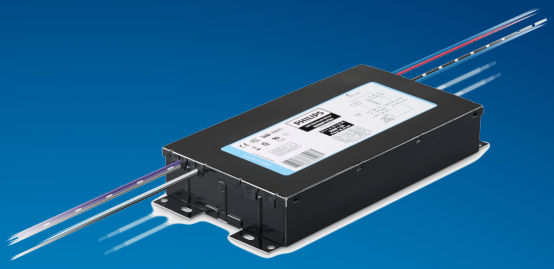
PHILIPS

Xitanium

LED driver



Datasheet

Xitanium Prog/Prog+ LED Xtreme drivers

Xitanium 300W 1.5A Prog+ GL-R sXt

9290 007 12703

Xitanium Prog/Prog+ LED Xtreme drivers

Philips Xitanium Prog/Prog+ Programmable LED drivers are specifically designed to deliver the highest performance, protection and configurability. The portfolio offers both central and standalone dimming protocols further increasing the energy savings and CO2 reductions achieved with LED lighting. The Xtreme technology ensures maximum robustness and protection combined with a very long lifetime.

Benefits

- Ultimate robustness, offering peace of mind and lower maintenance costs
- Fully programmable LED-drivers designed for the new digital and connected lighting world
- Extended diagnostics via MultiOne
- Easy to design-in, configure and install
- Energy savings through high efficiency and via multiple dimming options

Features

- High surge protection (CM/DM)
- Long lifetime and robust protection against moisture, vibration and temperature
- Configurable operating windows (AOC)
- Multiple control interfaces: DALI, 1-10V (Prog+ : also AmpDim)
- Autonomous dimming via integrated DynaDimmer
- Suitable for DC operation
- Thermal protection for driver and for module (MTP)
- Constant Light Output (CLO)
- Adjustable Start-up Time (AST)
- End-Of-Life indicator (EOL)

Application

- Road and street lighting
- Area lighting
- Industrial lighting

August 2021

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	108…305	V_{ac}	Performance range
Rated input voltage	230	V_{ac}	
Rated input frequency range	47…63	Hz	Performance range
Rated input current	1.48	A	@ rated output power @ rated input voltage
Max. input current	3.03	A	@ rated output power @ minimum performance input voltage
Rated input power	330	W	@ rated output power @ rated input voltage
Power factor	0.98		@ rated output power @ rated input voltage
Total harmonic distortion	10	%	@ rated output power @ rated input voltage
Efficiency	93	%	@ rated output power @ 230Vac input voltage @ max. Uout
Rated input voltage DC range	186…250	V_{dc}	Performance range
Rated input current DC range	1.8	A_{dc}	Performance range
Input voltage AC range	108…305	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	0.46	W	
Isolation input to output	Basic		

Electrical output data

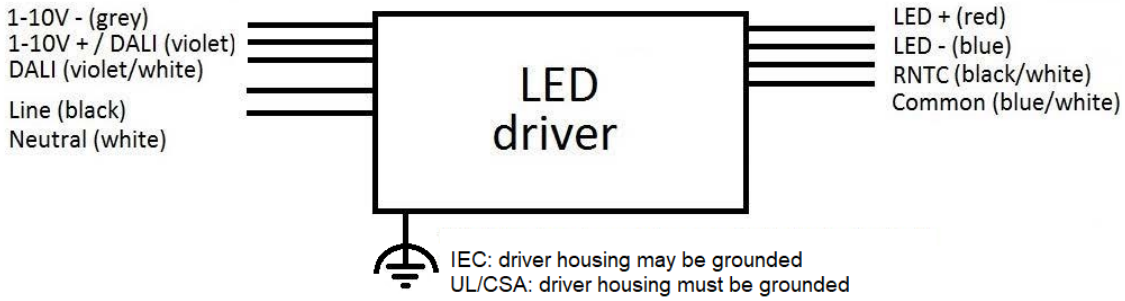
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	80…280	V_{dc}	
Output voltage max.	310	V	Maximum voltage at open load
Output current	0.1…1.5	A	
Output current min programmable	350	mA	
Output current min dimming	100	mA	
Output current tolerance ±	5	%	
Output current ripple LF	≤ 15	%	Ripple = peak / average, < 3kHz
Output current ripple HF	≤ 15	%	
Output power	8…300	W	

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	1-10V, AmpDim, DALI, Dynadimmer		Output current amplitude dimming, 1-10V: 1-8V curve, acc. IEC60929. Please refer to design-in guide at www.philips.com/oem for more controllability details.
Dimming range	10…100	%	For latest DALI certification status please visit www.digitalilluminationinterface.org/products.
Isolation controls input to output	Basic		acc. IEC61347-1

