

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium 200W 0.7A 230V I230

9290 028 03180

Xitanium LED-based light sources are an excellent solution for outdoor environment. 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. The new Philips Xitanium Fixed Output LED Outdoor Drivers are specifically designed to deliver reliable performance and protection while meeting the strict performance, approbation and application requirements.

Benefits

- Ultimate robustness and reliability secure the lowest luminaires maintenance overtime
- Long lifetime and high survival rate thanks to superior thermal management
- Consistent waterproof performance throughout the lifecycle
- Easy to design-in, based on extra EMI margin for independent use
- Backed by 5 year warranty from a company you can trust

Features

- Proven robustness and reliable electronics driver design
- Achieving highest efficiencies based on advanced technology
- Extremely long lifetime, fitting with harsh outdoor applications
- Suitable for Class I isolated luminaires
- Authorized certificates: KC / TIS / CE / CB

Application

- Road and street lighting
- Area and flood lighting
- Tunnel lighting
- High-bay lighting

Electrical Input Data

Specification item	Value	Unit	Condition
Rated Input Voltage Rnge	220...240	V _{ac}	Performance range
Rated input frequency range	50...60	Hz	Performance range
Rated Input Current	0.9	A	@ rated output power @ rated input voltage
Maximum Input Current	1.03	A	@ rated output power @ minimum performance input voltage
Rated Input Power	216	W	@ rated output power @ rated input voltage
Power Factor	0.95		@ rated output power @ rated input voltage
Total Harmonic Distortion	10	%	@ rated output power @ rated input voltage
Efficiency	93	%	@rated output power @rated input voltage @max. Uout
Input voltage AC range	202...254	V _{ac}	Operational range
Input frequency AC range	47...63	Hz	Operational range
Isolation input to output	Basic		

Electrical Output Data

Specification item	Value	Unit	Condition
Regulation Method	Constant Current		
Output Voltage	142...285	V _{dc}	
Output Voltage Max	500	V	Maximum output voltage (rms)
Output Current	0.7	A	
Output Current Tolerance	± 5	%	
Output Current Ripple LF	≤ 5	%	Ripple = peak/average, <3kHz
Output P _{st} ^{LM}	≤ 0.10		In entire operating window
Output SVM	≤ 0.09		In entire operating window
Output Power	≤ 200	W	

Electrical Data Control Input

Specification item	Value	Unit	Condition
Control Method			
Fixed current output	Basic		acc. IEC61347-1

Logistical Data

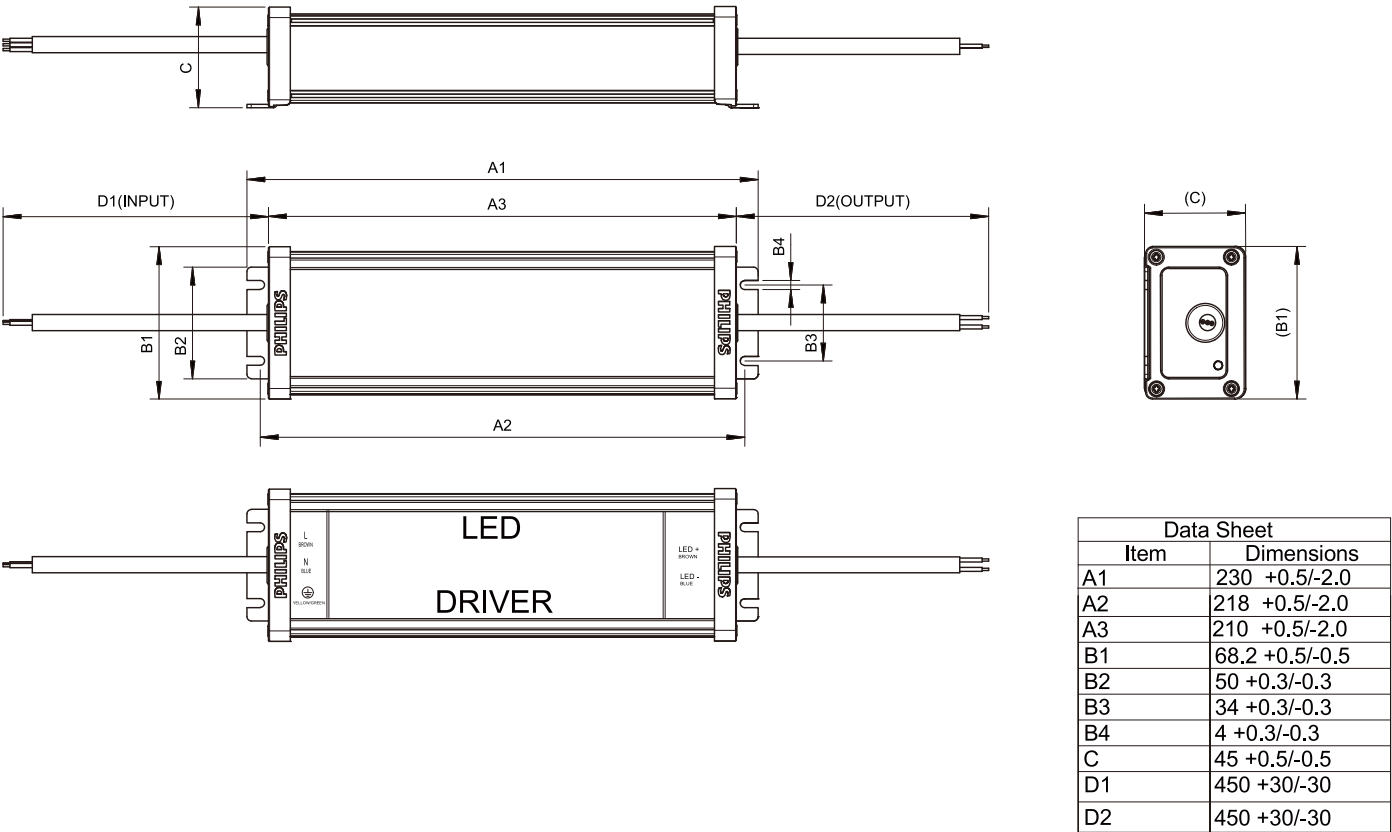
Specification item	Value
Product Name	Xitanium 200W 0.7A 230V I230
Logistics Code 12NC	9290 028 03180
Pieces per Box	10

