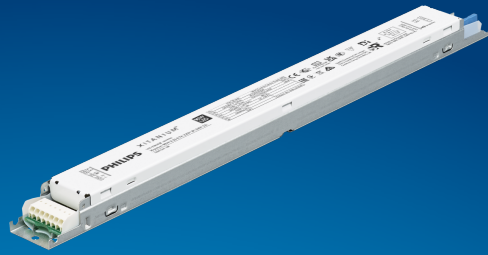


PHILIPS

Xitanium

LED driver



Datasheet

Xitanium non-isolated SR dimmable & programmable

Xitanium 90W 0.25-0.7A 220V SR 230V G2

9290 034 10806

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.

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)

Benefits

- Sensor Ready concept, ideal for use with indoor sensors & building management systems
- Integrated power supply to power sensors and wireless radios directly from the driver
- Communication between the sensor or wireless radio and the driver is according to the DALI-2 standard
- Highly accurate integrated power metering for use in building management systems
- Certified per DIIA intra-luminaire standard D4i
- Suitable for central emergency DC operation

Application

- Offices
- Healthcare
- Education
- Retail: supermarkets, shopping malls

Logistical data

Specification item	Value
Product name	Xitanium 90W 0.25-0.7A 220V SR 230V G2
EOC	871951442995600
Logistic code 12NC	9290 034 10806
EAN1 (GTIN)	8719514429956
Pieces per box	24
Weight	250 gram

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	50...60	Hz	Nominal range
Rated input current	0.44	A	@ rated output power @ rated input voltage
Rated input power	97.0	W	@ rated output power @ rated input voltage
Power factor performance range	≥ 0.99		@ rated output power @ rated input voltage @ rated output power @ rated input voltage
Total harmonic distortion	6	%	@ rated output power @ rated input voltage
Efficiency	93.0	%	@ rated output power @ rated input voltage @ max. U _{out}
Rated input voltage DC	186...250	V _{dc}	Performance range
Rated input current DC	0.52	A _{dc}	Performance range
Input voltage AC	198...264	V _{ac}	Operational range
Input frequency AC	45...66	Hz	Operational range
Input voltage DC	168...275	V _{dc}	Operational range
Standby Power (no load)	0.25	W	
Isolation input to output	No		

Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	50...220	V _{dc}	
Output voltage max.	250	V	Maximum output voltage (rms)
Output current	250...700	mA	
Output current min programmable	250	mA	
Min output current	4	mA	
Output current tolerance ±	5	%	@full load
Output current ripple LF	≤ 4	%	Ripple = peak / average, < 3kHz
Output current ripple HF	≤ 4	%	
Output P _{st} ^{LM}	≤ 0.3		cfr. IEC TR 61547-1:2017
Output SVM	≤ 0.1		cfr. IEC TR 63518:2018
Output power	0.2...90.0	W	
Minimum performance output power	25	W	Power factor > 0.9 and THD < 20%

Control interfaces

Specification item	Value	Unit	Condition
Control method	DALI, SR		DALI Parts: 101, 102, 207, 250, 251, 252, 253. See design-in guide for more controllability details.
Dimming range	1...100	%	With AOC >250mA 1% dimming possible; AOC <250mA min. physical current = 2mA
Isolation controls input to output	SELV		acc. IEC61347-1
SR Power Supply max voltage.	22.5	V	Acc. D4i. See www.digitalilluminationinterface.org/products
SR output current	52	mA	
SR Power Supply max current source	60	mA	

Wiring and Connections

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

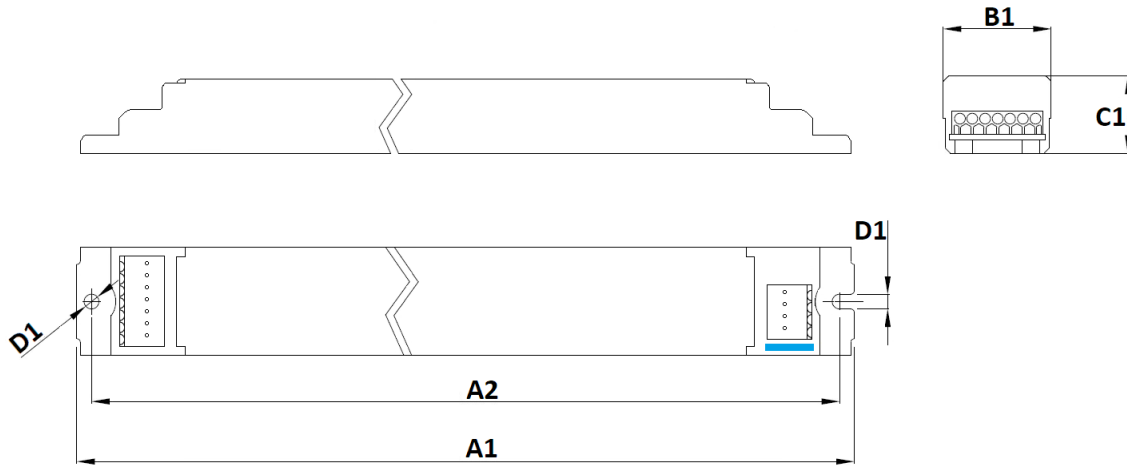


Isolation

Insulation per IEC61347-1	Input	Output	DA-interface	Housing
Input	-	No	SELV	Basic
Output	No	-	SELV	Basic
DA-interface	SELV	SELV	-	Basic
Housing	Basic	Basic	Basic	-

