

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium non-iso iXt SR dimmable & programmable

Xitanium 150W 0.2-0.7A 300V SR 230V iXt

9290 016 95806

Because light is all around us, the lighting infrastructure is an ideal platform for collecting and carrying information.

The Philips Xitanium SR drivers are sensor ready, making them perfect for use in building management systems. You can power and interface with sensors directly from the driver without the need for additional modules, devices or power packs. The versatile and scalable DALI-2 open standard digital interface is used via a simple 2-wire connection to the sensor, so that you can confidently design flexible lighting, and incorporate your preferred sensors and networks, without worrying about potential incompatibilities.

Benefits

- Sensor Ready concept, ideal for use with indoor sensors & building management systems
- Integrated power supply over DALI-2 to power sensors and wireless radios directly from the driver, open spec for all OEMs, simplifying integration of sensors into the luminaire
- Highly accurate integrated power metering for use in building management systems
- Certified per DIIA intra-luminaire standard D4i
- Suitable for central emergency DC operation
- Industry specifications: longer lifetime, wider ambient temperature range, high surge immunity (CM/DM)

Features

- Integrated Bus Power Supply for sensors and radios (DALI part 250)
- SimpleSet configuration interface (NFC)
- Configurable operating windows (AOC)
- Dimming supported during DC operation (DCemDim)
- Constant Light Output (CLO)
- Adjustable Light Output (ALO)
- OEM Write Protection (OWP)
- Memory Bank 1 Extension / Luminaire Data (DALI part 251)
- Energy reporting (DALI part 252)
- Diagnostics & Maintenance (DALI part 253)

Application

- Industry: warehouses, distribution centers, manufacturing
- Offices
- Healthcare
- Education
- Retail: supermarkets, shopping malls

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	220...240	V _{ac}	Nominal range
Rated input voltage	230	V _{ac}	
Rated input frequency range	50...60	Hz	Nominal range
Rated input current	0.72	A	@ rated output power @ rated input voltage
Rated input power	159	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	95	%	@ rated output power @ rated input voltage
Rated input voltage DC range	186...250	V _{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	0.3	W	
Isolation input to output	No		

Electrical output data

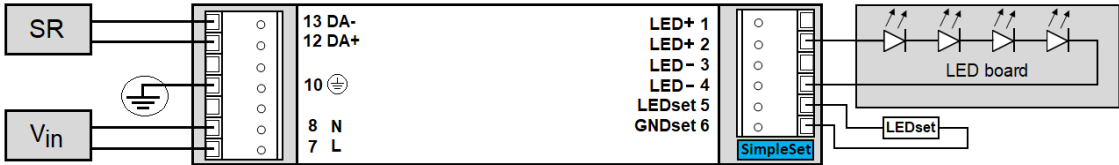
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	100...300	V _{dc}	
Output voltage max.	330	V	Maximum output voltage (rms)
Output current	0.2...0.7	A	
Output current min programmable	200	mA	
Output current min dimming	3.3	mA	
Output current tolerance ±	5	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average, < 3kHz
Output current ripple HF	≤ 4	%	
Output P _{st} ^{LM}	≤ 1		
Output SVM	≤ 0.4		
Output power	43...150	W	

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	SR		DALI Parts: 101, 102, 207, 250, 251, 252, 253
Dimming range	1...100	%	With AOC >200mA 1% dimming possible; AOC <200mA min. physical current = 3.3mA
Isolation controls input to output	Double		acc. IEC61347-1
SR output voltage max.	22.5	V	
SR guaranteed current	52	mA	
SR maximum current	60	mA	

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.5...1.5 / 20...16	mm² / AWG	WAGO744, solid wire
Input wire strip length	8...9	mm	
Output wire cross-section	0.5...1.5 / 20...16	mm² / AWG	WAGO744, solid wire
Output wire strip length	8...9	mm	
Maximum cable length	2	m	Total length of wiring including LED module, one way

