

PHILIPS

Xitanium

LED driver

Datasheet



LED Power Driver 80W 100V/ 240V

Product description

Xitanium Constant Voltage LED drivers are the perfect choice for enabling easy modular parallel connection of Philips LED products (like LDM and InteGrade families) used in refrigerated cabinets and display lighting. The drivers have an operating life matching that of LEDs. They offer excellent reliability and ensure a simplified installation process. Robust design reduces maintenance and lowers the cost of ownership over the application lifetime.

Benefits

- SELV operating voltages ensure safety even if wiring or LED boards become damaged
- Easy installation with simple parallel wiring
- Excellent reliability

Features

- Universal mains voltage
- Stable limited output voltage
- Safety Extra Low Voltage (SELV)
- Short circuit protection
- Long lifetime

Application

- Shelf and linear accent lighting in:
- supermarkets
 - refrigerated cabinets
 - retail environments
 - libraries
 - museums

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	100 ... 240	Vac	Performance
Rated input voltage range	90 ... 264	Vac	Operational
Rated input frequency	50 ... 60	Hz	Performance
Rated input frequency	45 ... 66	Hz	Operational
Rated input current	0.40	A	230Vac, full load
Rated input power	96	W	230Vac, full load
Power factor	0.98		230Vac, full load
Total harmonic distortion	≤ 14	%	230Vac, full load
Efficiency	88	%	230Vac, full load

Electrical output data

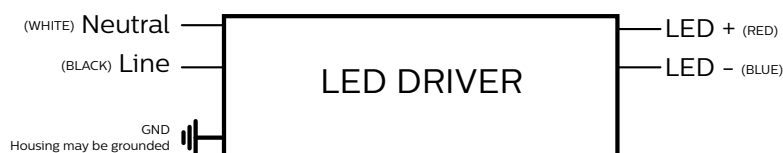
Specification item	Value	Unit	Condition
Regulation method	Constant Voltage		Rated output voltage: 24Vdc
Output voltage range	23.5 ... 25.6	Vdc	
Output current range	0.1 ... 3.3	Adc	
Output short-circuit current	< 8.0 / 1.1A	Apeak / Arms	Hiccup mode
Output voltage ripple	< 300	mVp-p	
Output power range	2.4 ... 80	W	
Line regulation	< 3	%	
Load regulation	< 5	%	
Turn-on delay	≤ 1	s	
Output voltage rise time	< 50	ms	
Hold-up time	20	ms	

Logistical data

Specification item	Value
Product name	LED Power Driver 80W 24V 100V/240V
European Order code	87829121526400
Logistic code 12NC	9290 006 53906
Pieces per box	10

Wiring & Connections

Specification item	Value	Unit	Condition
Input wire cross-section	0.8	mm ²	Solid wire, 300 +/- 10mm length
	18	AWG	
Input wire default strip length	9	mm	
Output wire cross-section	0.8	mm ²	Solid wire, 300 +/- 10mm length
	18	AWG	
Output wire default strip length	9	mm	
Maximum output cable length	2.5	m	CISPR15: between driver and LED module

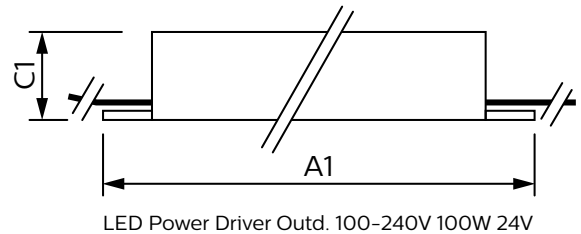
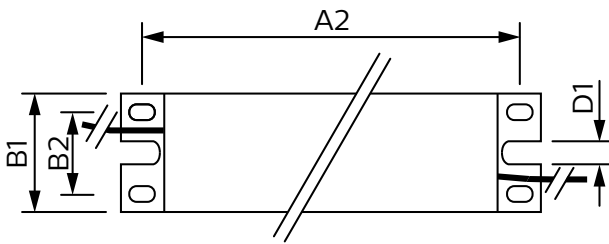


Insulation

Insulation	Mains	GND	LED
Mains	N/A	Double	SELV (double)
GND	Double	N/A	Basic
LED	SELV (double)	Basic	N/A

Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	241.3	mm	
Length (A3)	213.2	mm	
Width (B1)	43.1	mm	
Height (C1)	30.0	mm	
Fixing hole distance (A2)	228.6	mm	
Fixing hole distance (A4)	226.0	mm	
Fixing hole distance (B2)	36.9	mm	
Fixing hole diameter (D1)	6.35	mm	Screw: M6
Fixing hole diameter (D2)	8.2	mm	Screw: M8
Weight	620	gram	



Operational temperatures and humidity

Specification item	Value	Unit	Condition
Driver ambient temperature	-30...+60	°C	At rated output power. Higher ambient temperature allowed as long as Tcase-max is not exceeded.
Tcase-min	-30	°C	Min. steady-state Tcase
Tcase-max	+85	°C	Max. steady-state Tcase
Tcase-max	-30...+75	°C	Life steady-state Tcase
Maximum housing temperature	120	°C	In case of failure
Relative humidity *	10...90	%	Non-condensing
Noise and hum	≤ 20	dB	
Driver IP rating	IP20		Driver is for built-in use only

*: The LED Power Driver is intended for built-in outdoor & indoor use only. The driver should not be directly exposed to the elements like snow, water and ice.

Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-30...+85	°C	
Relative humidity	5...95	%	Non-condensing

Lifetime

Specification item	Value	Unit	Condition
Rated driver lifetime	50,000	hours	T _{case} ≤ T _{case-life} Maximum failures = 10%

Features

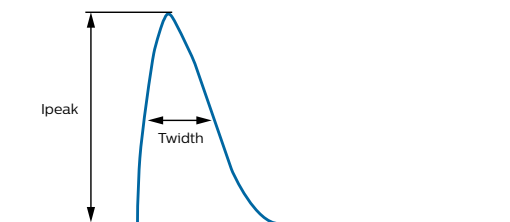
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Shortcircuit protection	Yes		Hiccup mode, automatic recovering
Overvoltage protection	Yes		27 ... 35V, hiccup mode
Overpower protection	Yes		Automatic recovering
Hot wiring	Yes		
Suitable for insulation class applications	I and II		Per IEC60598

Certificates and standards

Specification item	Value
Approval marks	CE / CB / TUV (ENEC) / c-UL / SELV / CCC / CSA

Inrush current

Specification item	Value	Unit	Condition
Inrush current I _{peak}	43	A	Input voltage 230Vac
Inrush current T _{width}	440	µs	Input voltage 230Vac, measured at 50% I _{peak}
Typical number of drivers	Max. 6	pcs	MCB 16A B type, mains impedance 200mΩ + 400µH



MCB	Rating	Relative number of LED drivers *
B	6A	37%
B	10A	63%
B	13A	81%
B	16A	100%
B	20A	125%
B	25A	156%
C	6A	63%
C	10A	104%
C	13A	135%
C	16A	170%
C	20A	208%
C	25A	260%
D	6A	125%
D	10A	104%
D	13A	135%
D	16A	170%
D	20A	208%

*: Please check that cable cross sectional area corresponds with MCB rating

Driver touch current

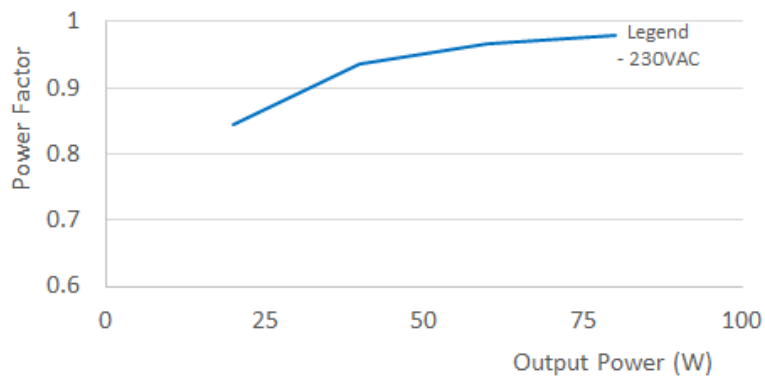
Specification item	Value	Unit	Condition
Typical touch current	< 0.7	mA peak	Acc. IEC61347-1 at 230Vac 50/60Hz LED module contribution not included