Wiring & Connections

Specification item	Value	Unit	Condition
Input Wire Cross-section	3 x 1.0	mm ²	Waterproof cable
Output Wire Cross-section	3 x 1.0	mm ²	Waterproof cable

Dimensions

Specification item	Value	Unit	Condition
Length overall	230	mm	
Width overall	68.2	mm	
Height overall	45	mm	
Mounting Holes Distance	218	mm	
Mounting Holes Width	34	mm	
Mounting Holes Size	4	mm	



Operational Temperature and Humidity

Specification item	Value	Unit	Condition
Ambient Temperature	-40...+50	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded
Starting Ambient temperature	-40...+50	°C	
Tcase-max	85	°C	Maximum temperature measured at Tcase-point
Tcase-life	85	°C	Measured at Tcase-point
Maximum housing temperature	90	°C	In case of a failure, inherent by design
Relative humidity	10...90	%	Non-condensing

Lifetime

Specification item	Value	Unit	Condition
Driver Lifetime	50,000	Hours	Measured temperature at Tcase-point is Tcase-life. Maximum failures = 10%

Storage Temperature and Humidity

Specification item	Value	Unit	Condition
Ambient Temperature	-25...+80	°C	
Relative Humidity	5...95	%	Non-condensing

Programmable features

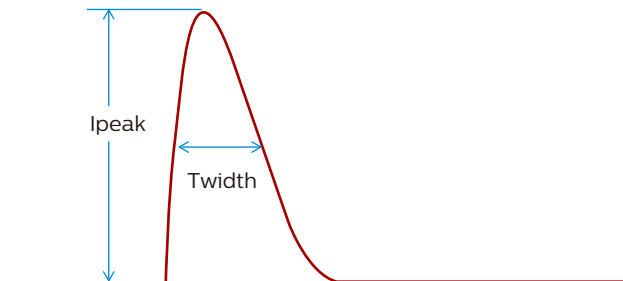
Specification item	Available	Default setting	Condition
Fixed Current Output		700 mA	

Features

Specification item	Value	Remark	Condition
Open Load Protection	Yes		Automatic Recovery
Short Circuit Protection	Yes		Automatic Recovery
Over Power Protection	Yes		Automatic Recovery
Hot Wiring	No		
Suitable for Fixtures with Protection Class	I		per IEC60598
Over Temperature Protection Driver	Yes		Tc cut-off = 85°C; automatic recovering

Inrush current

Specification item	Value	Unit	Condition
Inrush Current I _{peak}	88.5	A	Input voltage V
Inrush Current T _{width}	220	μs	Input voltage V, measured at 50% I _{peak}
Drivers per MCB 16A Type B	≤5	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)	0.6	mA peak	Acc. IEC61347-1. LED module contribution not included

