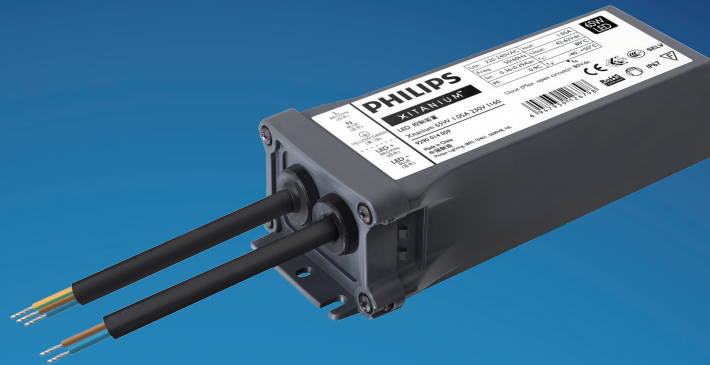


# PHILIPS

## Xitanium

### LED driver



## Datasheet

# Xitanium Outdoor LED Drivers Single Current Independent Xitanium 40W 1.05A TWE I160

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. The Philips Xitanium Fixed Output LED Outdoor Drivers are specifically designed to deliver reliable performance and protection while meeting strict performance, approbation and application requirements.

### Benefits

- Robust design; capable of withstanding harsh outdoor conditions
- Long lifetime and high survival rate
- Superior thermal management suitable for outdoor application
- Component integration in advanced IC enables cost effective design
- Proven robustness & reliability secure the lowest luminaire maintenance over time

### Features

- Proven robustness and reliable electronics driver design
- Achieving highest efficiencies based on advanced technology
- Long lifetime warranty @ Tc max.
- Extreme compact size, fitting with varied and critical luminaires

### Application

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

## Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	110...277	V <sub>ac</sub>	
Rated input voltage	230	V <sub>ac</sub>	
Rated input frequency range	47...63	Hz	
Rated input current	0.19	A	@ rated output power @ rated input voltage
Max. input current	0.42	A	@ rated output power @ minimum performance input voltage
Rated input power	45	W	@ rated output power @ rated input voltage
Power factor	≥ 0.9		@ rated output power @ rated input voltage
Total harmonic distortion	≤ 15	%	@ rated output power @ rated input voltage
Efficiency	≤ 90	%	@ rated output power @ rated input voltage
Input voltage AC range	99...305	V <sub>ac</sub>	Performance range
Input frequency AC range	45...66	Hz	Operational range
Isolation input to output	SELV		

## Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	23...38	V <sub>dc</sub>	
Output voltage max.	50	V	Peak voltage at open load
Output current	1.05	A	Full output current setting
Output current tolerance	± 5	%	@230V input@full output@Tc=25°C
Output current ripple	≤ 30	%	Ripple = peak/average, full load
Output power	24.5...40	W	

## Electrical data controls input

Specification item	Value	Unit	Condition
Control method	Fixed		
Galvanic Isolation	NA		

## Logistical data

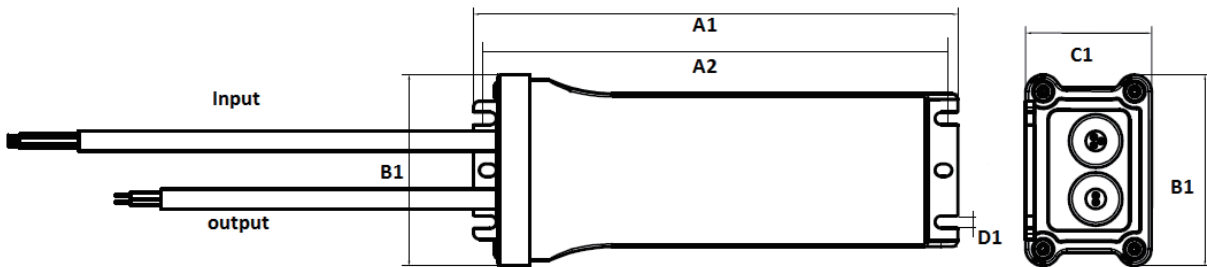
Specification item	Value
Product name	Xitanium 40W 1.05A TWE I160
Logistic code 12NC	9290 014 68380
Pieces per box	20