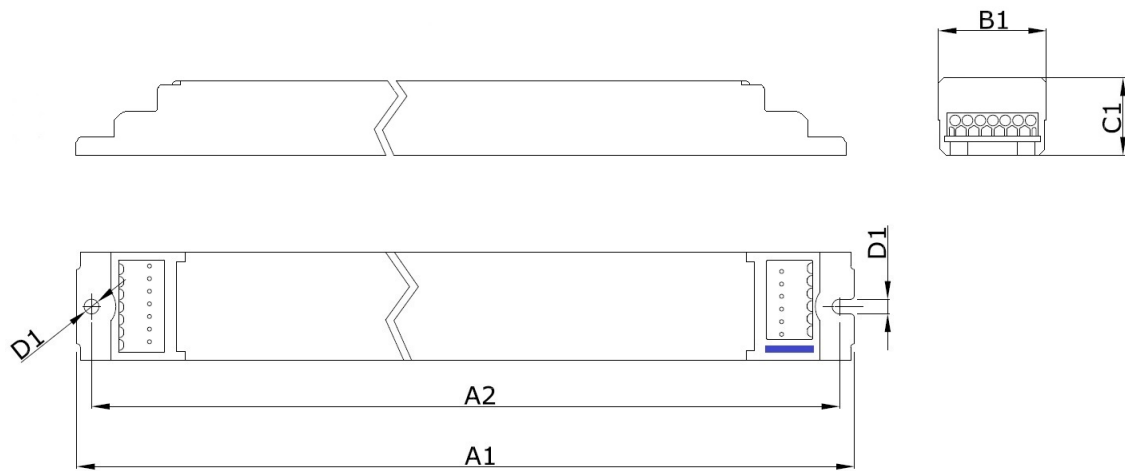


Insulation

Insulation per IEC61347-1	Input	Output	SR-interface	Housing
Input		Non	Double	Basic
Output	Non		Double	Basic
SR-interface	Double	Double		Basic
Housing	Basic	Basic	Basic	

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	425	mm	
Mounting hole distance (A2)	415	mm	
Width (B1)	30	mm	
Height (C1)	21	mm	
Mounting hole diameter (D1)	4.1	mm	
Weight	330	gram	



Logistical data

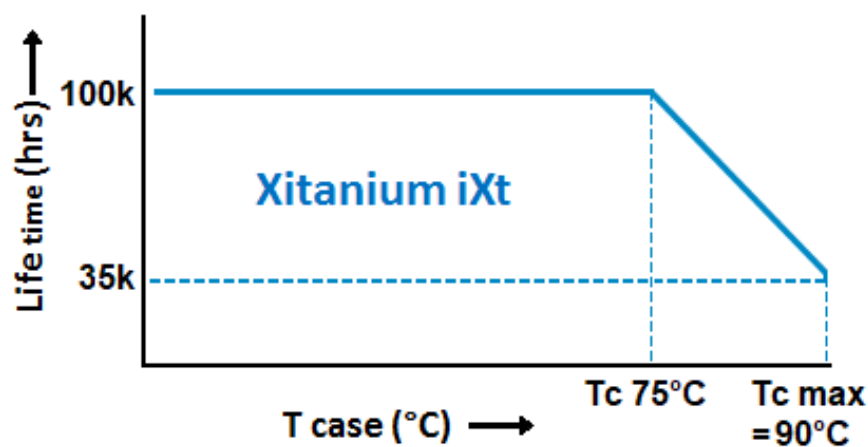
Specification item	Value
Product name	Xitanium 150W 0.2-0.7A 300V SR 230V iXt
EOC	871951426415100
Logistic code 12NC	9290 016 95806
EAN1 (GTIN)	8719514264151
EAN3	8719514264168
Pieces per box	12

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 35khrs;
Tcase-life	75	°C	Lifetime 100khrs; measured at T _c -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	100,000	hours	Measured temperature at Tcase-point is Tcase-life. Maximum failures = 10%
Mains switching cycles	> 100,000	switches	See Design-in guide for detailed explanation



Storage temperature and humidity

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

Programmable features

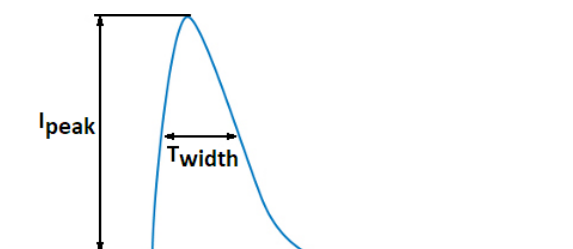
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	LEDset, Programmable, SimpleSet	200 mA	
Driver Temperature Limit (DTL)	Yes	ON	
NTC on LEDset	Yes	OFF	
Adjustable Light Output (ALO)	Yes	OFF	
Constant Light Output (CLO)	Yes	OFF	
DALI 102	Yes	ON	Programmable via SimpleSet
DALI 253 M	Yes	—	
Min Dim Level	Yes	1 %	
DC emergency (DCemDim)	Yes	ON	Default 15%, EOFx range = 1 .. 100% (EOFx = DCemDIM level)
Dimming support at DC operating	Yes	OFF	
OEM Write Protection (OWP)	Yes	OFF	
SR PSU	Yes	ON	
Luminaire Info	Yes	—	

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
Output Overvoltage Detection	Yes		
Energy metering	Yes		Accuracy 4%
Diagnostics	Yes		

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	5.1	A	Input voltage 230V
Inrush current T_{width}	760	μs	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 12	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)	0.5	mA rms	Acc. IEC60598-1. LED module contribution not included

