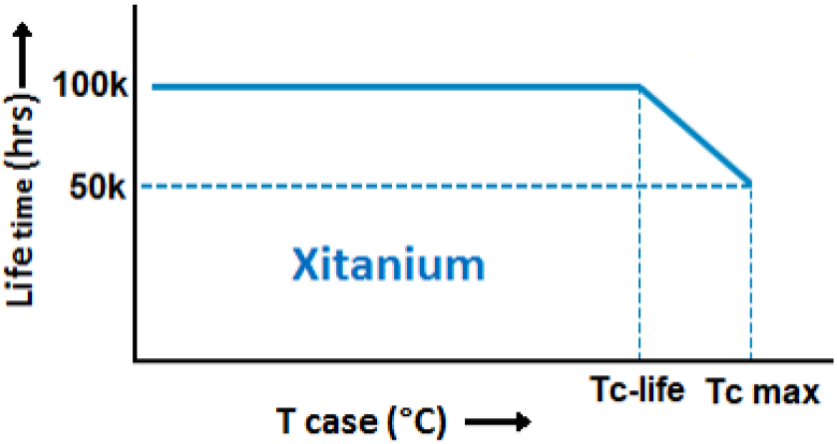


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+55	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded
Tcase-max	85	°C	Maximum temperature measured at T_{case}-point
Tcase-life	75	°C	Measured at T_{case}-point
Maximum housing temperature	120	°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%



Maximum failures = 10%

Temperature [°C]	Lifetime	Unit	Condition
85	50000	hr	
80	71000	hr	
75	100000	hr	Temperature measured @Tc point
70	>100000	hr	
65	>100000	hr	

Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+85	°C	
Relative humidity	5...95	%	Non-condensing

Programmable features

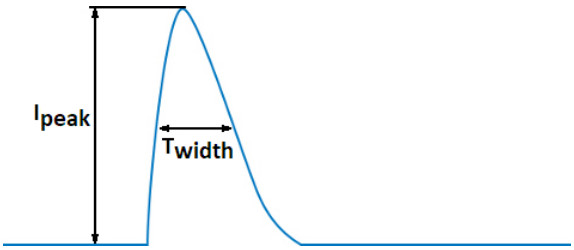
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	SimpleSet	1050 mA	
Constant Light Output (CLO) LITE	Yes	OFF	
1-10V	Yes	ON	
Integrated Dynadimmer	Yes	OFF	5-step, no light turn-off possible
Min Dim Level (%)	Yes	10 %	

Non-programmable 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 via Signify tool	Yes	

Inrush current

Specification item	Value	Unit	Condition
Inrush current	41	A	Input voltage 230V
Inrush peak width	440	µs	Input voltage 230V, measured at 50% height
Drivers / MCB 16A type B @230V AC	≤ 7	pcs	Input voltage 230V



Please refer to the driver design in guide if you use other MCB-types.

If several mini circuit breakers are used directly side-by-side (without distance pieces

a correction factor of 80% has to be applied to the rated current

Driver touch current / protective conductor current / earth leakage 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

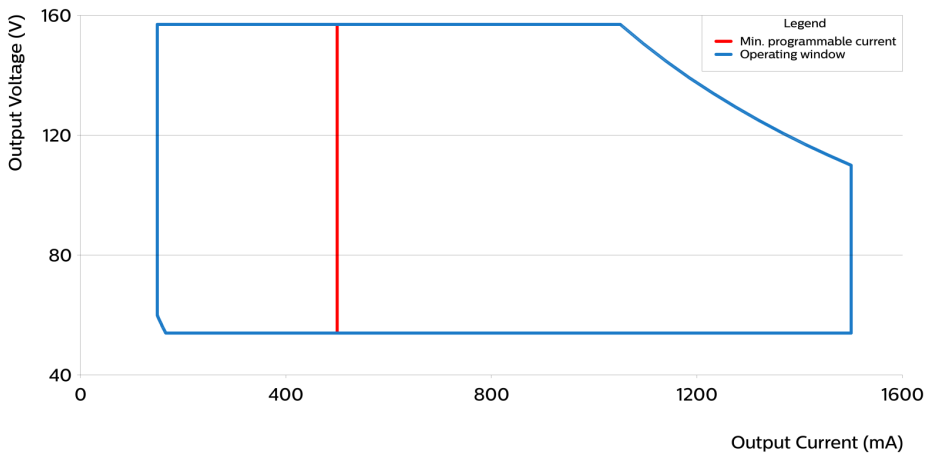
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	6	kV	L-N acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	10	kV	L/N-EQUI: 10kV acc. EN61547; 8kV acc. IEC610004-5, 12 Ohm 1.2/50us,8/20us
Control surge immunity (diff. mode)	0.5	kV	1-10V +/- acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge immunity (comm. mode)	2.5	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 (Approbation)

