PHILIPS

Xitanium

LED driver

Datasheet

Xitanium LED drivers - linear HV non-isolated - Sensor Ready

Xitanium 100W 0.15-0.5A 300V SR 230V iXt

Simplifying connectivity solutions with sensors and controls

Philips Sensor Ready drivers are ideal for use with sensors and building management systems. With its integrated power supply based on DALI 2.0 it is easy to power sensors and wireless modules directly from the driver. It also features integrated energy metering for use in building management systems from the SR Certified partner program. This program with key building management and sensor vendors ensures that certified sensors and controllers work seamlessly with the Xitanium SR driver.

Benefits

- Sensor Ready concept, ideal for use with sensors & building management systems
- Integrated power supply over DALI 2.0 to power sensors and wireless radios directly from the driver, open spec for all OEMs, simplifying integration of sensors into the luminaire
- Integrated power metering for use in building management systems from certified partners

Features

- LED specs comparable to TD non-isolated drivers
- ~15V DALI current source power supply, max 0.5 W for sensors and radios
- Highly accurate power metering, accessible over DALI

Application

- office

November 2017

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 range	50…60	Hz	Performance range
Rated input current	0.49	A	@ rated output power @ rated input voltage
Rated input power	107	W	@ rated output power @ rated input voltage
Power factor	≥ 0.9		@ rated output power @ rated input voltage
Total harmonic distortion	≤ 20	%	@ rated output power @ rated input voltage
Efficiency	≥ 94	%	@ rated output power @ rated input voltage
Rated input voltage DC range	186…250	V_{dc}	Performance range
Rated input current DC range	≤ 0.59	A_{dc}	Performance range
Input voltage AC range	202…254	V_{ac}	Operational range
Input frequency AC range	47.5…63	Hz	Operational range
Input voltage DC range	168…275	V_{dc}	Operational range
Standby Power (TD)	0.3	W	
Isolation input to output	No		

Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	100…300	V_{dc}	
Output voltage max.	330	V	Peak voltage at open load
Output current	0.15…0.5	A	Full output current setting
Output current tolerance	± 5	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average
Output current ripple HF	≤ 4	%	
Output power	28…100	W	Full output

Electrical data controls input

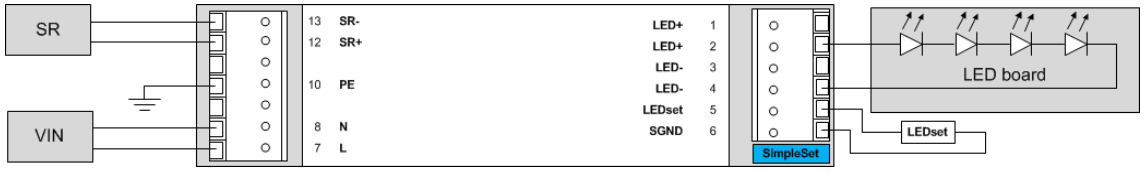
Specification item	Value	Unit	Condition
Control method	SR		
Dimming range	1…100	%	lower-25°C and higher+50°C dimming to be set to 10%
Galvanic Isolation	Double		

Logistical data

Specification item	Value
Product name	Xitanium 100W 0.15-0.5A 300V SR 230V iXt
Order code	871869669926300
Logistic code 12NC	9290 015 40806
Pieces per box	12

Wiring & Connections

Specification item	Value	Unit	Condition
Input wire cross-section	0.5…1.5	mm^2	WAGO744, solid wire
	16…20	AWG	WAGO744, solid wire
Input wire strip length	8…9	mm	
Output wire cross-section	0.5…1.5	mm^2	WAGO744, solid wire
	16…20	AWG	WAGO744, solid wire
Output wire strip length	8…9	mm	
Maximum cable length	2000	mm	Total length of wiring including LED module, one way

