PHILIPS

Xitanium

LED driver

Datasheet

Xitanium non-isolated SR FlexTune dimmable & programmable

Xitanium 36W 0.08-0.4A 220V SR FlexTune 230V

9290 016 93706

The Philips Xitanium SR FlexTune drivers make it possible to create excellent Tunable White systems without compromising on quality of light.

The unique FlexTune dimming feature ensures flicker-free dimming performance down to 1% over the full CCT range. The drivers can be installed in both wireless SR systems (for example, in combination with EasyAir SNS210 or SNS410) as well as in wired DALI systems and Touch & Dim systems.

NOTE: By factory default the SR bus power supply (SR PSU) is enabled, and ready to be used with an external control device. If installing the driver in a DALI or Touch&Dim system, please make sure to disable the SR PSU on individual driver level before installation in a system.

Benefits

- Excellent dimming and color tuning quality
- Suitable for 3 types of systems: SR (wireless), DALI (wired) and Touch & Dim (push button)
- Flicker-free dimming down to 1% over the full CCT range
- Easy system calibration via MultiOne
- Suitable for installation in emergency lighting systems
- Perfect system match with Fortimo LED Strip FlexTune modules
- Compatible with EasyAir SNS210 and SNS410 sensors (wireless tunable white system)
- Compatible with DALI Device Type 8 (wired tunable white system)

Features

- High efficiency
- Wide operating windows
- Unique FlexTune dimming technology
- ~ 15V DALI current source power supply, max 0.5W for sensors and radios
- DALI-2 and D4i certified
- Adjustable Light Output (ALO)
- Constant Light Output (CLO)
- Corridor Mode (CM)
- Dimming supported during DC operation (DCemDim)
- Touch & Dim (TD)
- OEM Write Protection (OWP)
- Color type Tc (DALI part 209)
- Memory Bank 1 Extension / Luminaire Data (DALI part 251)
- Energy Reporting (DALI part 252)
- Diagnostics & Maintenance (DALI part 253)

Application

- Offices
- Education / schools
- Healthcare / hospitals
- Retail: supermarkets, shopping malls

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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	0.2	A	@ rated output power @ rated input voltage
Rated input power	42	W	@ rated output power @ rated input voltage
Power factor	0.98		@ maximum output power @ rated input voltage
Total harmonic distortion	10	%	@ maximum output power @ rated input voltage
Efficiency	88	%	@ maximum output power @ rated input voltage @ max. Uout
Rated input voltage DC range	186…250	V_{dc}	Performance range
Rated input current DC range	0.23	A_{dc}	Performance range
Input voltage AC range	198…264	V_{ac}	Operational range
Input frequency AC range	45…66	Hz	Operational range
Input voltage DC range	168…275	V_{dc}	Operational range
Standby Power	0.49	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	0.08…0.4	A	
Output current tolerance ±	5	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average, < 3kHz
Output P_{st}^{LM}	≤ 0.18		In performance operating window
Output SVM	≤ 0.07		In performance operating window
Output power	10…36	W	
Number of output channels	2		

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	DALI, SR, Touch & Dim (TD)		For latest DALI certification status please visit www.digitalilluminationinterface.org/products. Please refer to design-in guide at www.philips.com/oem for more controllability details.
Dimming range	1…100	%	> 80mA 1% dimming; < 80 mA min. current 3mA
Isolation controls input to output	SELV		acc. IEC61347-1
SR output voltage max.	22.5	V	
SR guaranteed current	52	mA	
SR maximum current	60	mA	

Wiring and Connections

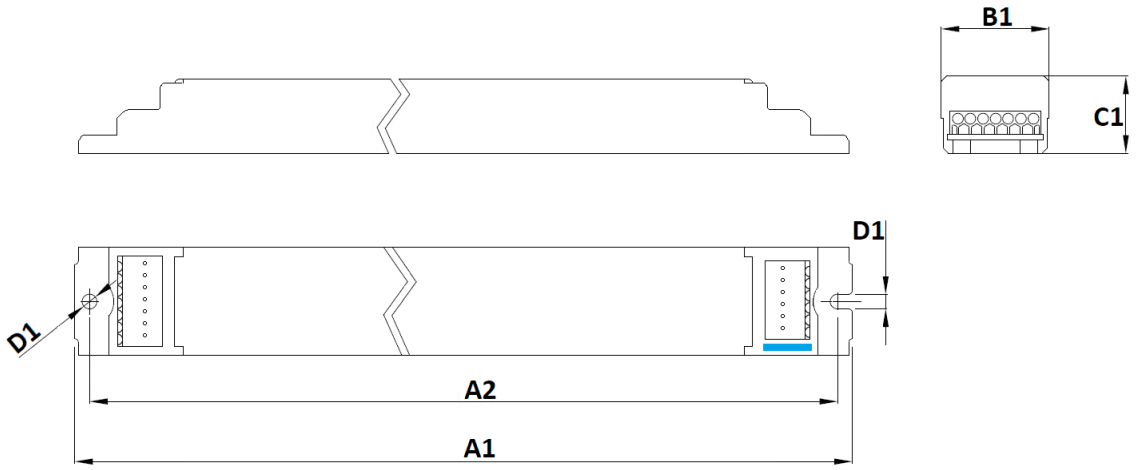
Specification item	Value	Unit	Type
Input wire cross-section	0.5…1.5 / 20…16	mm² / AWG	WAGO744, solid wire
Input wire strip length	8…9	mm	
Output wire cross-section	0.5…1.5 / 20…16	mm² / AWG	WAGO744, solid wire
Output wire strip length	8…9	mm	
Control wire cross-section	0.5…1.5 / 20…16	mm² / AWG	WAGO744, solid wire
Control wire strip length	8…9	mm	
Maximum cable length	0.8	m	Between driver and LED module