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

Graphs

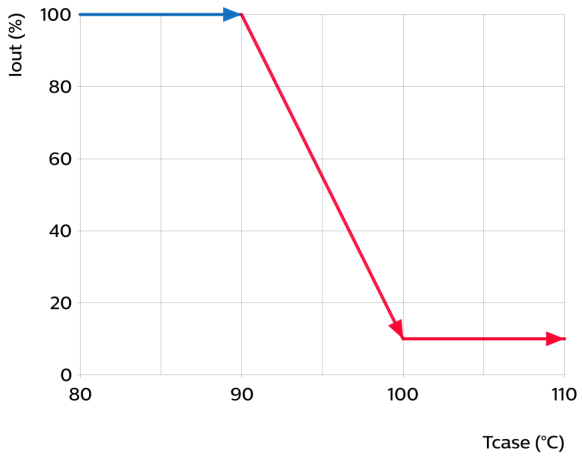
Operating window



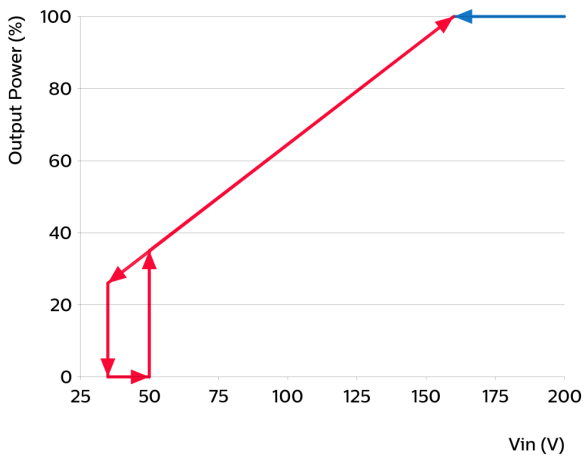
Type	Output current (mA)	Min. output voltage (V)	Max. output voltage (V)	Max. output power (W)
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	500	54	157	78.5
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	550	54	157	86.35
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	600	54	157	94.2
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	650	54	157	102.05
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	700	54	157	109.9

Xi LP 165W 0.5-1.5A S1 230V C170 sXt	750	54	157	117.75
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	800	54	157	125.6
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	850	54	157	133.45
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	900	54	157	141.3
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	950	54	157	149.15
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	1000	54	157	157
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	1050	54	157	164.85
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	1100	54	150	165
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	1150	54	143	165
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	1200	54	137	165
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	1250	54	132	165
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	1300	54	126	165
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	1350	54	122	165
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	1400	54	117	165
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	1450	54	113	165
Xi LP 165W 0.5-1.5A S1 230V C170 sXt	1500	54	110	165