Surge immunity

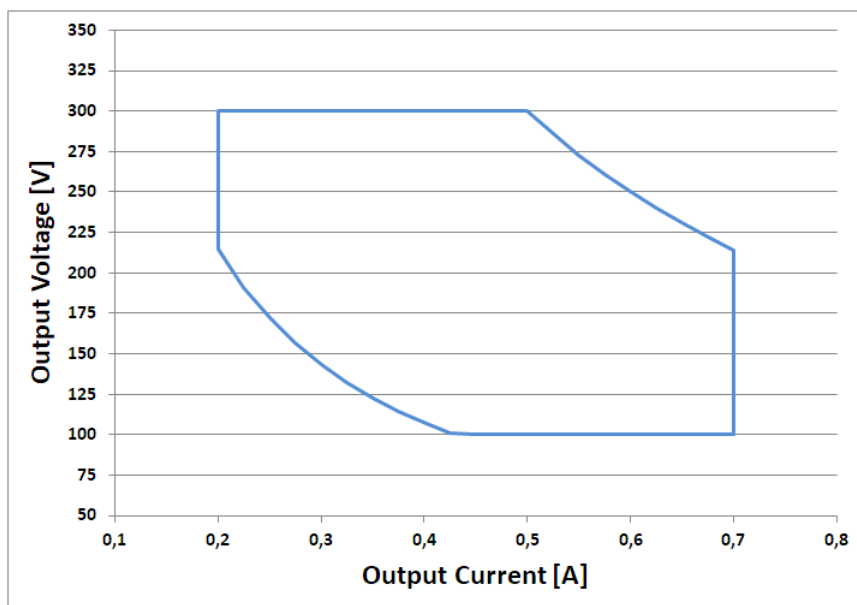
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	2	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	4	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge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

Application Info

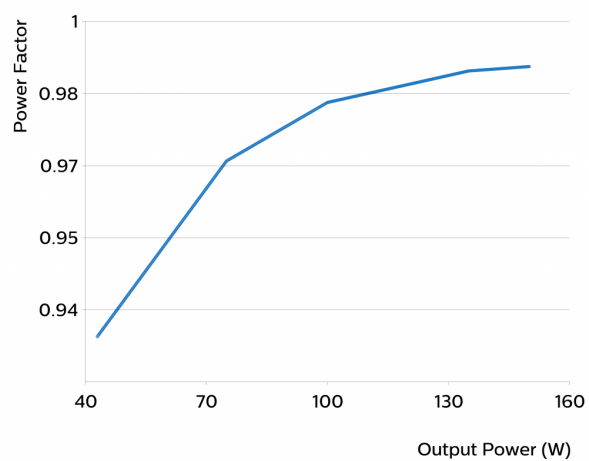
Specification item	Value
Approval marks	CCC / CE / D4i / EAC / EL / ENEC / RCM / SR / UA
Ingress Protection classification (IP)	20
Application	Indoor Linear
Mounting Type	Built-in

Graphs

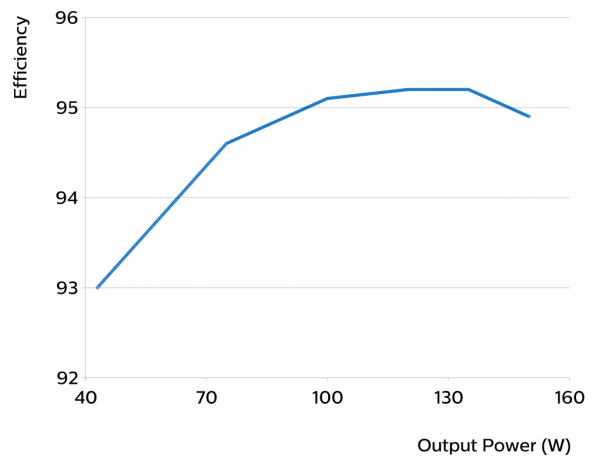
Operating window



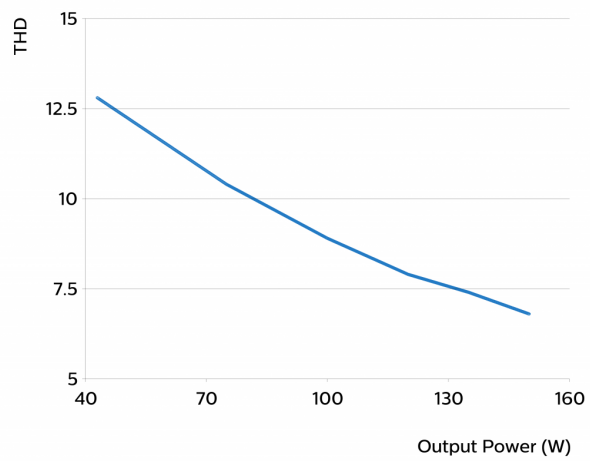
Power factor versus output power



Efficiency 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).

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