

Datasheet

Xitanium Xtreme LED Drivers Dimmable (1-10V)

Xitanium 150W 0.70A 1-10V 230V S240 sXt
9290 014 05506



LED-based light sources are an excellent solution for outdoor environments. They are long-lasting and require low maintenance. However, to get the best out of the LEDs, these light sources require highly reliable and efficient LED Drivers. Philips Xitanium Dimmable (1-10V) LED Xtreme Drivers for Outdoor and Industry applications are specifically designed to deliver reliable performance and protection while meeting the strict performance, approbation and application requirements.

Benefits

- Reliable
- Robust design
- Long lifetime
- Superior surge protection
- 5 years warranty
- Waterproof performance
- Proven robustness & reliability secure the lowest luminaire maintenance over time
- Extreme compact size, suitable for a wide range of luminaires
- Easy to design-in based on good thermal management and extra EMI margin

Application

- Road and Street Lighting
- Tunnel Lighting
- Area and Flood Lighting
- High-bay lighting

Features

- Proven robust and reliable electronic driver design
- Achieving highest efficiencies based on advanced technology
- Long lifetime
- Solid surge protection
- DC operation for industry applications (150W)
- Suitable for Insulation Class I and Class II luminaires
- CE, ENEC, and CB certified

Logistical data

Specification item	Value
Product name	Xitanium 150W 0.70A 1-10V 230V S240 sXt
EOC	871869664623600
Logistic code 12NC	9290 014 05506
EAN1 (GTIN)	8718696646236
EAN3 (box)	8718696646243
Pieces per box	10
Weight	710 gram

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	220...240	V _{ac}	Performance range
Rated input voltage	230	V _{ac}	
Rated input frequency	50...60	Hz	Performance range
Rated input current	0.72	A	@ rated output power @ rated input voltage
Max. input current	0.82	A	@ rated output power @ minimum performance input voltage
Rated input power	165.0	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	7	%	@ rated output power @ rated input voltage
Efficiency	93.3	%	@ rated output power @ rated input voltage @ max. U _{out}
Rated input voltage DC	186...250	V _{dc}	Performance range
Rated input current DC	≤ 0.54	A _{dc}	Performance range
Input voltage AC	198...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

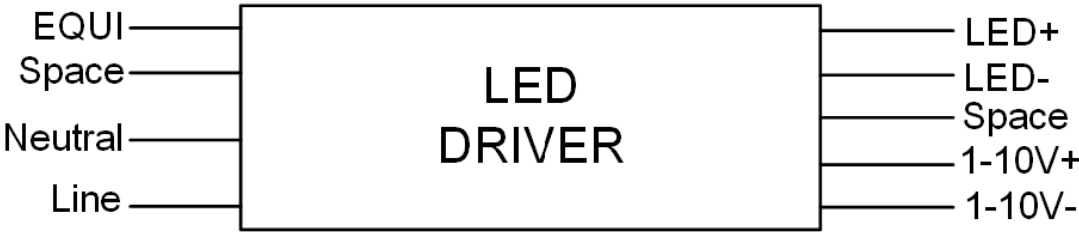
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	100...214	V _{dc}	
Output voltage max.	320	V	Maximum output voltage (rms)
Output current	700	mA	
Min output current	70	mA	
Output current tolerance ±	5	%	@full load
Output current ripple LF	≤ 4	%	Ripple = peak / average, < 3kHz
Output current ripple HF	≤ 15	%	
Output P _{st} ^{LM}	≤ 0.3		
Output SVM	≤ 0.3		
Output power	7.0...150.0	W	

Control interfaces

Specification item	Value	Unit	Condition
Control method	1-10V		Amplitude dimming. See design-in guide at www.philips.com/oem for more controllability details.
Dimming range	10...100	%	1-8V dimming curve
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	mm ² / AWG	solid / stranded wire
Input wire strip length	10...11	mm	
Output wire cross-section	0.5...1.5	mm ² / AWG	solid / stranded wire
Output wire strip length	8.5...9.5	mm	
Maximum cable length	1.5	m	Total length of wiring including LED module, one way