Insulation

Insulation per IEC61347-1	Input	Output	SR-Interface	Housing
Input		No	Double	Basic
Output	No		Double	Basic
SR-Interface	Double	Double		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	283	gram	



Logistical data

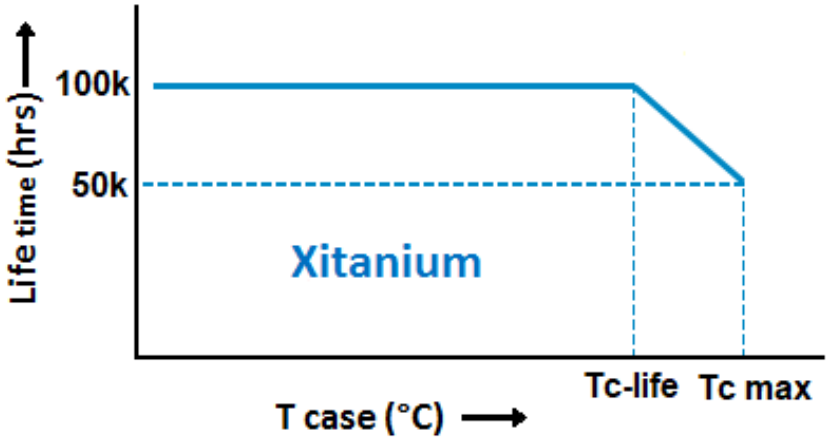
Specification item	Value
Product name	Xitanium 36W 0.08-0.4A 220V SR FlexTune 230V
EOC	871869975307800
Logistic code 12NC	9290 016 93706
EAN1 (GTIN)	8718699753078
EAN3 (box)	8718699753085
Pieces per box	24

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	75	°C	Maximum temperature measured at T_{case}-point
Tcase-life	65	°C	Measured at T_{case}-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%



Storage temperature and humidity

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

Programmable features

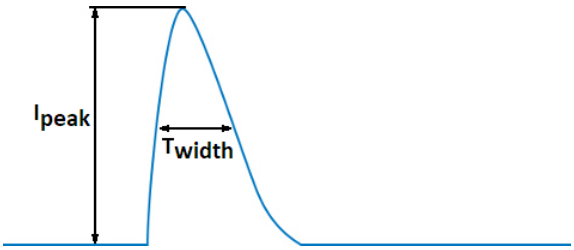
Specification item	Available	Default setting	Condition
Adjustable Light Output (ALO)	Yes	OFF	
Constant Light Output (CLO)	Yes	OFF	
DALI 102	Yes	—	Programmable via SimpleSet
DALI 253 M	Yes	—	
Touch & Dim (TD)	Yes	OFF	SR PSU must be disabled in case Touch & Dim function is used
Corridor Mode	Yes	OFF	Default: T1=55s, T2=32s, T3=30min
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	
SR PSU (DALI part 250)	Yes	ON	Disable SR PSU before mounting drivers in inter-luminaire wired DALI network.
Luminaire Info (DALI part 251)	Yes	—	
FlexTune (DALI part 209)	Yes	80 mA	Set the color CoolWhite & WarmWhite, default power on color setting = 4600k

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	Yes		
Diagnostics (DALI part 253)	Yes		

Inrush current

Specification item	Value	Unit	Condition
Inrush current	15.2	A	Input voltage 230V
Inrush peak width	292	µs	Input voltage 230 V, measured at 50% height
Drivers / MCB 16A type B	≤ 24	pcs	Indicative value



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

Driver touch current / protective conductor current

Specification item	Value	Unit	Condition
Typical Protective Conductor Current (ins. Class I)	0.4	mA rms	Acc. IEC60598-1. LED module contribution not included