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	360	mm	
Mounting hole distance (A2)	350	mm	
Width (B1)	30	mm	
Height (C1)	21	mm	
Mounting hole diameter (D1)	4.1	mm	
Weight	250	gram	

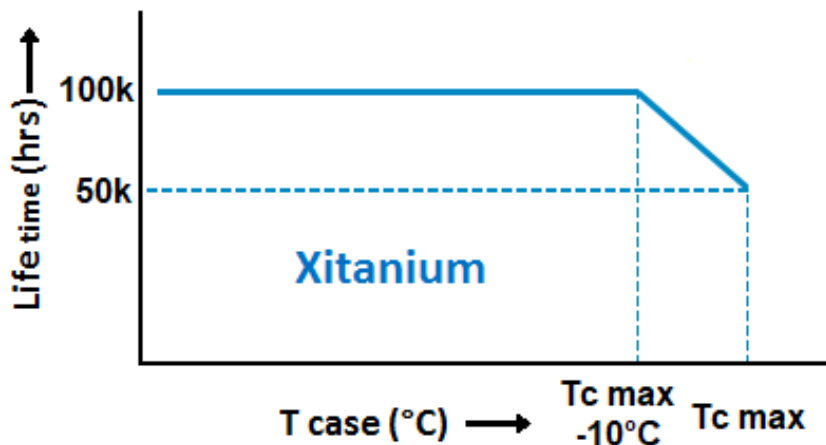


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-25...+50	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded
Tcase-max	80	°C	lifetime 50khrs;
Tcase-life	70	°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



Maximum failures = 10%

Temperature [°C]	Lifetime	Unit	Condition
80	50000	hr	
75	71000	hr	
70	100000	hr	Temperature measured @Tc point
65	>100000	hr	
60	>100000	hr	

Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-25...+85	°C	
Relative humidity	5...95	%	Non-condensing

Programmable features

Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	Programmable, SimpleSet	250 mA	
Adjustable Light Output (ALO)	Yes	OFF	
Adjustable Light Output (ALO) min level	Yes	OFF	
Constant Light Output (CLO)	Yes	OFF	
Min Dim Level	Yes	1 %	
DC emergency (DCemDim)	Yes	ON	Default 15%, EOFx range = 1 .. 100% (EOFx = DCemDIM level)
DALI control supported at DC operation	Yes	OFF	
OEM Write Protection (OWP)	Yes	OFF	
DALI 102	Yes	ON	Programmable via SimpleSet
DALI Power Supply (DALI part 250)	Yes	ON	
Luminaire Info (DALI part 251)	Yes		
Luminaire maintenance (DALI part 253)	Yes		

Non-programmable 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 (DALI part 252)	Yes		Accuracy 4%
Diagnostics (DALI part 253)	Yes		
Diagnostics via Signify tool	Yes		

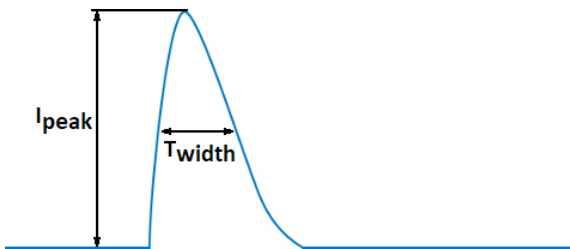
Inrush current

Specification item	Value	Unit	Condition
Inrush current	25	A	Input voltage 230V
Inrush peak width	230	µs	Input voltage 230 V, measured at 50% height
Drivers / MCB 16A type B @230V AC	≤ 20	pcs	Input voltage 230V

Please refer to the driver design in guide if you use other MCB-types.