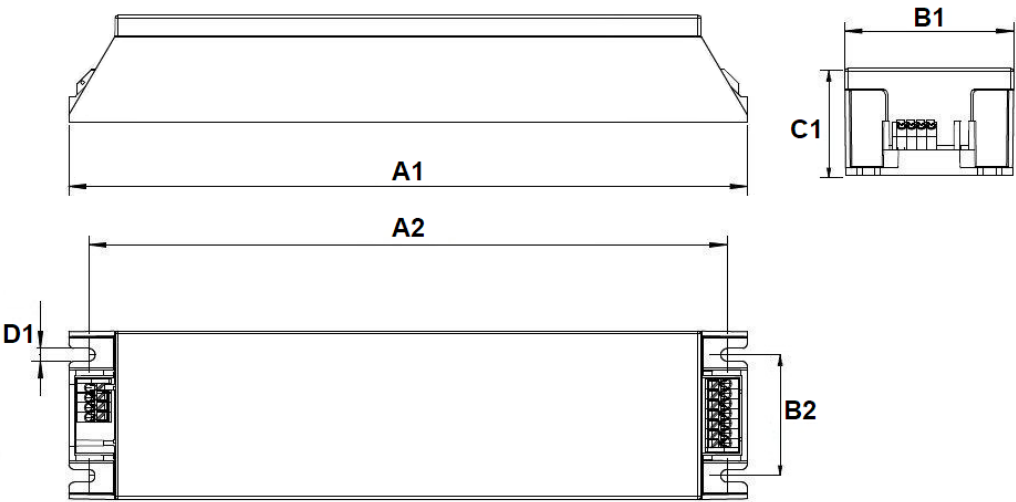


Isolation

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

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	240	mm	
Mounting hole distance (A2)	226	mm	
Width (B1)	59.7	mm	
Width (B2)	42.9	mm	
Height (C1)	37.8	mm	
Mounting hole diameter (D1)	4.5	mm	
Weight	710	gram	

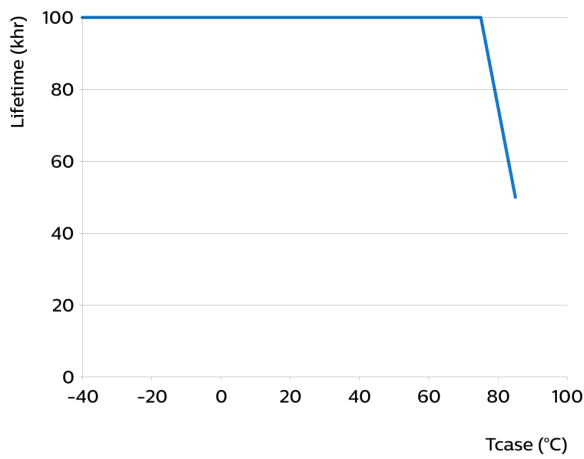


Operational temperatures and humidity

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}	85	°C	Maximum temperature measured at T _{case} -point
T _{case-life}	75	°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%
Driver lifetime Tcmax	0	hours	Measured temperature at Tcase-point is Tcase-life. Maximum failures = 10%



Maximum failures = 10%

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

Storage temperature and humidity

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

Programmable features

Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	No	700 mA	

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

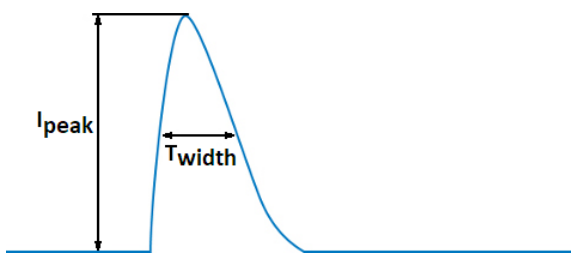
Inrush current

Specification item	Value	Unit	Condition
Inrush current	34	A	Input voltage 230V
Inrush peak width	475	µs	Input voltage 230V, measured at 50% height
Drivers / MCB 16A type B @230V AC	≤ 8	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 piece)

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)	0.45	mA peak	Acc. IEC61347-1. LED module contribution not included
Typical Protective Conductor Current (ins. Class I)	0.3	mA rms	Acc. IEC60598-1. LED module contribution not included

Surge immunity

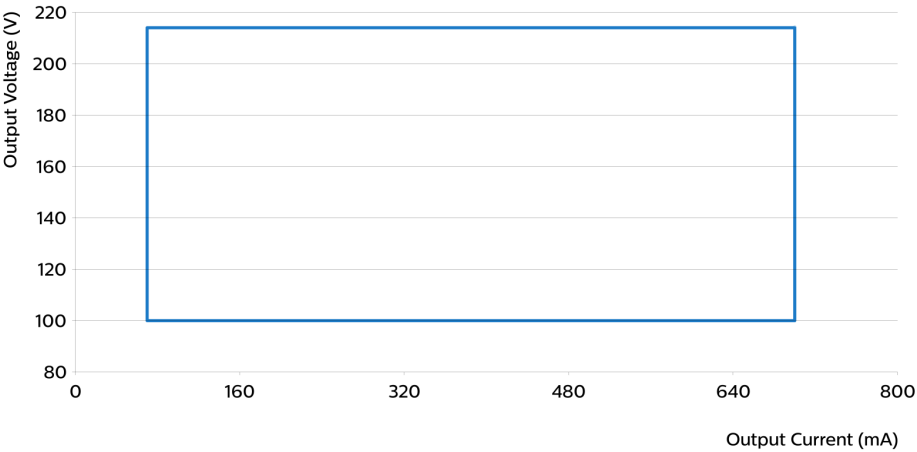
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	6	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	8	kV	Acc. IEC61000-4-5. 12 Ohm 1.2/50us, 8/20us
Control surge immunity (diff. mode)	0.5	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge immunity (comm. mode)	2.5	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Application Info (Approbation)