Surge immunity

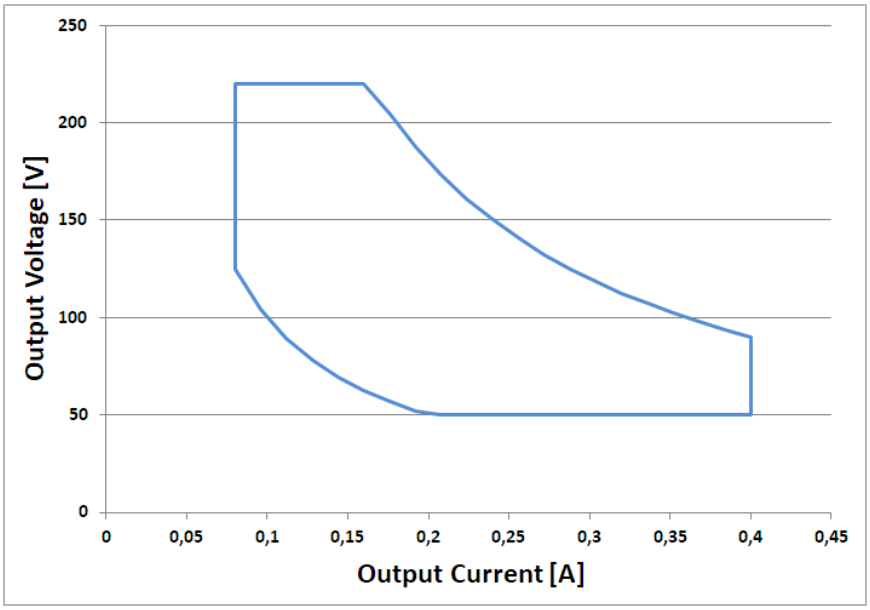
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge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

Application Info

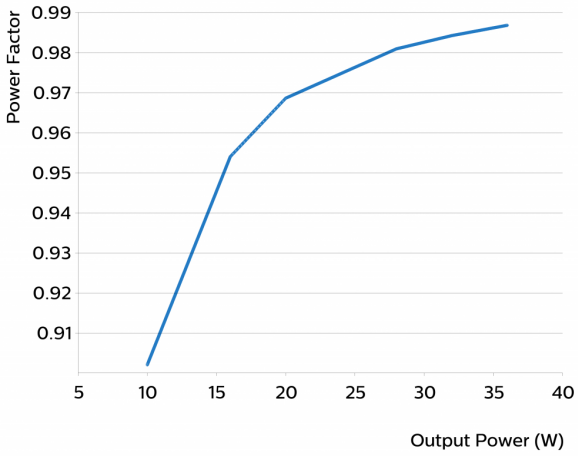
Specification item	Value
Approval marks	CCC / CE / D4i / DALI 2 / EL / ENEC / RCM / SR / WEEE
Ingress Protection classification (IP)	20
Application	Indoor Linear
Mounting Type	Built-in

Graphs

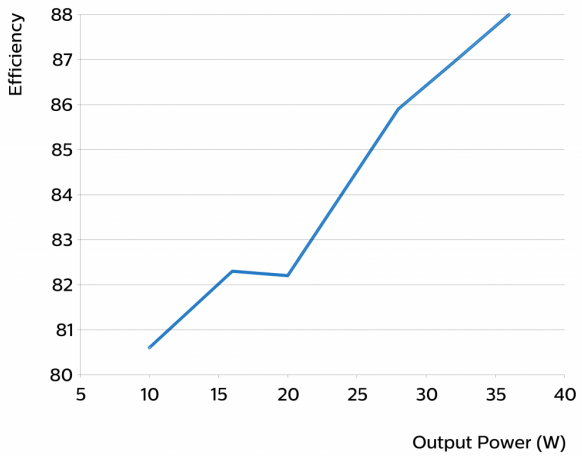
Operating window



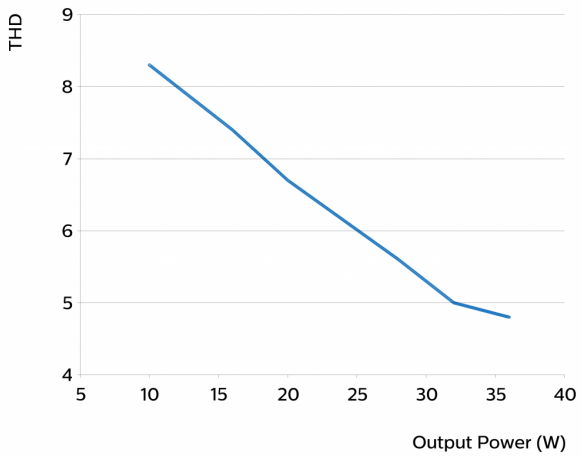
Power factor versus output power



Efficiency versus output power



THD versus output power



Notes

For more information about FlexTune drivers visit the Technical Download site:
Linear non-SELV Drivers >> General information >> FlexTune-Quick-Installation-Guide

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