Surge immunity

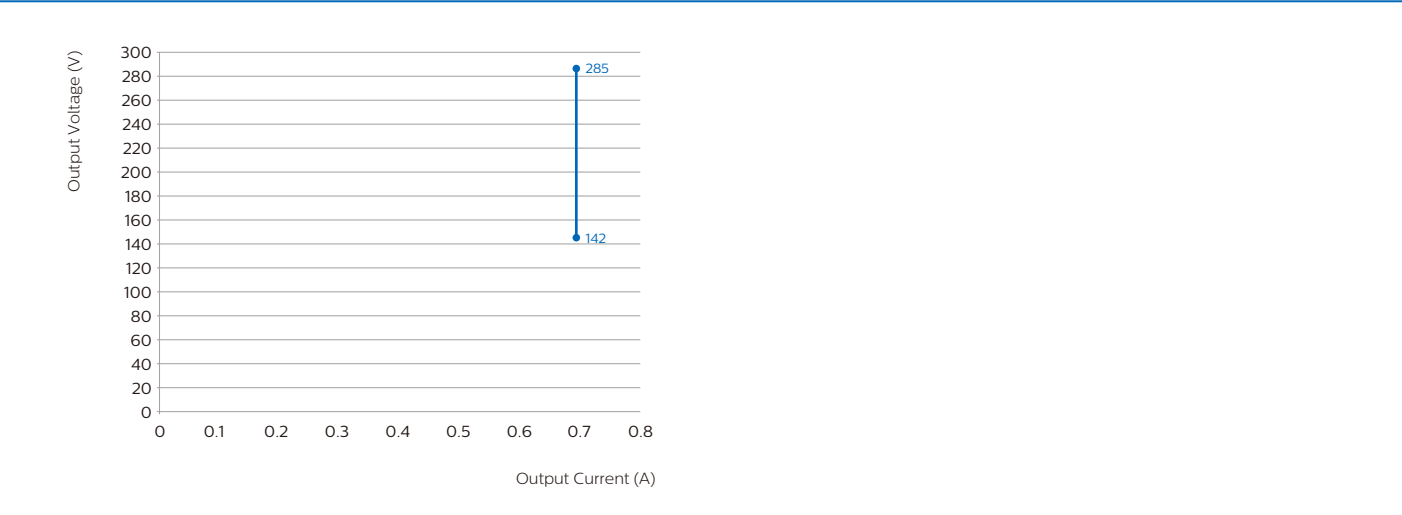
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	6	KV	L-N, acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	10	KV	L/N - GND acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Application Info

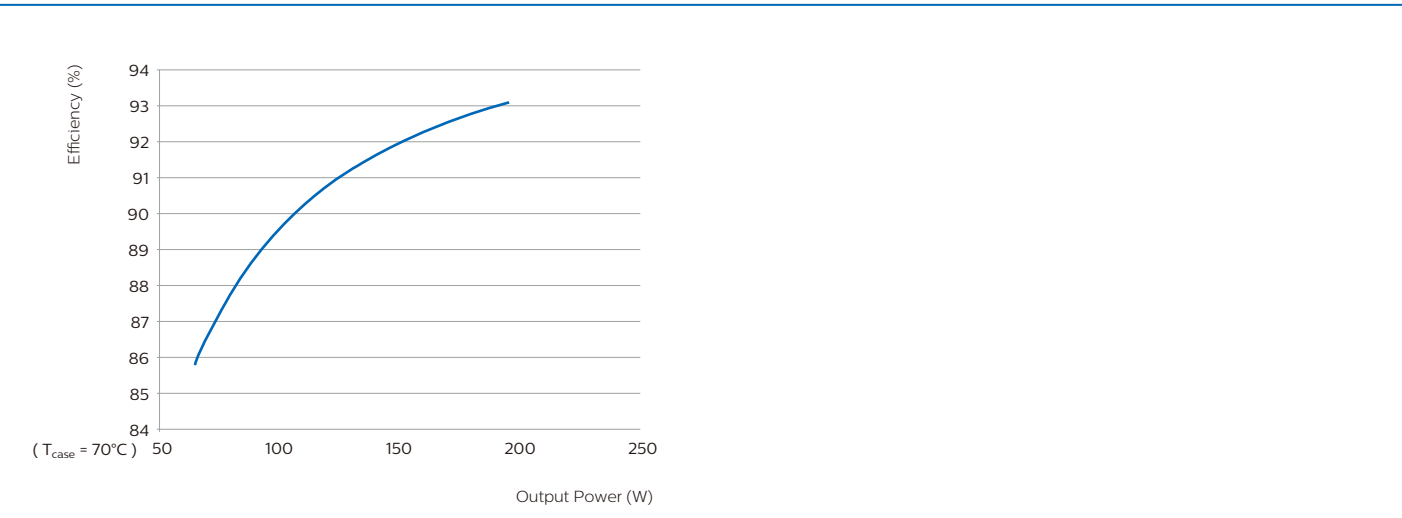
Specification item	Value
Approval Marks	CE / CB / KC / TIS
Ingress Protection classification (IP)	67

