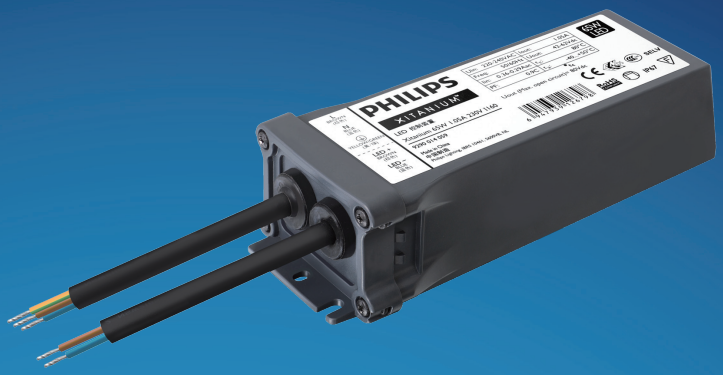
PHILIPS

Xitanium

LED driver



Datasheet

Xitanium Outdoor LED Drivers Single Current Independent

Xitanium 40W 0.7A TWE I160

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 and Dimmable (1-10V) 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
- Compliance with IEC and UL standards, suitable for various markets
- 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: UL / CSA / CE / CCC / ENEC / CB

Application

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

June 2017

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	110...277	V_{ac}	
Rated input voltage	230	V_{ac}	
Rated input frequency range	47...63	Hz	Performance range
Rated input current	0.22	A	@ full load
Max. input current	0.42	A	@ minimum input voltage AC
Rated input power	45	W	@ full load
Power factor	> 0.95		@ full load
	> 0.92		@ 70% load
Total harmonic distortion	⩽ 15	%	@ full load
Efficiency	> 90	%	@ 220 Vac input full load
Input voltage AC range	99...305	V_{ac}	Performance range
Isolation input to output	SELV		

Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	35...57	V_{dc}	
Output voltage max.	80	V	Peak voltage at open load
Output current	0.7	A	Full output current setting
Output current tolerance	± 5	%	
Output current ripple LF	⩽ 30	%	Ripple = peak/average
Output current ripple HF	⩽ 30	%	
Output power	24.5...40	W	Full output

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	Fixed		
Galvanic Isolation	NA		

Logistical data

Specification item	Value
Product name	Xitanium 40W 0.7A TWE I160
Logistic code 12NC	9290 014 08780
Pieces per box	20

Wiring & Connections

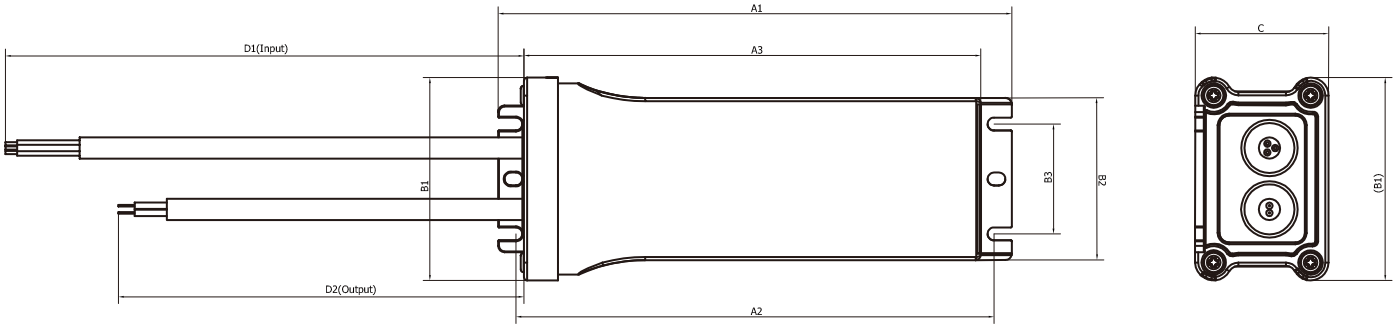
Specification item	Value	Unit	Condition
Input Wire Size	1.04	mm^2	3-wire cable; AWG17
Output Wire Size	1.04	mm^2	2-wire cable; AWG17
Input Wire Length	350 ± 30	mm	Out of enclosure and not including connector length
Output Wire Length	300 ± 30	mm	Out of enclosure and not including connector length