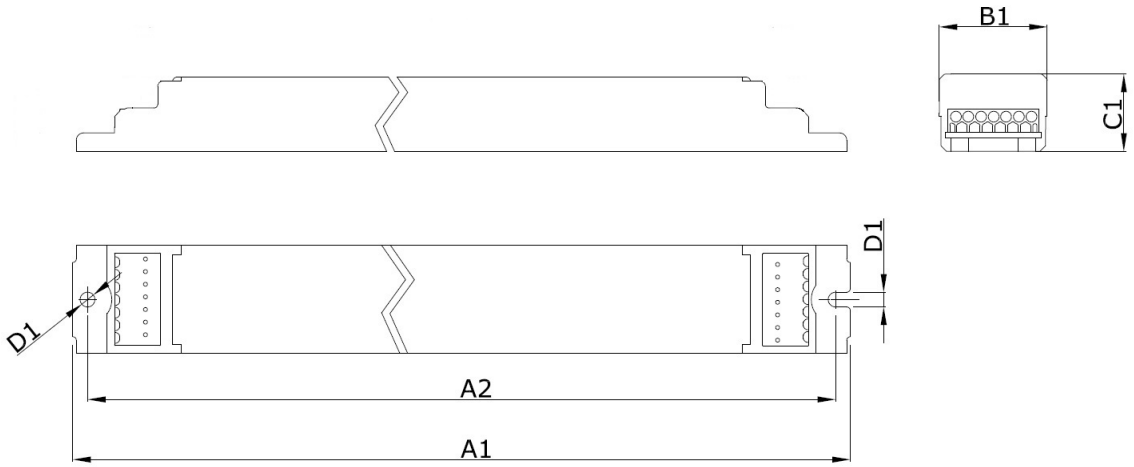


Insulation

Insulation	Input	Output	SR-interface	PE
Input		Non	Double	Basic
Output	Non		Double	Basic
SR-interface	Double	Double		Basic
PE	Basic	Basic	Basic	

Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	425	mm	
Width (B1)	30	mm	
Height (C1)	21	mm	
Fixing hole diameter (D1)	4.1	mm	
Fixing hole distance (A2)	415	mm	
Weight	284	gram	



Operational temperatures and humidity

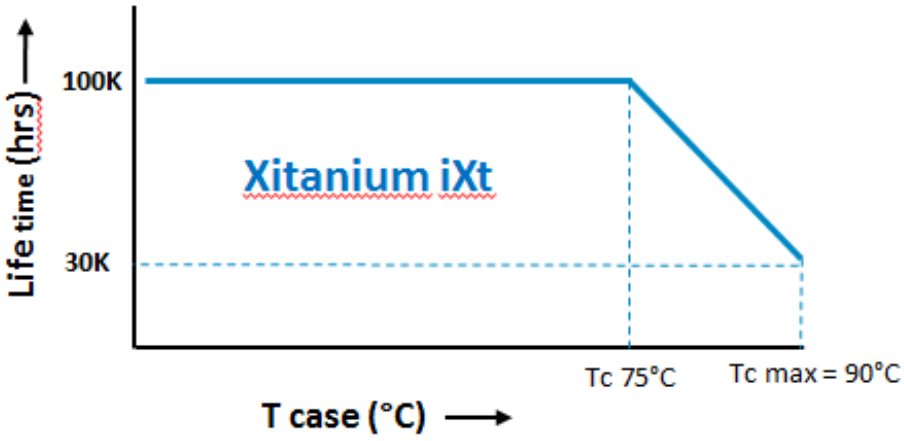
Specification item	Value	Unit	Condition
Ambient temperature	-30…+60	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded.
Tcase-max	90	°C	lifetime 30khrs;
Tcase-life	75	°C	lifetime 100khrs; Measured at T_c-point
Maximum housing temperature	110	°C	In case of a failure
Relative humidity	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	100,000	hours	Measured temperature at T_{case}-point is T_{case}-life. Maximum failures = 10%
Mains switching cycles	> 100,000	switches	See Design-in guide for detailed explanation



Programmable features

Specification item	Value	Remark	Condition
Set output current (AOC)		See Design-in guide.	Default output current: = 150 mA
LED module temperature derating (MTP)	No		
Constant Lumen Over Lifetime (CLO)	Yes		
DC emergency dimming (DCemDIM)	Yes		Current output decreased to 15%
Corridor mode	No		
Energy metering	Yes		Accuracy = 4%
Diagnostics	Yes		

Features

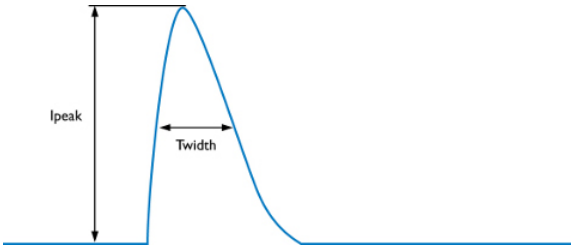
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I		per IEC60598