## Wiring & Connections

Specification item	Value	Unit	Condition
Input Wire Cross-Section	1	mm <sup>2</sup>	3-wire cable
Input Wire Length	350	mm	
Output Wire Cross-Section	1	mm <sup>2</sup>	2-wire cable
Output Wire Length	300	mm	

## Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	160	mm	Typical
Width (B1)	63	mm	Typical
Height (C1)	41.3	mm	Typical
Fixing hole diameter (D1)	4.5	mm	Typical
Fixing hole distance (A2)	148	mm	Typical
Weight	480	gram	Typical



## Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+55	°C	Higher ambient temperature allowed as long as T <sub>case-max</sub> is not exceeded.
Starting Ambient temperature	-40...+55	°C	
T <sub>case-max</sub>	80	°C	Maximum temperature measured at T <sub>case-point</sub>
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	-25...+80	°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: = 1050 mA

## Features

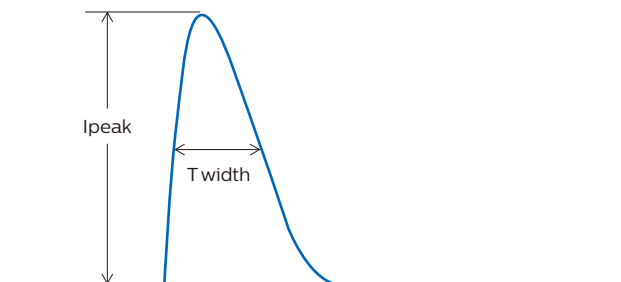
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I		per IEC60598
Over temperature protection driver	Yes		Automatic recovering
Overheating protection	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 $I_{peak}$	34	A	Input voltage 230V
Inrush Current $T_{width}$	58	$\mu s$	Input voltage 230V, measured at 50% $I_{peak}$
Drivers / MCB 16A Type B	$\leq 48$	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

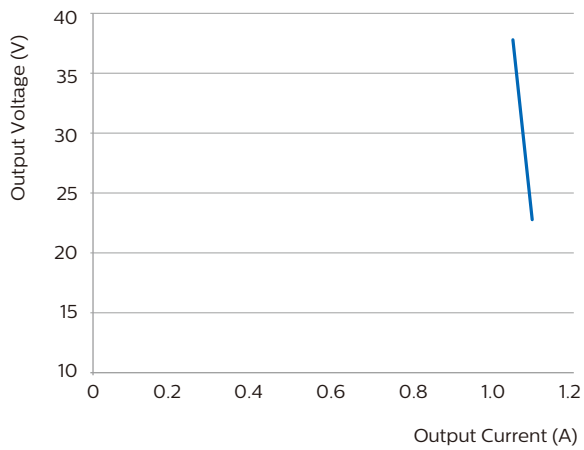
Specification item	Value	Unit	Condition
Typical touch current (ins. Class II)	< 0.7	mA peak	Acc. IEC61347-1. LED module contribution not included

## Surge immunity

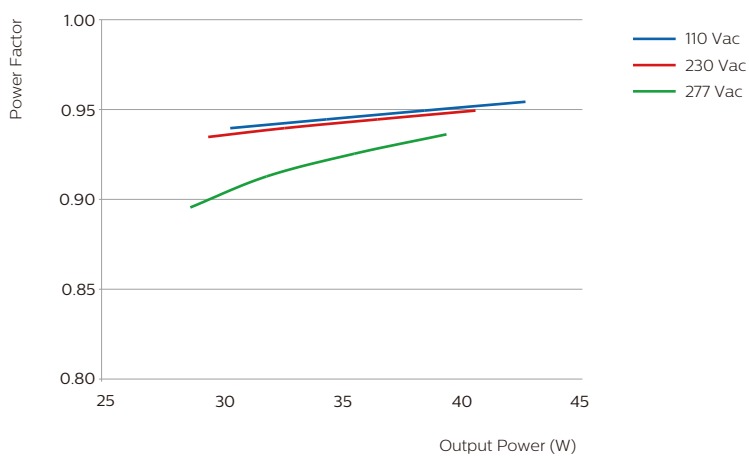
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	4	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	4	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us

