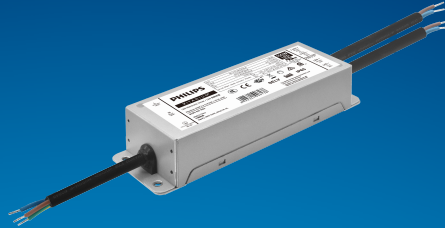


# PHILIPS

## Xitanium

### LED driver



## Datasheet

### Xitanium Outdoor LV LED Drivers AOC 1-10V Independent

Xitanium 65W 0.9-2.2A AOC 1-10 GL I160

9290 028 32680

**Xitanium low-voltage, dimmable and adjustable output current LED Drivers are designed to provide maximum reliability and flexibility to outdoor applications.**

These Drivers can be used in virtually any region of the world. With superior surge protection, these durable, independently housed drivers deliver consistent, high performance to luminaires even after multiple indirect lightning strikes – an ideal solution for OEMs that need a reliable, flexible and adjustable performance in a rugged independent form factor.

#### Benefits

- Wide output flexibility to operate a variety of low voltage LED board designs
- Peace of mind with robust IP rating and high surge protection
- Housing dimensions support seamless replacement of competitor products
- Reliable operation in any region of the world
- Long lifetime warranty

#### Features

- Low voltage/high current output
- 1-10V dimming capability
- Adjustable Output Current (AOC)
- Housing dimensions matching other competition
- Global mains capability
- Robust specifications for moisture, vibration and extreme temperature protection

#### 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 range	110...277	V <sub>ac</sub>	Performance range
Rated input voltage	230	V <sub>ac</sub>	
Rated input frequency range	50...60	Hz	Performance range
Rated input current	0.32	A	@ full load @ rated input voltage
Max. input current	0.67	A	@ full load @ minimum performance input voltage
Rated input power	71.5	W	@ full load @ rated input voltage
Power factor	0.95		@ full load @ rated input voltage
Total harmonic distortion	10	%	@ full load @ rated input voltage
Efficiency	89	%	@ full load @ rated input voltage @ 1.3A&50V
Input voltage AC range	85...305	V <sub>ac</sub>	Safety operational range
Input frequency AC range	47.5...63	Hz	Operational range
Isolation input to output	Double		

## Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	23...50	V <sub>dc</sub>	
Output voltage max.	70	V	Maximum output voltage (rms)
Output current	0.9...2.2	A	
Output current min dimming	130	mA	
Output current tolerance	± 5	%	
Output current ripple LF	≤ 5	%	Ripple = peak / average, < 1kHz
Output current ripple HF	≤ 5	%	Ripple = peak / average, > 1kHz
Output P <sub>st</sub> <sup>LM</sup>	≤ 0.02		In entire operating window
Output SVM	≤ 0.07		In entire operating window
Output power	3...65	W	

## Electrical data controls input

Specification item	Value	Unit	Condition
Control method	1-10V		
Dimming range	10...100	%	Default range
Isolation controls input to output	Basic		acc. IEC61347-1

## Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	1.04 / 17	mm <sup>2</sup> / AWG	3-wire cable, AWG17
Output wire cross-section	1.04 / 17	mm <sup>2</sup> / AWG	2-wire cable, AWG17
Control wire cross-section	1.04 / 17	mm <sup>2</sup> / AWG	2-wire cable, AWG17
Maximum cable length	2	m	Total length of wiring including LED module, one way

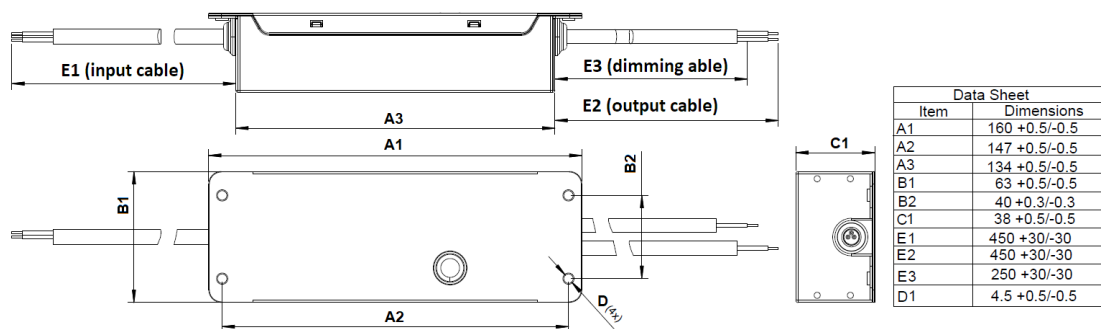
For UL, 1-10V dimming is Class 2 Circuit, Suitable for Class 2 or Class 1 wiring.