Certificates and standards

Specification item	Value
Approval marks	
Ingress Protection classification	20

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	4.5	A	Input voltage 230V
Inrush current T_{width}	1000	µs	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 18	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

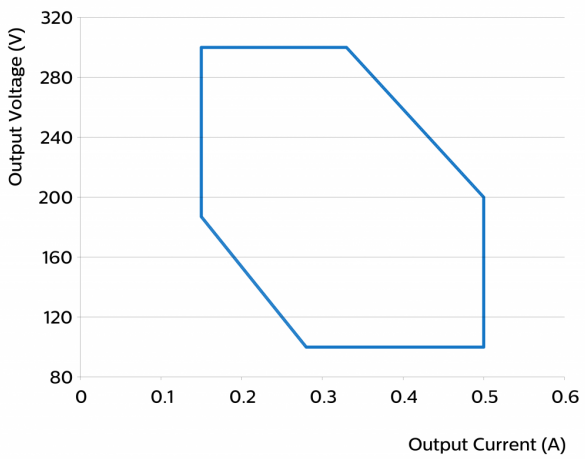
Specification item	Value	Unit	Condition
Typical touch current (ins. Class II)	< 0.5	mA peak	Acc. IEC61347-1. LED module contribution not included

Surge immunity

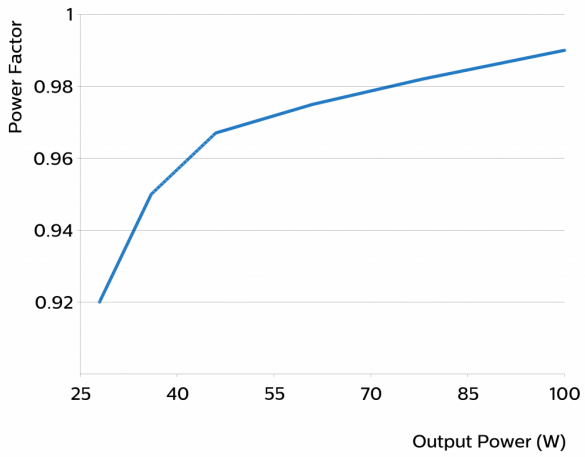
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	2	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	4	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Graphs

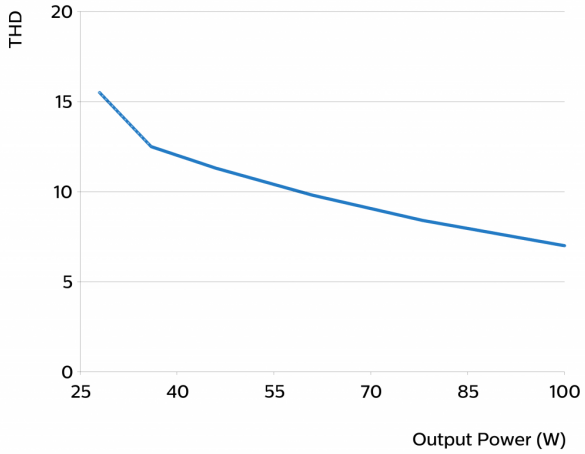
Operating window



Power factor versus output power



THD versus output power



Notes

Standby Power: typical 0.3W, max 0.5W (No load on SR), max 1W (250mW load on SR).

This product includes software licensed under terms that require Philips Lighting Holding B.V. to display the following notice:

ASF: Release ASF-3.32
The Atmel® Software Framework (ASF, www.atmel.com/asf) is a compilation of embedded software for Atmel flash MCUs: megaAVR® , AVR XMEGA® , AVR UC3 and SAM devices. It has been designed to help develop and glue together the different components of a software design. It can easily integrate into an operating system (OS) or run as a stand-alone product.
Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of Atmel may not be used to endorse or promote products derived from this software without specific prior written permission.
4. This software may only be redistributed and used in connection with an Atmel microcontroller product.
THIS SOFTWARE IS PROVIDED BY ATMEL "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT ARE EXPRESSLY AND SPECIFICALLY DISCLAIMED. IN NO EVENT SHALL ATMEL BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE
GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Date of release: November 1, 2017 v2

www.philips.com/technology