

PHILIPS

Xitanium

LED driver



Datasheet

LED drivers – mini (DipSwitch)

Xitanium 20W/m 0.15-0.5A 44V DS I 230V

9290 038 70706

Enabling future-proof LED technology

Xitanium LED drivers are designed to operate LED solutions for general lighting applications.

Features

- Easy current selection via dipswitch
- SELV
- Additional input connectors for loopthrough wiring

Benefits

- High reliability underpinned by 5 year warranty
- Future-proof flexibility - application-oriented operating windows enable LED generation and complexity management
- Compatibility - can also be used for other manufacturers' modules or OEMs' own PCB designs

Application

- Retail
- Office

Logistical data

Specification item	Value
Product name	Xitanium 20W/m 0.15-0.5A 44V DS I 230V
EOC	872016932221900
Logistic code 12NC	9290 038 70706
EAN1 (GTIN)	8720169322219
EAN3 (box)	8720169322226
Pieces per box	40
Weight	127 gram

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	50...60	Hz	Performance range
Rated input current	0.1	A	@ rated output power @ rated input voltage
Rated input power	21.8	W	@ rated output power @ rated input voltage
Power factor	0.9		@maximum output power @ rated input voltage
Total harmonic distortion	20	%	@ rated output power @ rated input voltage
Efficiency	≥ 87.0	%	@ maximum output power @ rated input voltage @ max. U _{out}
Rated input voltage DC	186...250	V _{dc}	Performance range; EOfI = 95%
Rated input current DC	0.09...0.12	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
Isolation input to output	SELV		

Electrical output data

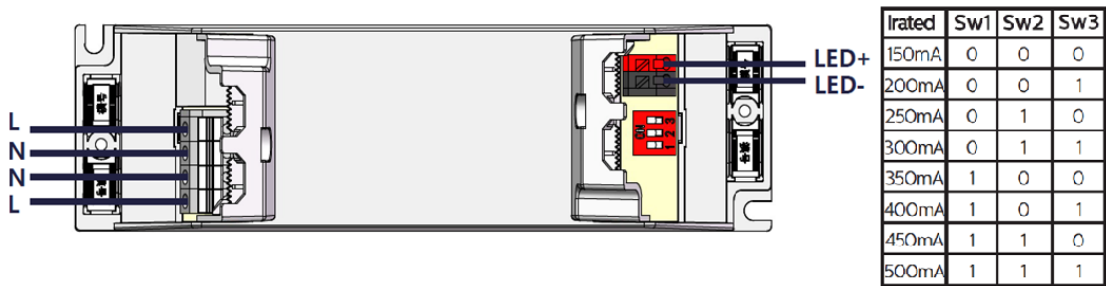
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	5...44	V _{dc}	500mA: 5-40Vdc
Output voltage max.	60	V	Maximum output voltage (rms)
Output current	150 ... 500	mA	Via dipswitches: with steps of 50 mA
Output current tolerance ±	5	%	@full load
Output current ripple LF	≤ 4	%	Ripple = peak / average, < 3kHz
Output P _{st} ^{LM}	≤ 0.3		In entire voltage range for each choice of output current
Output SVM	≤ 0.3		In entire voltage range for each choice of output current
Output power	0.8...20.0	W	Performance range: 6...20W
Rated output power	20.0	W	

Control interfaces

Specification item	Value	Unit	Condition
Control method	Fixed		Output current can be set via dip switches

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.75...2.5	mm ² / AWG	solid / stranded wire
Input wire strip length	10...11	mm	
Output wire cross-section	0.5...1.5	mm ² / AWG	solid / stranded wire
Output wire strip length	8...9	mm	
Maximum cable length	2	m	CISPR15: between driver and LED module
Loop Through	Input		

