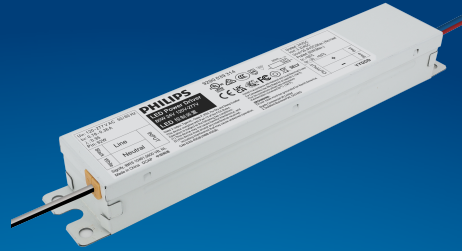


PHILIPS

Xitanium

LED driver



Datasheet

LED Power Driver 80W 24V 120V-277V

9290 039 31406

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.

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

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

Application

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

Logistical data

Specification item	Value
Product name	LED Power Driver 80W 24V 120V-277V
Logistic code 12NC	9290 039 31406
Pieces per box	10

Electrical input data

Specification item	Value	Value	Value	Unit	Condition
Rated input voltage range	108...132	202...254	249...305	V _{ac}	Performance range
Rated input voltage	120	230	277	V _{ac}	
Rated input frequency	50...60	50...60	50...60	Hz	Performance range
Rated input current	0.76	0.39	0.34	A	@ rated output power @ rated input voltage
Max. input current	0.87	0.45	0.37	A	@ rated output power @ minimum performance input voltage
Rated input power	91.0	88.0	88.0	W	@ rated output power @ rated input voltage
Power factor	0.97	0.97	0.97		@ rated output power @ rated input voltage
Total harmonic distortion	10	14	14	%	@ rated output power @ rated input voltage
Efficiency	88.0	90.0	90.0	%	@ rated output power @ rated input voltage
Input voltage AC	108...132	198...264	249...305	V _{ac}	Operational range
Input frequency AC	45...66	45...66	45...66	Hz	Operational range
Isolation input to output	UL Class 2 / SELV	UL Class 2 / SELV	UL Class 2 / SELV		

Electrical output data

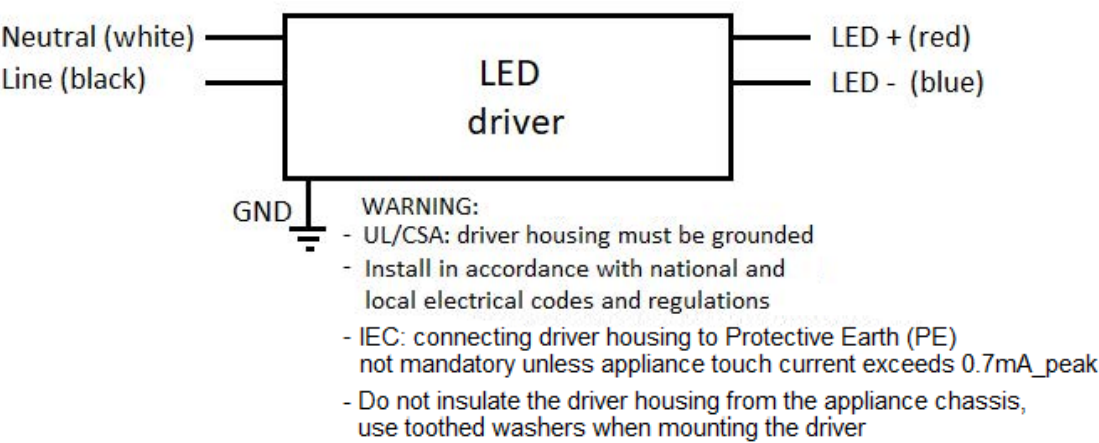
Specification item	Value	Unit	Condition
Regulation method	Constant Voltage		
Output voltage	24	V _{dc}	Output voltage range: 22.8 ... 25.2VDC
Output voltage max.	26	V	
Output current	100...3300	mA	Performance range: 660...3300mA for 120V/230V, 1300...3300mA for 277V
Output voltage ripple	≤ 1	%	< 240 mVpp
Output power	2.4...80.0	W	Performance range: 16...80W for 120V/230V, 32W...80W for 277V
Line regulation	≤ 1	%	
Load regulation	≤ 3	%	
Turn-on delay	≤ 0.5	s	
Output voltage rise time	≤ 50	ms	
Hold-up time	≥ 10	ms	

Control interfaces

Specification item	Value	Unit	Condition
Control method	Fixed		

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.82 / 18	mm ² / AWG	Solid wire
Output wire cross-section	0.82 / 18	mm ² / AWG	Solid wire
Maximum cable length	2.5	m	Total cable length between driver and LED modules