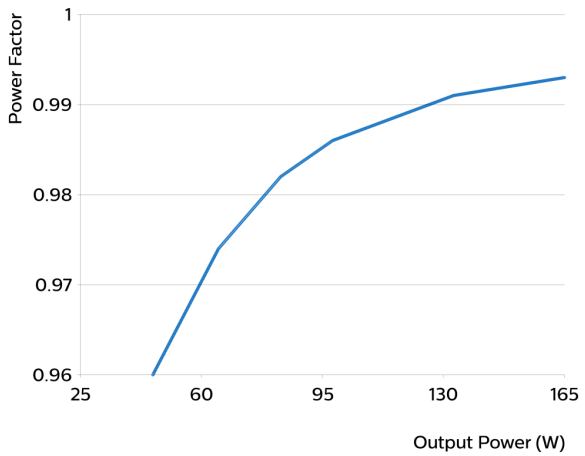
Thermal Guard



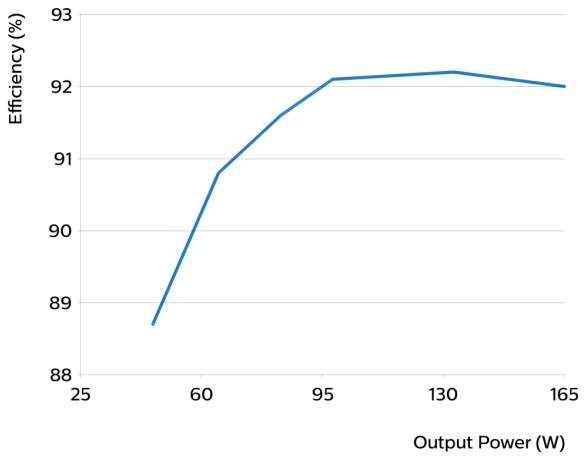
Mains Guard



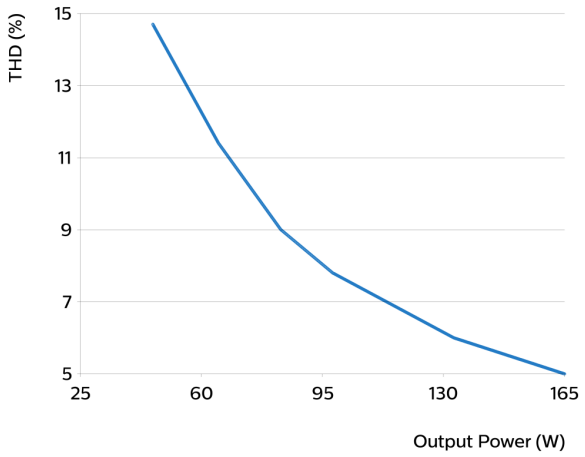
Power factor versus output power



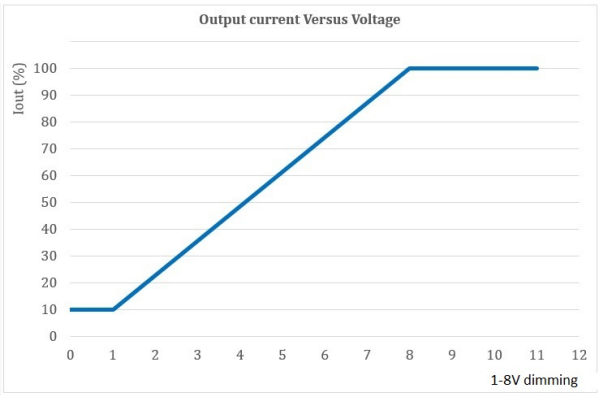
Efficiency versus output power

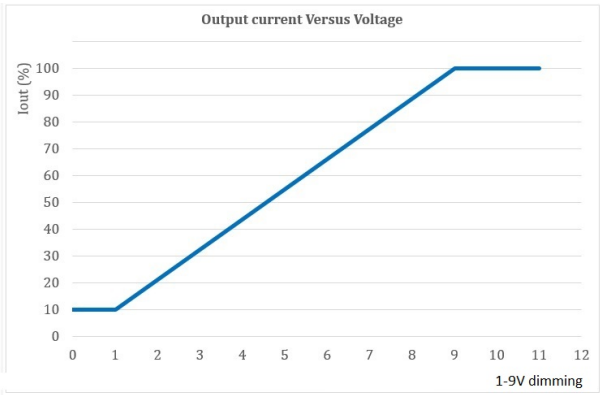


THD versus output power



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





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