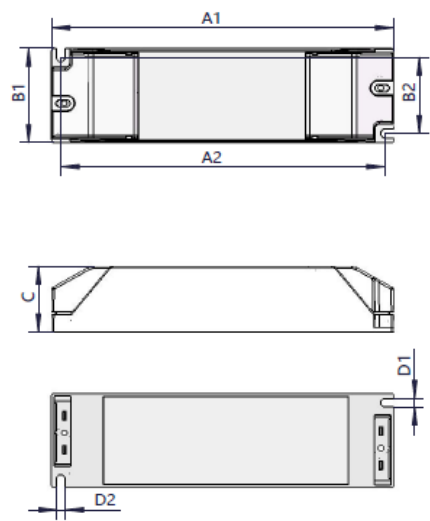


Isolation

Insulation per IEC61347-1	Mains	LED output
Mains	-	SELV
LED output	SELV	-

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	156	mm	
Mounting hole distance (A2)	147.8	mm	
Width (B1)	43	mm	
Width (B2)	34.8	mm	
Height (C1)	30	mm	
Mounting hole diameter (D1)	4	mm	
Mounting hole diameter (D2)	4	mm	
Weight	127	gram	
Housing color	White		

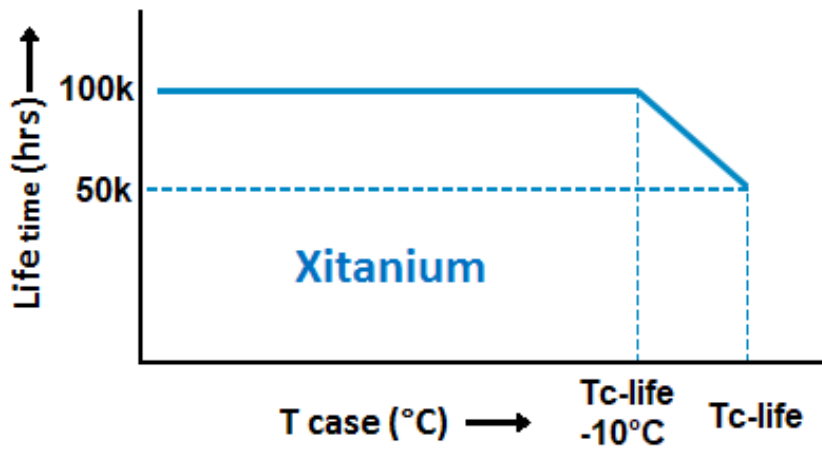


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20...+45	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded
Tcase-max	80	°C	Maximum temperature measured at Tcase-point
Tcase-life	80	°C	Measured at Tcase-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	50,000	hours	Measured temperature at Tcase-point is Tcase-life. Maximum failures = 10%



Maximum failures = 10%

Temperature [°C]	Lifetime	Unit	Condition
80	50000	hr	Temperature measured @Tc point
75	>50000	hr	
70	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)	DipSwitch	150 mA	Set the output current via the dipswitch, see wiring diagram for an overview

Non-programmable features

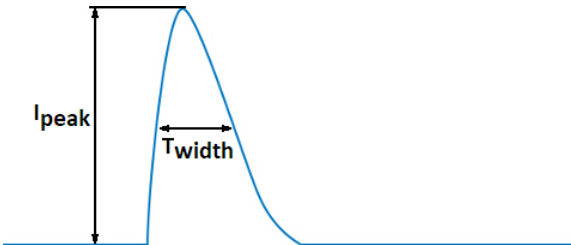
Specification item	Value		Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I and II		per IEC60598

Inrush current

Specification item	Value	Unit	Condition
Inrush current	4.2	A	Input voltage 230V
Inrush peak width	72	µs	Input voltage 230 V, measured at 50% height
Drivers / MCB 16A type B @230V AC	≤ 65	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 Touch Current (ins. Class II)	0.7	mA peak	Acc. IEC61347-1. LED module contribution not included