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.82 / 18	mm^2 / AWG	solid wire, double-insulated
Input wire strip length	8...12	mm	
Output wire cross-section	0.82 / 18	mm^2 / AWG	solid wire, double-insulated
Output wire strip length	8...12	mm	
Control wire cross-section	0.82 / 18	mm^2 / AWG	solid wire, double-insulated
Control wire strip length	8...12	mm	
Maximum cable length	10	m	CISPR15: between driver and LED module
Maximum NTC output cable length	0.6	m	

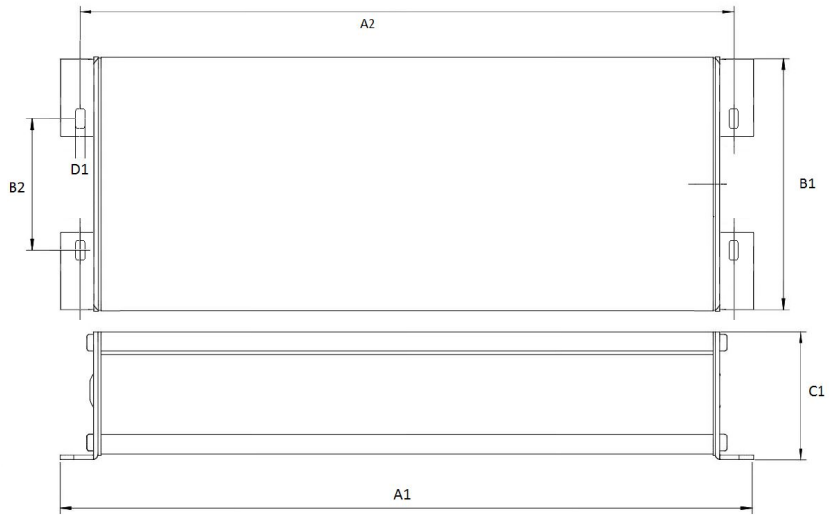


Insulation

Insulation per IEC61347-1	Mains	LED + NTC	DALI/1-10V	Housing
Mains		Basic	Basic	Double
LED + NTC	Basic		Basic	Basic
DALI/1-10V	Basic	Basic		Double
Housing	Double	Basic	Double	

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	240.5	mm	
Mounting hole distance (A2)	225	mm	
Width (B1)	118.3	mm	
Width (B2)	57	mm	
Height (C1)	38.2	mm	
Mounting hole diameter (D1)	4.5	mm	
Weight	1600	gram	



Logistical data

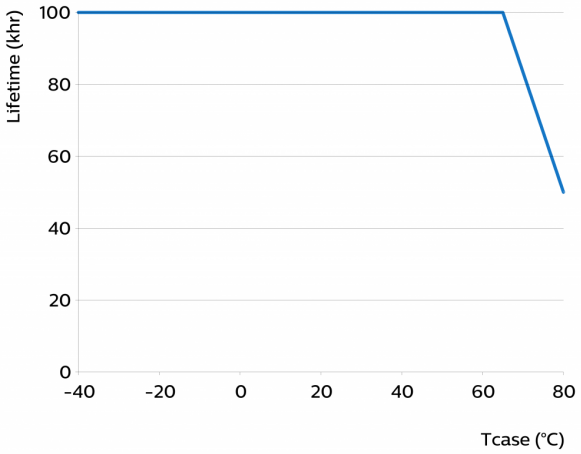
Specification item	Value
Product name	Xitanium 300W 1.5A Prog+ GL-R sXt
EOC	871869643678300
Logistic code 12NC	9290 007 12703
EAN1 (GTIN)	8718696436783
Pieces per box	6

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	80	°C	Maximum temperature measured at T_{case}-point
Tcase-life	65	°C	Measured at T_{case}-point
Maximum housing temperature	100	°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	-40...+80	°C	
Relative humidity	5...95	%	Non-condensing

Programmable features

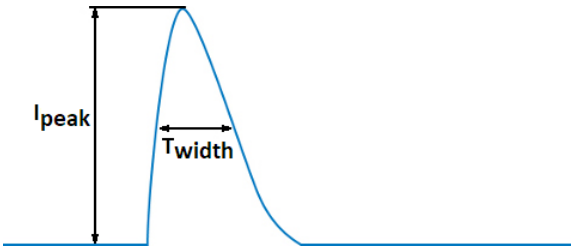
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	Programmable	1000 mA	
LED Module Temperature Protection (MTP)	Yes	ON	
Driver Temperature Limit (DTL)	No		
Adjustable Light Output (ALO)	Yes	OFF	
Constant Light Output (CLO)	Yes	OFF	
Adjustable Start-up Time (AST)	Yes	1 s	
DALI 253 M	No		
1-10V	Yes	ON	
Integrated Dynadimmer	Yes	OFF	5-step, light turn-off possible, Dynadimmer and DALI cannot be used simultaneously.
LineSwitch single-step	No		
AmpDim	Yes	OFF	
Min Dim Level	Yes	6 %	
DC emergency (DCemDim)	No		EOFi = 100%. No external DC rated fuse required.
DALI control supported at DC operation	Yes	ON	
End Of Life indicator (EOL)	Yes	OFF	
OEM Write Protection (OWP)	No		
Luminaire Info (DALI part 251)	No		