If several mini circuit breakers are used directly side-by-side (without distance pieces)

a correction factor of 80% has to be applied to the rated current



Driver touch current / protective conductor current / earth leakage 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

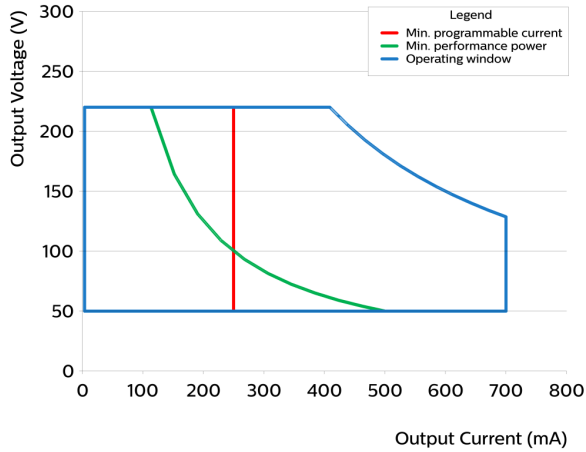
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	0.03	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge immunity (comm. mode)	1	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Application Info (Approbation)

Specification item	Value
Approval marks and Certifications	CCC / CE / D4i / EAC / EL / ENEC / RCM / SR / UA / UKCA / WEEE
Ingress Protection classification (IP)	20
Noise and hum dB(A)	20
Application	Indoor Linear
Mounting Type	Built-in

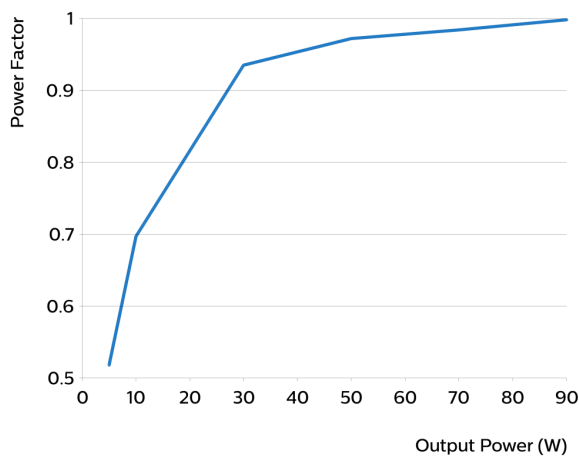
Graphs

Operating window

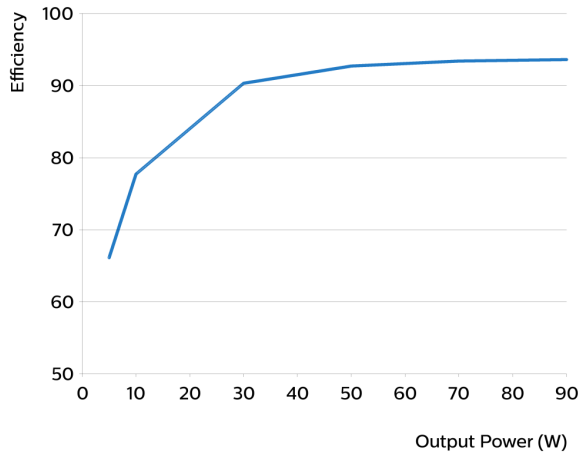


Type	Output current (mA)	Min. output voltage (V)	Max. output voltage (V)	Max. output power (W)
Xitanium 90W 0.25-0.7A 220V SR 230V G2	250	50	220	55
Xitanium 90W 0.25-0.7A 220V SR 230V G2	300	50	220	66
Xitanium 90W 0.25-0.7A 220V SR 230V G2	350	50	220	77
Xitanium 90W 0.25-0.7A 220V SR 230V G2	400	50	220	88
Xitanium 90W 0.25-0.7A 220V SR 230V G2	450	50	200	90
Xitanium 90W 0.25-0.7A 220V SR 230V G2	500	50	180	90
Xitanium 90W 0.25-0.7A 220V SR 230V G2	550	50	163	90
Xitanium 90W 0.25-0.7A 220V SR 230V G2	600	50	150	90
Xitanium 90W 0.25-0.7A 220V SR 230V G2	650	50	138	90
Xitanium 90W 0.25-0.7A 220V SR 230V G2	700	50	128	90

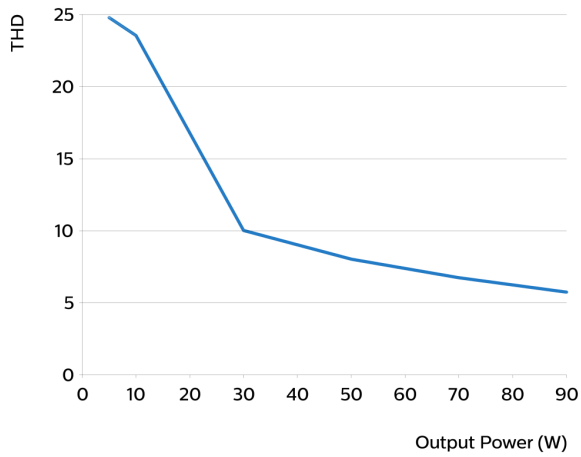
Power factor versus output power



Efficiency versus output power



THD versus output power



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