Insulation

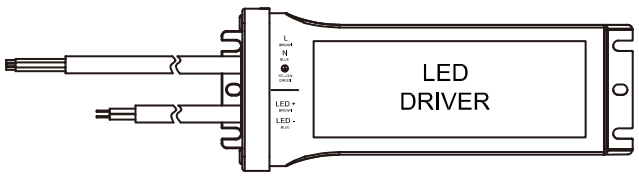
Insulation	Mains	LED output	Housing
Mains		SELV	Basic
LED output	SELV		Basic
Housing	Basic	Basic	

Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	160	mm	
Width (B1)	63	mm	
Height (C)	41.3	mm	
Fixing hole diameter (D1)	4.5	mm	
Fixing hole distance (A2)	148	mm	
Weight	480	gram	



Top View



Top View

Data Sheet	
Item	Dimensions
A1	159 +0/-2.5
A2	148 +0.5/-2
A3	142 +0.5/-2
B1	62.8 +0.3/-1.0
B2	50.2 +0.3/-0.3
B3	34 +0.3/-0.3
C	41.3 +0.5/-0.5
D1	350 +30/-30
D2	300 +30/-30

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-cut off	85	°C	Power to LEDs is reduced
Maximum housing temperature	90	°C	In case of a failure
Relative humidity	10...90	%	Non-condensing

Storage temperature and humidity

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

Lifetime

Specification item	Value	Unit	Condition
Driver lifetime	50,000	hours	Measured temperature at T_{case}-point is T_{case}-max. Maximum failures = 10%

Programmable features

Specification item	Value	Remark	Condition
Set output current (AOC)	No	See Design-in guide.	Default output current: = 700 mA

Features

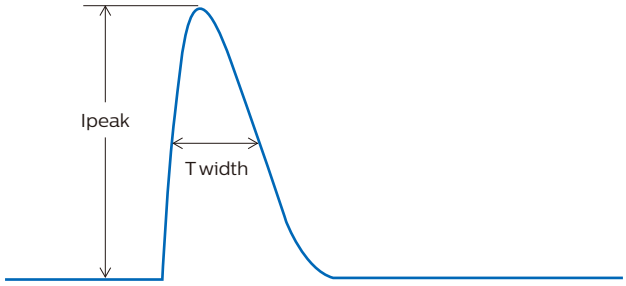
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I		per IEC60598
Over temperature protection driver	Yes		Automatic recovering

Certificates and standards

Specification item	Value
Approval marks	UL / CSA / CE / ENEC / CB / CCC
Ingress Protection classification	IP66 / 67

Inrush current

Specification item	Value	Unit	Condition
Inrush Current I_{peak}	32	A	Input voltage 230V
Inrush Current T_{width}	5	µs	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A Type B	⩽ 23	pcs	



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

Driver touch current / protective conductor current

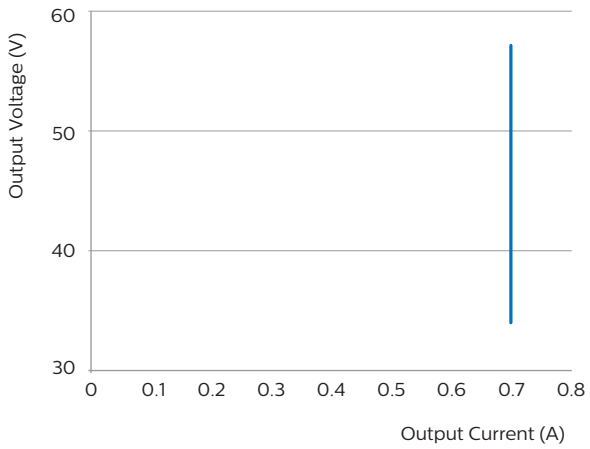
Specification item	Value	Unit	Condition
Typical touch current (ins. Class II)	< 0.7	mA peak	LED module contribution not included

