

PHILIPS

Xitanium

LED driver



Datasheet

LED Power Driver 150W 24VDC 120-240V

9290 021 01980

Product description

Philips full-electronic constant voltage LED Power drivers are designed to operate 24VDC LED solutions used in general built-in applications such as refrigerated display lighting, retail display lighting and linear accent lighting. They are specifically designed to ensure the highest performance with maximum robustness combined with a long lifetime.

Benefits

- SELV operating voltages, ensuring safety even if wiring or LED boards become damaged
- Energy savings through high efficiency
- Ultimate robustness, offering peace of mind and lower maintenance costs
- Easy to design-in and install
- Long lifetime

Features

- Built-in use for Insulation Class I and II applications
- Global approbations and certifications
- Stable output voltage
- Wide ambient temperature range
- Protection against overpower and overvoltage
- Output short-circuit shutdown feature with automatic restart

Application

- Retail display lighting, linear accent lighting and refrigerated display lighting
- Shelf lighting
- Cove lighting
- Facade accent lighting
- Coolers and freezers

Electrical input data

Specification item	Value	Value	Unit	Condition
Rated input voltage range	108...132	202...254	V _{ac}	Performance range
Rated input voltage	120	230	V _{ac}	
Rated input frequency range	47...63	47...63	Hz	Performance range
Rated input current	1.3	0.69	A	@ rated output power @ rated input voltage
Max. input current	1.55	0.8	A	@ rated output power @ minimum performance input voltage
Rated input power	167	161	W	@ rated output power @ rated input voltage
Power factor	0.99	0.97		@ rated output power @ rated input voltage
Total harmonic distortion	4	12	%	@ rated output power @ rated input voltage
Efficiency	91	93	%	@ rated output power @ rated input voltage
Input voltage AC range	108...132	198...264	V _{ac}	Safety operational range
Input frequency AC range	45...66	45...66	Hz	Safety operational range
Isolation input to output	SELV	SELV		

Electrical output data

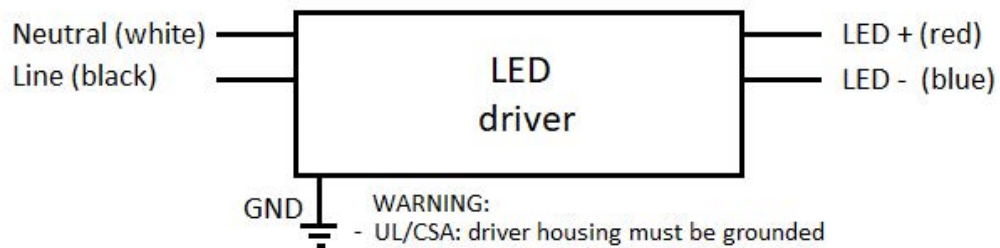
Specification item	Value	Unit	Condition
Regulation method	Constant Voltage		
Output voltage	24	V _{dc}	Output voltage range: 23.5 ... 25.6VDC
Output voltage max.	26	V	
Output current	0.1...6.25	A	
Output voltage ripple	≤ 200	mV _{pp}	
Output power	2.4...150	W	
Line regulation	≤ 0.1	%	
Load regulation	≤ 0.4	%	
Turn-on delay	≤ 0.15	s	With Integrate engine 24VDC module at rated output power
Output voltage rise time	≤ 30	ms	
Hold-up time	≥ 10	ms	

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	Fixed		

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.75 / 19	mm ² / AWG	Solid wire
Output wire cross-section	0.75 / 19	mm ² / AWG	Solid wire
Maximum cable length	2.5	m	Total cable length between driver and LED modules



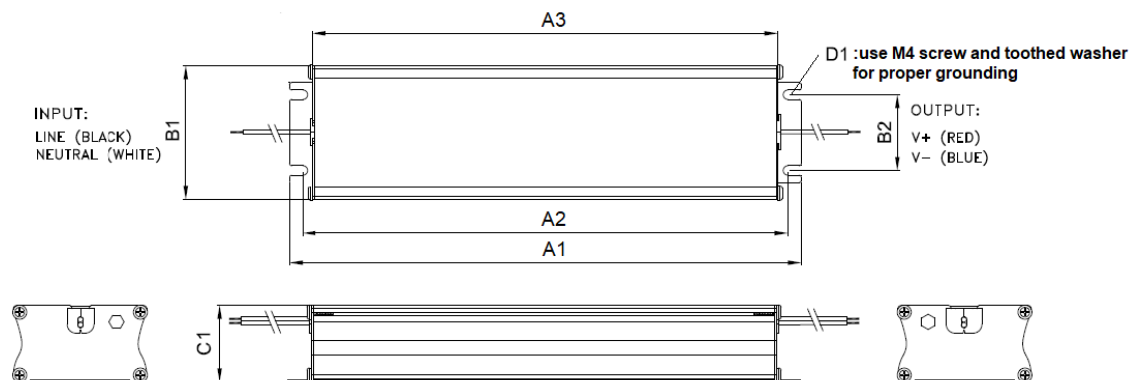
- WARNING:**
- UL/CSA: driver housing must be grounded
 - Install in accordance with national and local electrical codes and regulations
 - IEC: connecting driver housing to Protective Earth (PE) not mandatory unless appliance touch current exceeds 0.7mA_{peak}
 - Do not insulate the driver housing from the appliance chassis, use toothed washers when mounting the driver