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

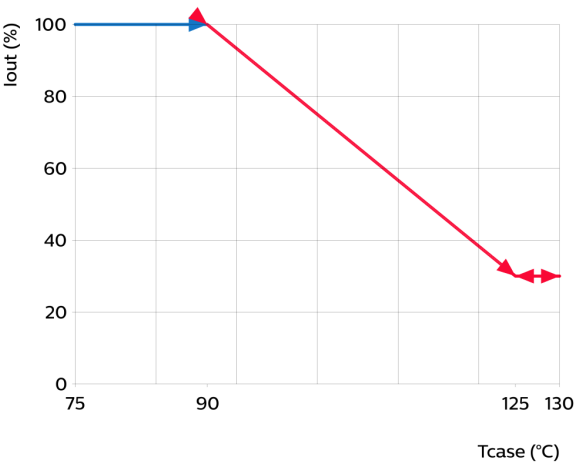
Graphs

Operating window

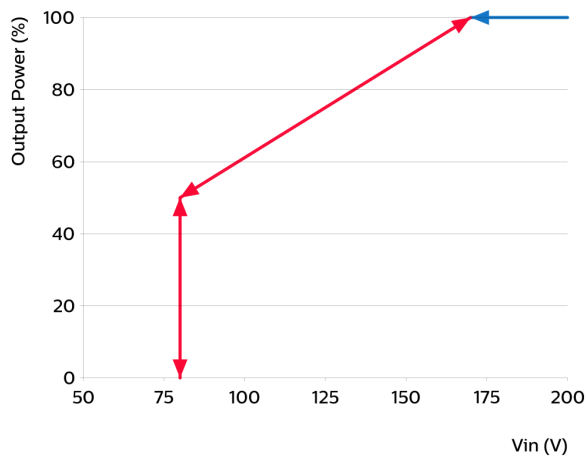


Type	Output current (mA)	Min. output voltage (V)	Max. output voltage (V)	Max. output power (W)
Xitanium 150W 0.70A 1-10V 230V S240 sXt	700	100	214	149.8
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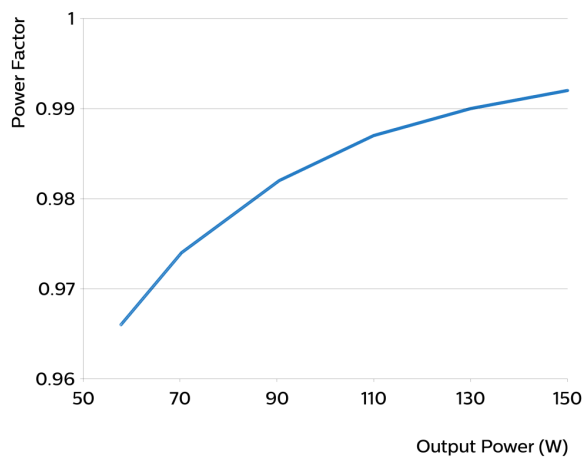
Thermal Guard



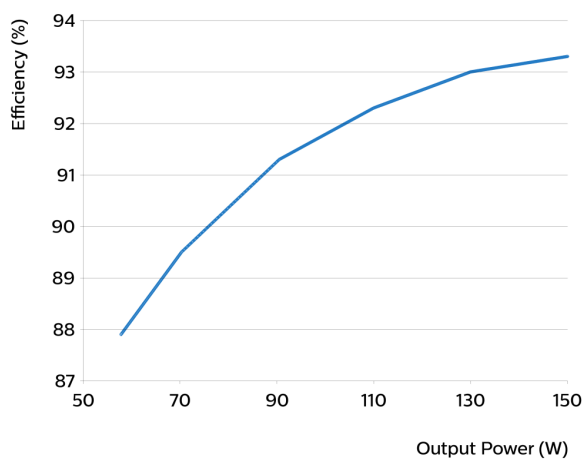
Mains Guard



Power factor versus output power



Efficiency versus output power



THD versus output power