## Insulation

Insulation per IEC61347-1	Input	Output	1-10V
Input		Double	Basic
Output	Double		Basic
1-10V	Basic	Basic	

## Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	160	mm	
Mounting hole distance (A2)	147	mm	
Width (B1)	63	mm	
Width (B2)	40	mm	
Height (C1)	38	mm	
Mounting hole diameter (D1)	4.5	mm	
Input cable length (E1)	450	mm	
Output cable length (E2)	450	mm	
Control cable length (E3)	250	mm	
Weight	660	gram	



## Logistical data

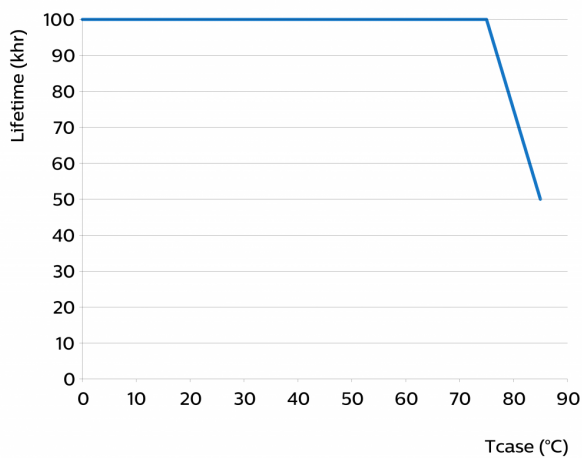
Specification item	Value
Product name	Xitanium 65W 0.9-2.2A AOC 1-10 GL I160
Logistic code 12NC	9290 028 32680
Pieces per box	15

## 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 <sub>case</sub> -point
Tcase-life	75	°C	Measured at T <sub>case</sub> -point
Maximum housing temperature	110	°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-max. Maximum failures = 10%



## Storage temperature and humidity

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

## Programmable features

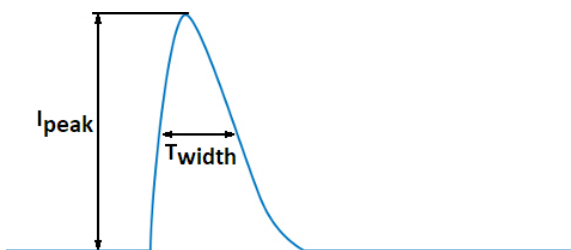
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)		900 mA	

## 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		per IEC60598
Overtemperature protection	Yes		Automatic recovering

## Inrush current

Specification item	Value	Unit	Condition
Inrush current $I_{peak}$	27	A	Input voltage 230V
Inrush current $T_{width}$	300	$\mu s$	Input voltage 230V, measured at 50% $I_{peak}$
Drivers / MCB 16A type B	$\leq 14$	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 Protective Conductor Current (ins. Class I)	2	mA rms	Acc. IEC60598-1. LED module contribution not included
Earth Leakage Current	0.75	mA RMS-MIU	UL 8750
Leakage current of dimming terminals	0.010	mA rms	UL 8750

## Surge immunity

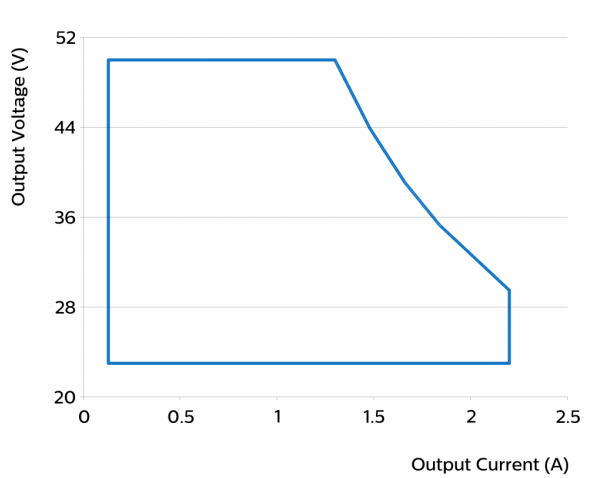
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	6	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	10	kV	Acc. IEC61000-4-5. 12 Ohm 1.2/50us,8/20us
Control surge immunity (comm. mode)	4	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Application Info