Insulation

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

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	230	mm	
Mounting hole distance (A2)	218	mm	
Length (A3)	209.1	mm	
Width (B1)	60	mm	
Width (B2)	34.2	mm	
Height (C1)	34	mm	
Mounting hole diameter (D1)	4.2	mm	
Weight	735	gram	



Logistical data

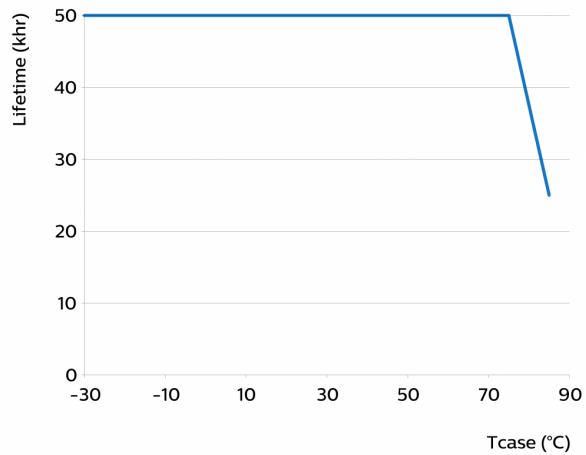
Specification item	Value
Product name	LED Power Driver 150W 24VDC 120-240V
EOC	871869967937800
Logistic code 12NC	9290 021 01980
EAN1 (GTIN)	8718699679378
Pieces per box	8

Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-30...+60	°C	Higher ambient temperature allowed as long as T _{case-max} is not exceeded
T _{case-max}	85	°C	Maximum temperature measured at T _{case} -point
T _{case-life}	75	°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	50,000	hours	Measured temperature at Tcase-point is Tcase-life. Maximum failures = 10%



Storage temperature and humidity

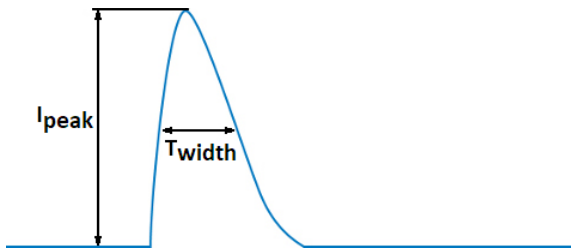
Specification item	Value	Unit	Condition
Ambient temperature	-30...+85	°C	
Relative humidity	5...95	%	Non-condensing

Features

Specification item	Value		Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Hiccup mode, automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	Yes		
Suitable for fixtures with protection class	I and II		per IEC60598
Overtemperature protection	Yes		Automatic recovering

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	80	A	Input voltage 230V
Inrush current T_{width}	200	μs	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 6	pcs	Indicative value



MCB	Rating	Relative number of LED drivers
B	4A	25%
B	6A	40%
B	10A	63%
B	13A	81%
B	16A	100% (stated in datasheet)
B	20A	125%
B	25A	156%
B	32A	200%
B	40A	250%
C	4A	42%
C	6A	63%
C	10A	104%
C	13A	135%
C	16A	170%
C	20A	208%
C	25A	260%
C	32A	340%
C	40A	415%

Driver touch current / protective conductor current

Specification item	Value	Unit	Condition
Typical Touch Current (ins. Class II)	0.5	mA peak	Acc. IEC61347-1. LED module contribution not included
Typical Protective Conductor Current (ins. Class I)	0.3	mA rms	Acc. IEC60598-1. LED module contribution not included

Surge immunity

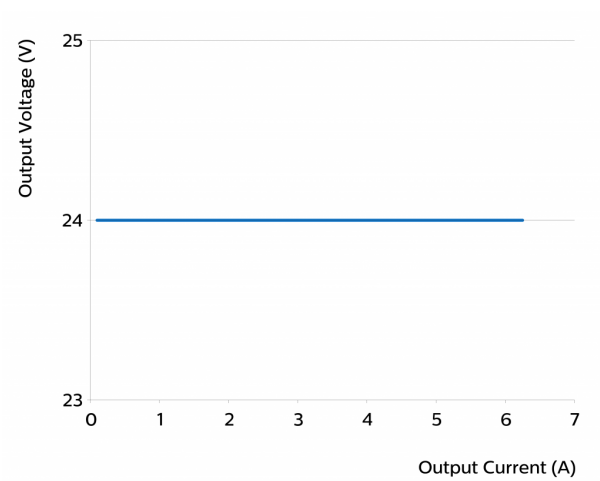
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	2	kV	L - N, acc. IEC61000-4-5, 20hm
Mains surge immunity (comm. mode)	4	kV	L/N - GND acc. IEC61000-4-5, 120hm