Graphs

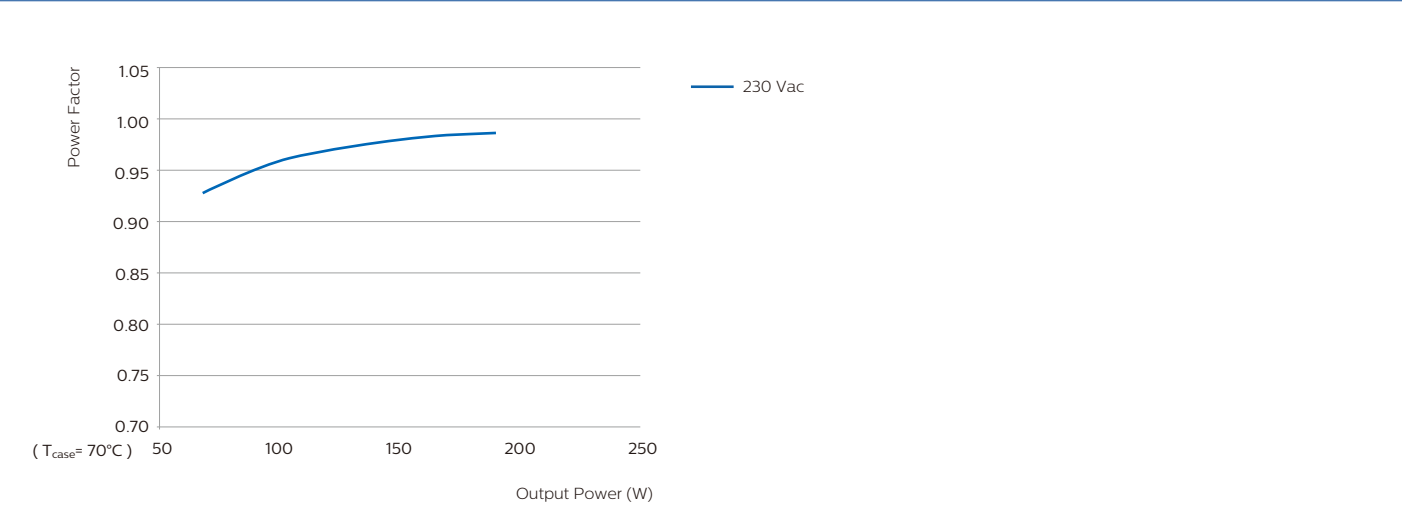
Operating window



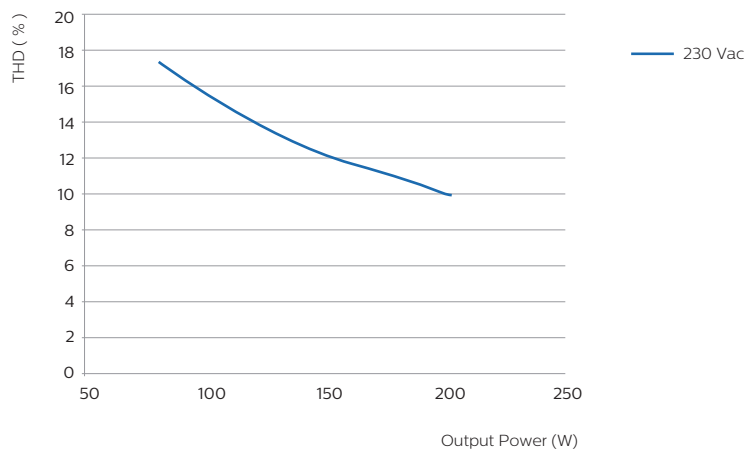
Efficiency versus output power



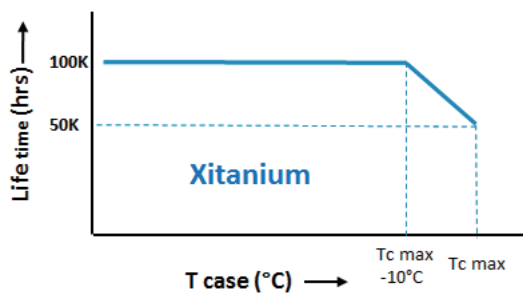
Power factor versus output power



Total Harmonic Distortion (Tcase = 70°C)



Lifetime vs Tcase



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