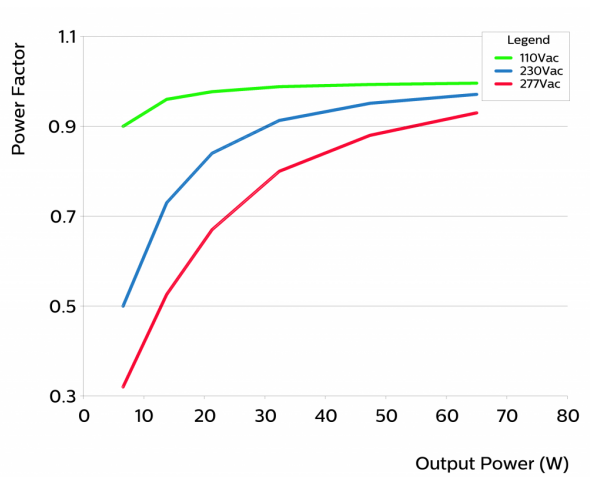
Specification item	Value
Approval marks	CB / CCC / CE / ENEC / FCC / RCM / UL Recognized US & Can
Ingress Protection classification (IP)	65

Graphs

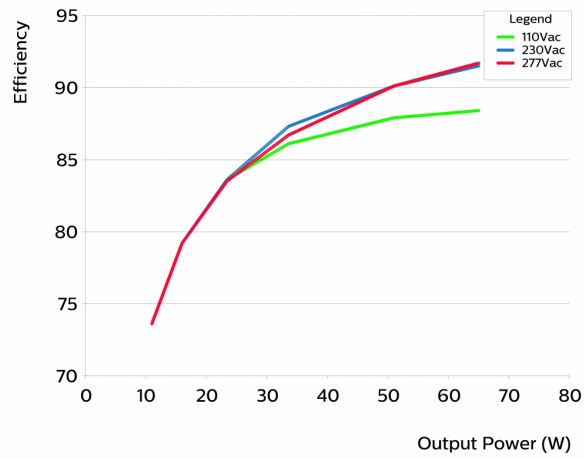
Operating window



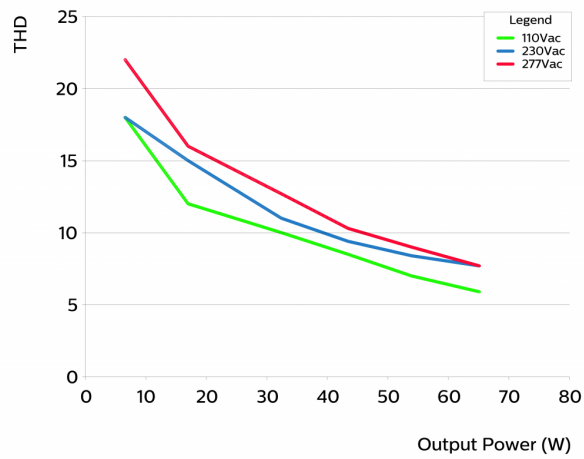
Power factor versus output power



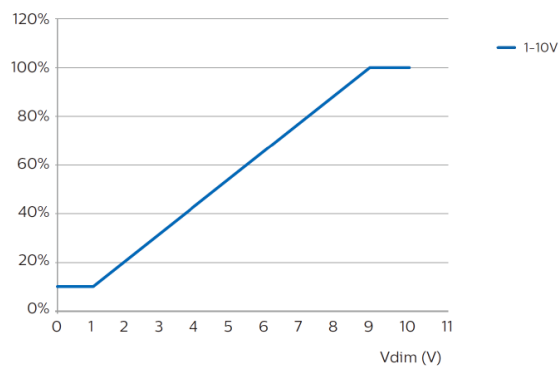
## Efficiency versus output power



## THD versus output power



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





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