Surge immunity

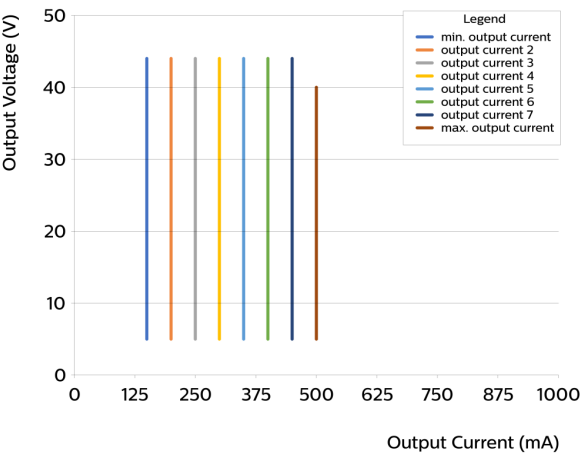
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	L- N Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	L/N - PE Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Application Info (Approbation)

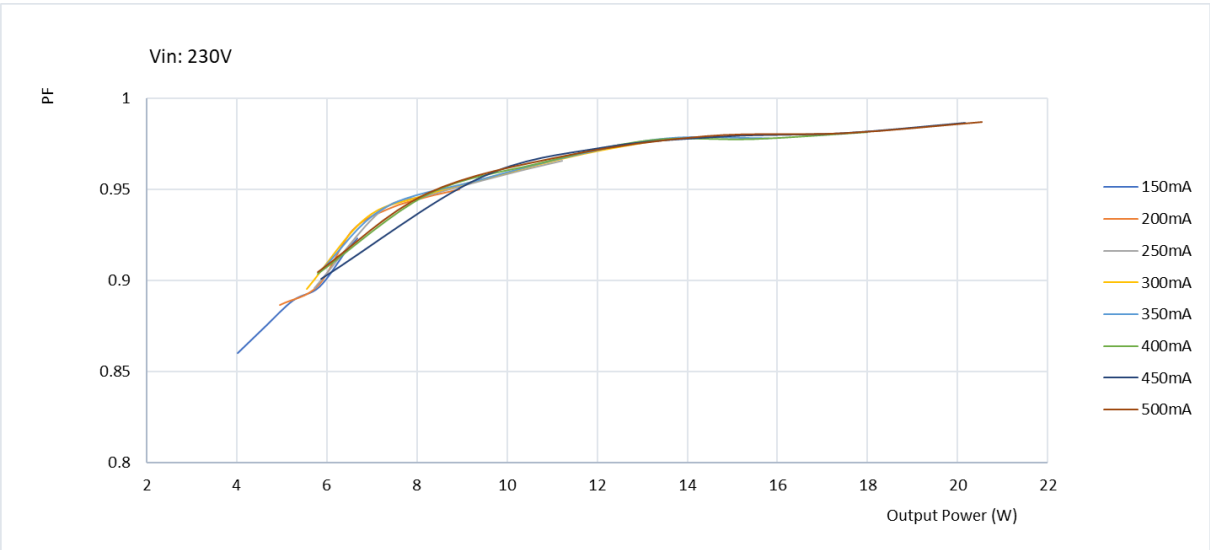
Specification item	Value
Approval marks and Certifications	CB / CCC / CE / EAC / EL / ENEC / Independent / RCM / UA / UKCA
EMI standards	
Ingress Protection classification (IP)	20
Noise and hum dB(A)	20
Application	Indoor Point
Mounting Type	Independent