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 and II		per IEC60598
Overtemperature protection	Yes		Automatic recovering
Energy metering (DALI part 252)	No		
Diagnostics	Yes		
Diagnostics (DALI part 253)	No		

Inrush current

Specification item	Value	Unit	Condition
Inrush current	170	A	Input voltage 230V
Inrush peak width	220	µs	Input voltage 230 V, measured at 50% height
Drivers / MCB 16A type B	≤ 3	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 Touch Current (ins. Class II)	0.7	mA peak	Acc. IEC61347-1. LED module contribution not included. LED module contribution not included
Typical Protective Conductor Current (ins. Class I)	0.5	mA rms	Acc. IEC60598-1. LED module contribution not included. LED module contribution not included

Surge immunity

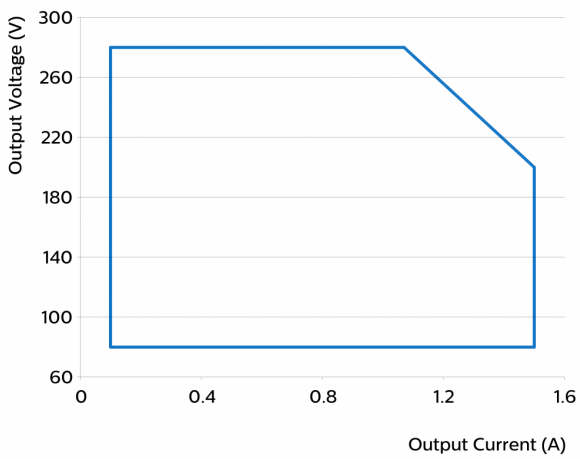
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	4	kV	L-N acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	4	kV	L/N - GND acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	1	kV	DALI - DALI acc. IEC61000-4-5. 2 Ohm, 1.2/50us,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

Application Info

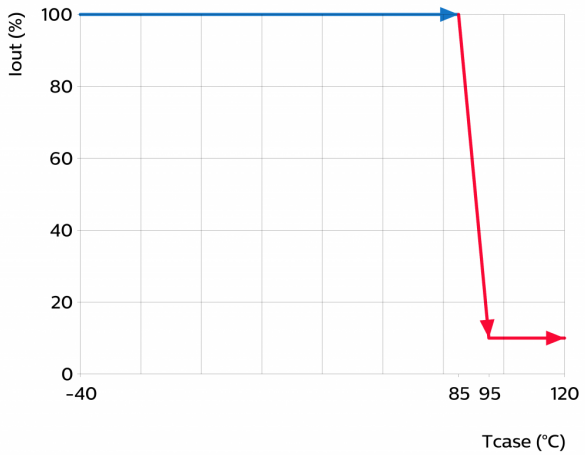
Specification item	Value
Approval marks	CE / DALI 2 / Double-insulated Built-In / EAC / ENEC / Type HL / UA / UL Recognized US & Can / WEEE
Ingress Protection classification (IP)	20
Application	Outdoor
Mounting Type	Built-in