Surge immunity

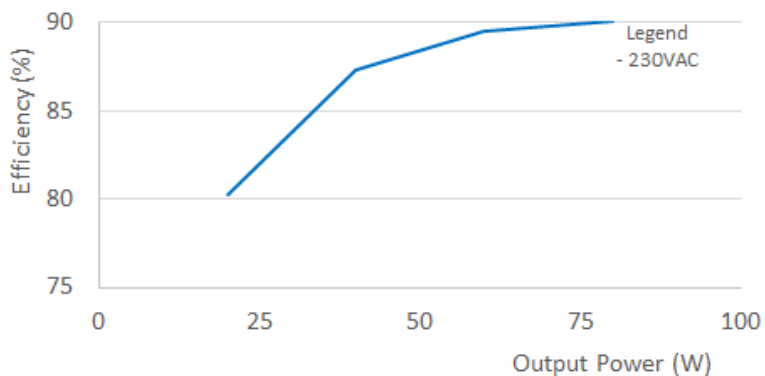
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1.0 / 0.5	kV / kA	L-N, acc. IEC61000-4-5, 2 Ohm, 1,2/50µs, 8/20µs
Mains surge immunity (comm. mode)	2.0	kV	L/N – GND acc. IEC61000-4-5, 12 Ohm, 1,2/50µs, 8/20µs

Graphs

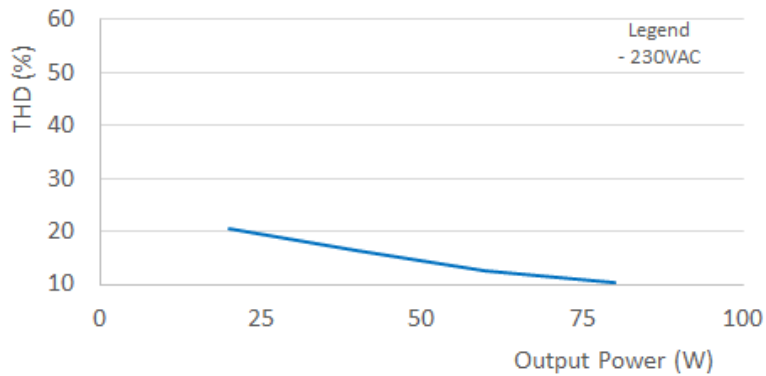
Power factor versus output power



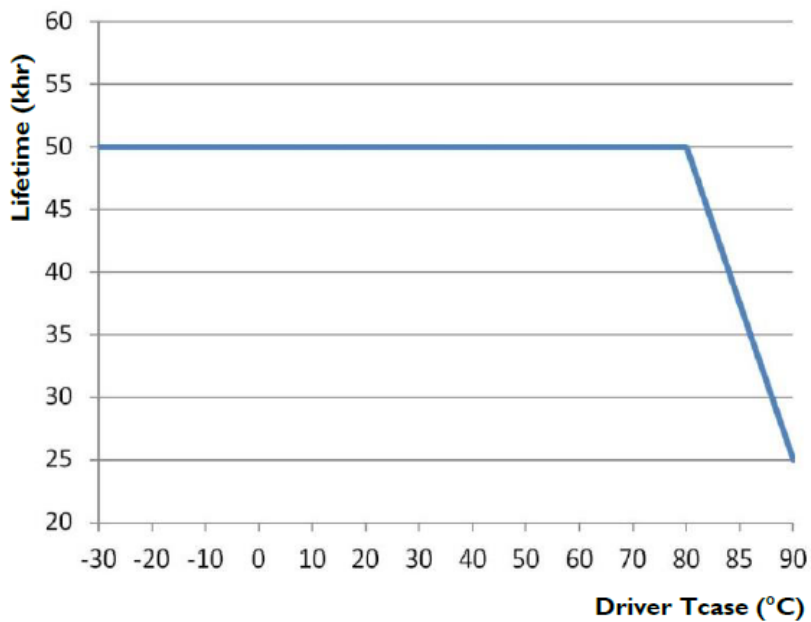
Efficiency versus output power



THD versus output power



Driver lifetime versus driver case temperature Tcase



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