## Graphs

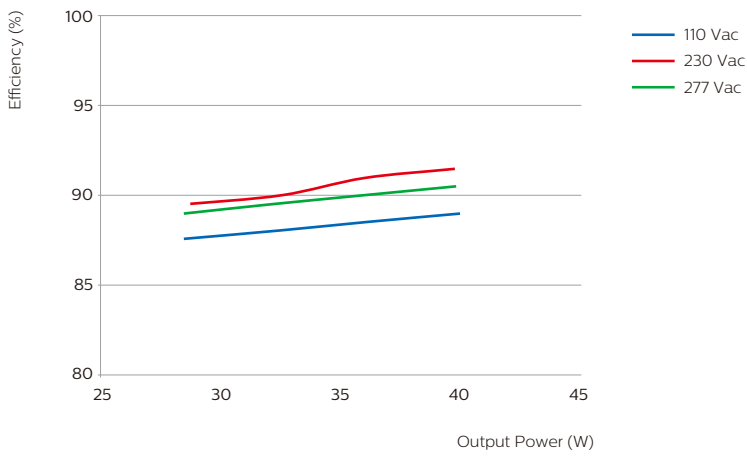
### Operating window



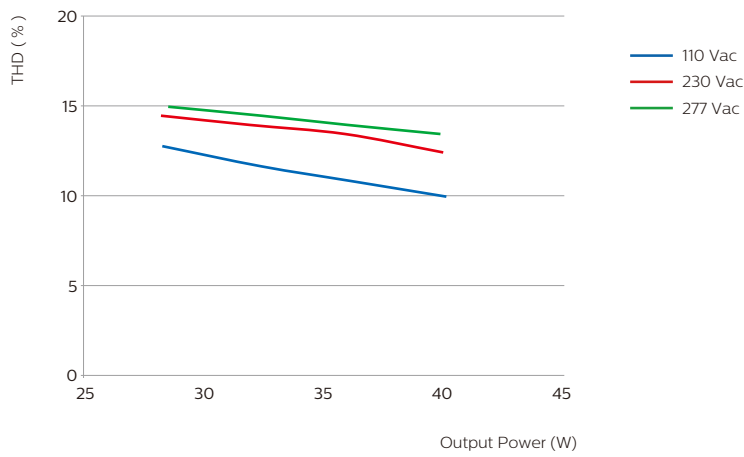
### Power factor versus output power (at T<sub>case-max</sub>)



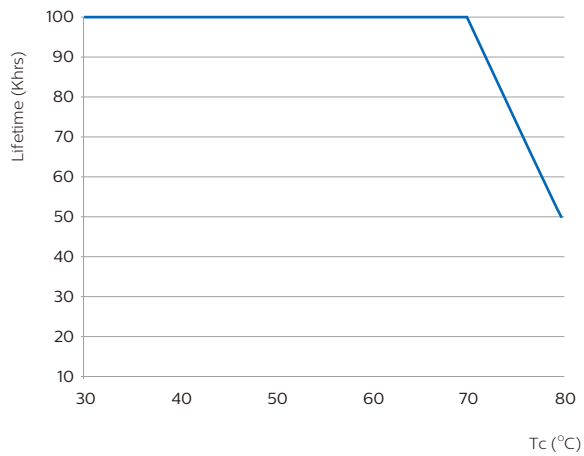
### Efficiency versus output power (at T<sub>case-max</sub>)



### THD versus output power (at T<sub>case-max</sub>)



### Lifetime vs T<sub>case</sub>





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