Graphs

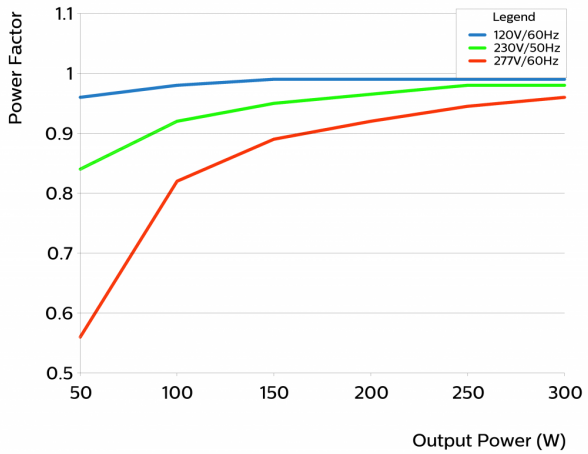
Operating window



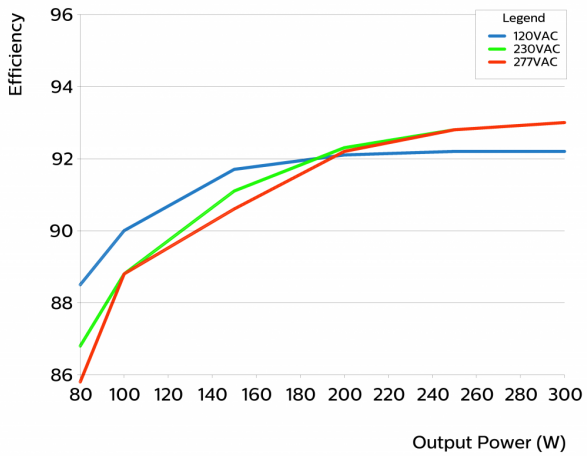
Thermal Guard



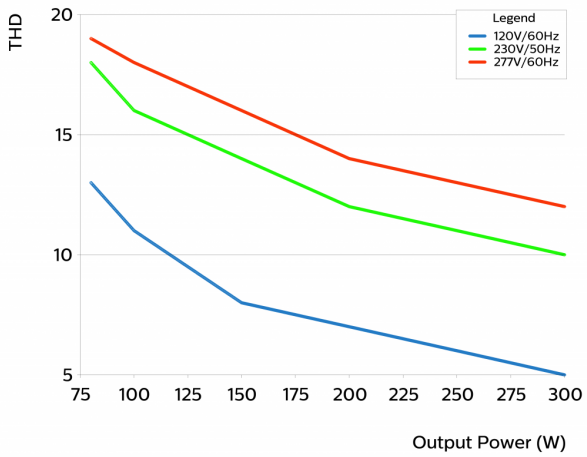
Power factor versus output power



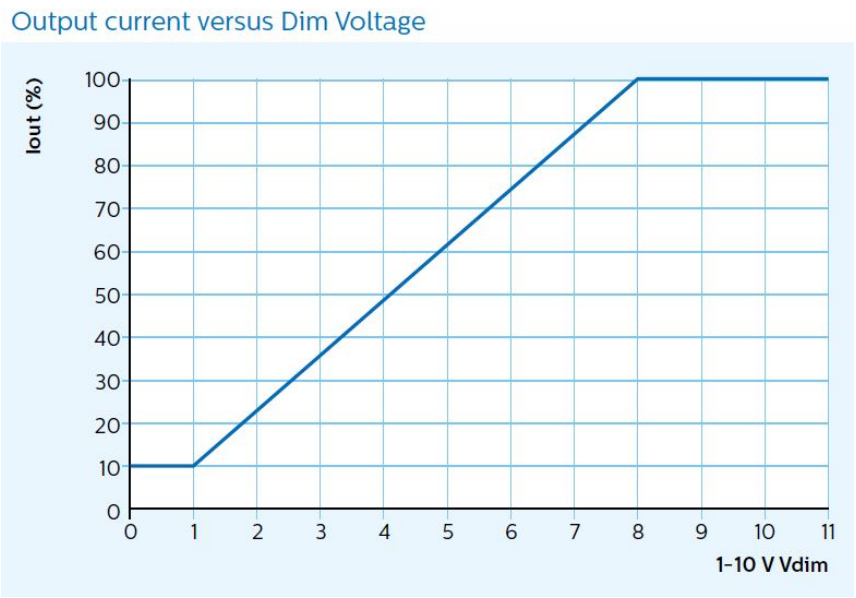
Efficiency versus output power



THD versus output power



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



Notes

Installation & Application Notes:

1: By factory default, the 1-10V interface is enabled and DALI interface is disabled.
These controls are mutually exclusive.

2: Integrated Dynadimmer cannot be overruled by DALI. These controls are mutually exclusive.

3: Driver is for built-in use only and must not be exposed to the elements such as snow, water and ice or to any other chemical agent which can be expected to have an adverse effect on the driver (e.g. corrosive environments). It is the responsibility of both luminaire manufacturer and installer to prevent exposure. Common sense needs to be used in order to define the proper luminaire or application IP rating.

4: Suitable for UL Damp & Dry locations

5: IEC: driver housing is allowed to be connected to accessible insulation Class II luminaire parts. Driver is suitable for insulation Class I and II applications.

6: Standard lead length on all wires: 275 +/- 30mm solid copper. Insulation rating: 105°C/600V.

7: Driver complies with the requirements of UL, CSA, CE, ENEC, CISPR15, FCC 47CFR15 Class A.
CE and ENEC are applicable at rated input voltage 220 ... 240V 50/60Hz only.

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Date of release: August 25, 2021 v3

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