Application Info

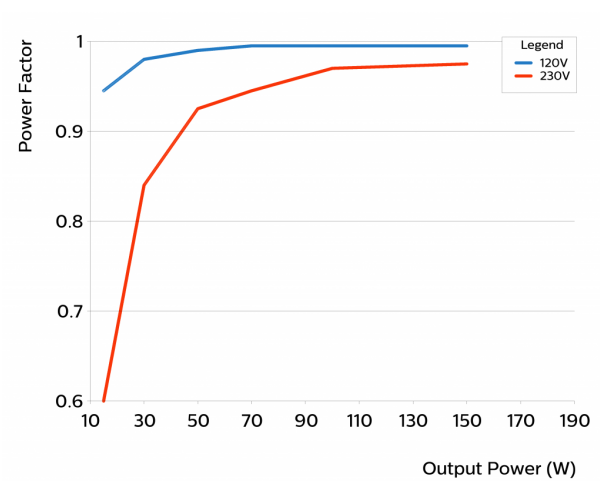
Specification item	Value
Approval marks	CCC / CE / Double-insulated / EAC / ENEC / RCM / SELV / VDE / VDE household / VDE-EMC
Ingress Protection classification (IP)	20
Application	Indoor Constant Voltage
Mounting Type	Built-in

Graphs

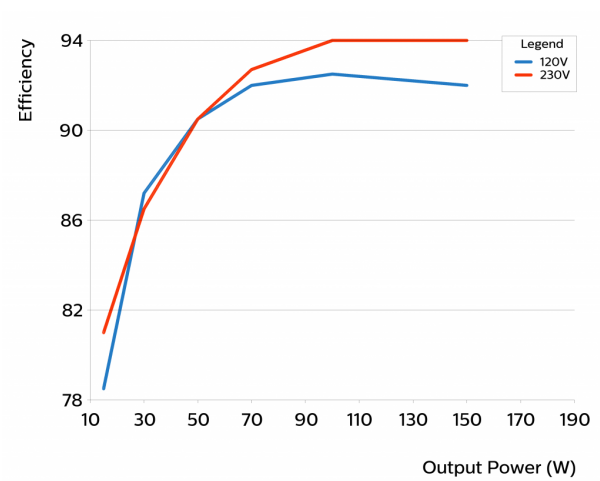
Operating window



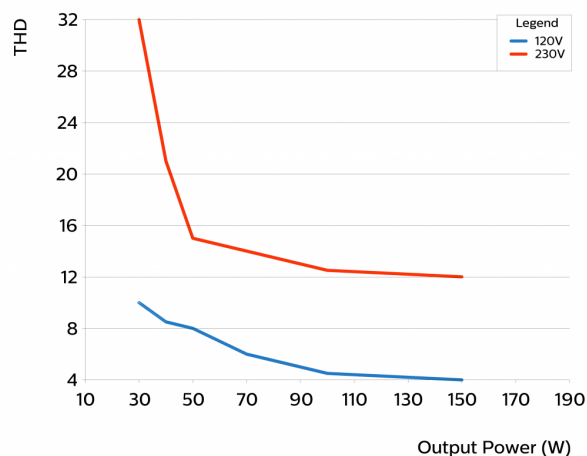
Power factor versus output power



Efficiency versus output power



THD versus output power



Notes

Ingress Protection (IP):

The LED Power Driver is intended for built-in use. It must not be exposed including but not limited to snow, water and ice or any other chemical agent which may have an adverse affect on driver operation and performance. Exposure may lead to driver failure. It is the luminaire manufacturer's / installer's responsibility to prevent exposure.

Driver is certified per following standards:

Safety:

EN 61347-1:2015 (IEC 61347-1:2015), EN 61347-2-13:2014 (IEC 61347-2-13:2014), GB 19510.1-2009, GB 19510.2.14-2009

Household:

IEC 60335-1:2010+AMD1:2013+AMD2:2016; IEC 60335-2-24:2010+AMD1:2012; IEC 60335-2-89:2010

+AMD1:2012 +AMD2:2015

Compliant to the "Non-sparking 'n' electrical apparatus" requirements of IEC/EN 60335-2-89, Annex BB and IEC/EN 60335-2-24, Annex CC

EMC:

Emissions: EN55015:2013 + A1:2015, EN61000-3-2 Class C, (>60% load):2014, EN61000-3-3:2013, GB/T 17743-2017

Immunity: EN61000-4-2, 3, 4, 5, 6, 8, 11, EN61547-1:2009, GB 17625.1-2012

Performance:

IEC 62384:2006 + A1:2009

Mains input wires have double insulation.



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