Surge immunity

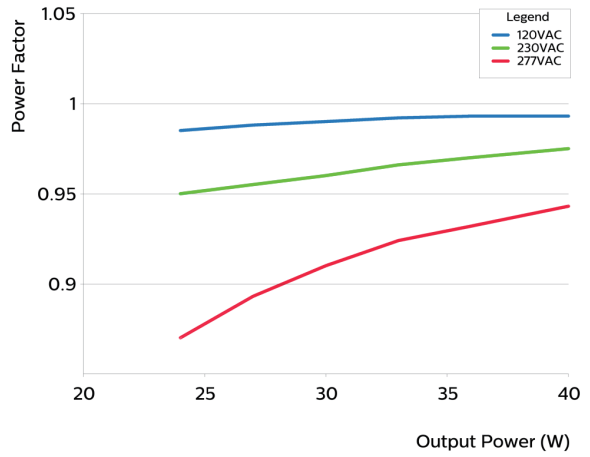
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	4	kV	Acc. IEC61000-4-5 & ANSI C62.41, 2Ohm
Mains surge immunity (comm. mode)	4	kV	Acc. IEC61000-4-5 & ANSI C62.41, 2Ohm

Graphs

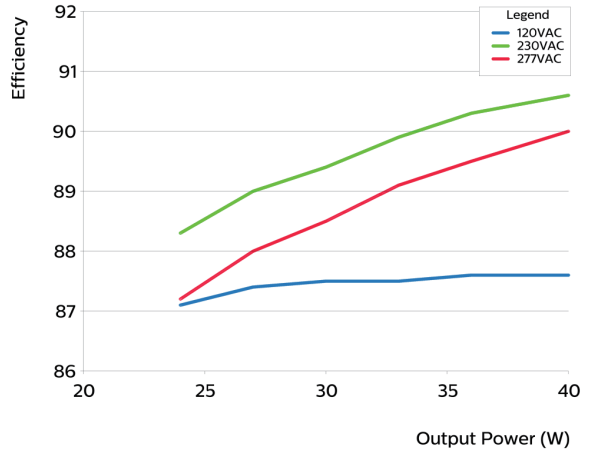
Operating window



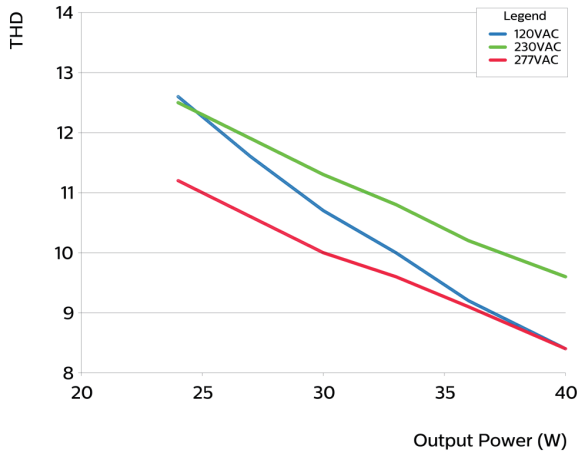
Power factor versus output power



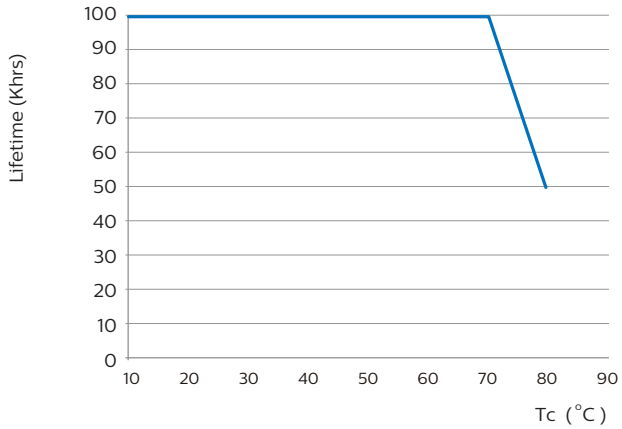
Efficiency versus output power



THD versus output power



Lifetime vs Tcase



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