Graphs

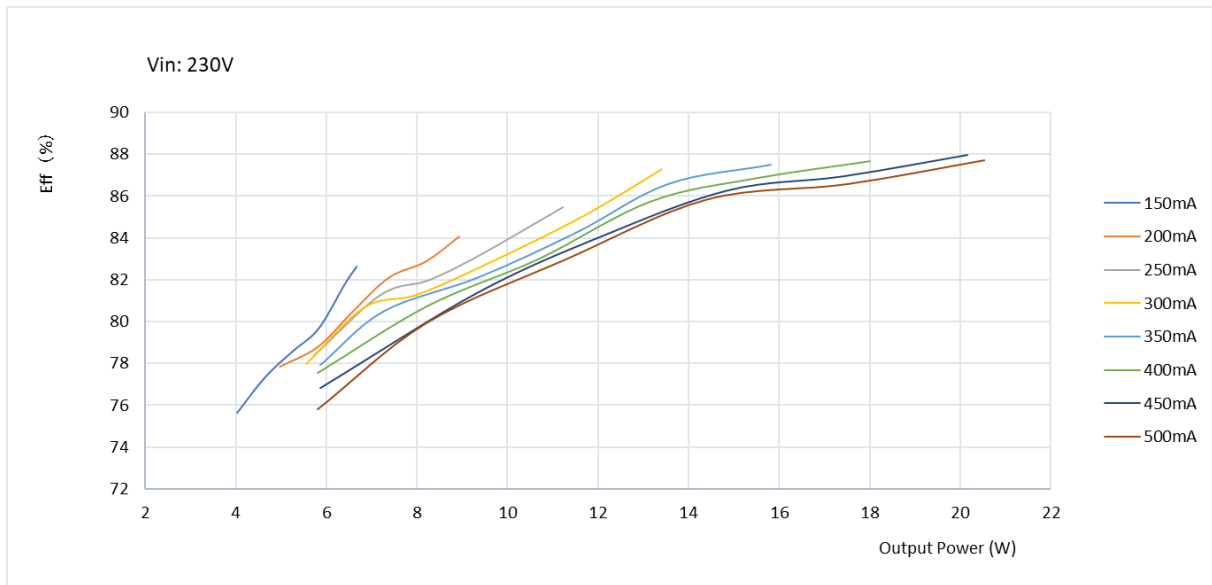
Operating window



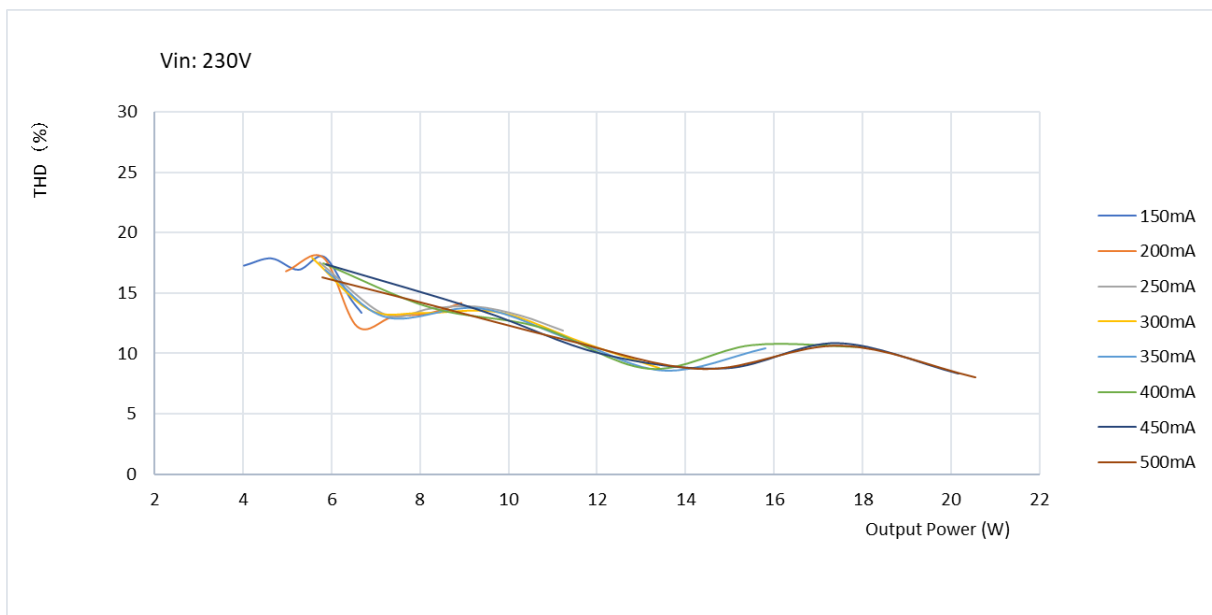
Power factor versus output power



Efficiency versus output power



THD versus output power





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