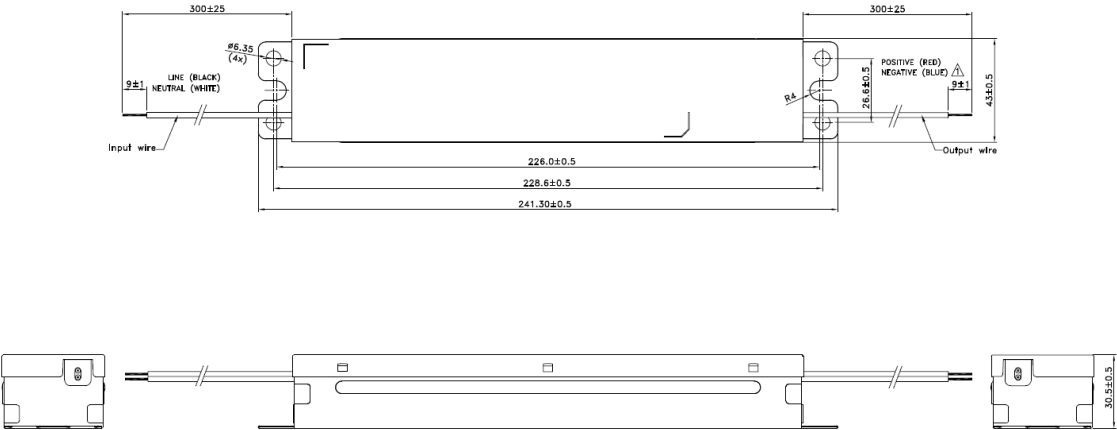


Isolation

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

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	241.3	mm	
Mounting hole distance (A2)	228.6	mm	
Length (A3)	213.2	mm	
Width (B1)	43.1	mm	
Width (B2)	26.6	mm	
Height (C1)	30	mm	
Mounting hole diameter (D1)	6.4	mm	
Mounting hole diameter (D2)	8.2	mm	
Weight	575	gram	

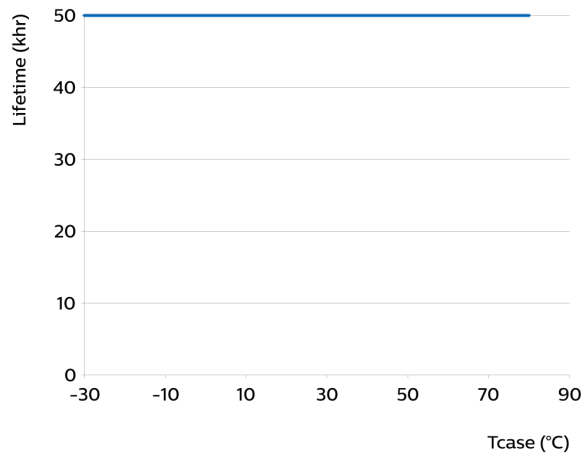


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-30...+60	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded
Tcase-max	85	°C	Maximum temperature measured at Tcase-point
Tcase-life	75	°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%

Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+85	°C	
Relative humidity	5...95	%	Non-condensing

Non-programmable features

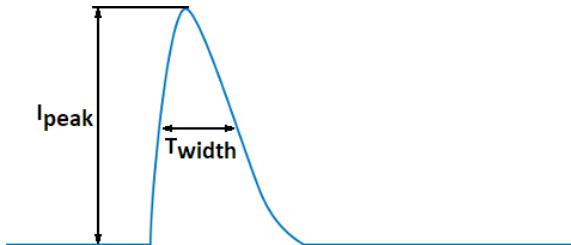
Specification item	Value		Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Hiccup mode, automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	Yes		No load power <0.50W
Suitable for fixtures with protection class	I and II		per IEC60598
Overtemperature protection	Yes		Automatic recovering

Inrush current

Specification item	Value	Unit	Condition
Inrush current	44.7	A	Input voltage 230V
Inrush peak width	190	μs	Input voltage 230V, measured at 50% height
Drivers / MCB 16A type B @230V AC	≤ 12	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 Protective Conductor Current (ins. Class I)	0.5	mA rms	Acc. IEC60598-1. LED module contribution not included
Earth Leakage Current	0.7	mA peak	

Surge immunity

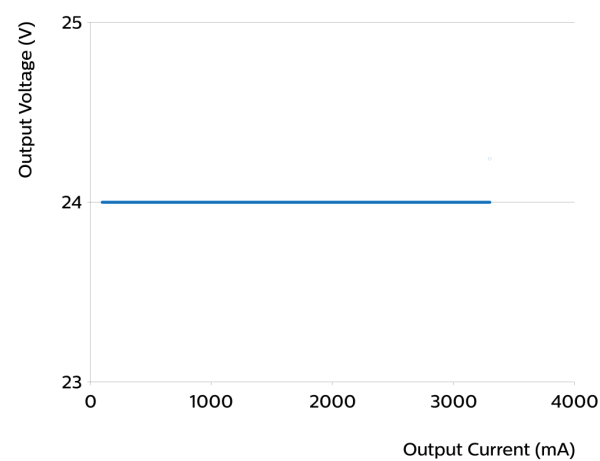
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	L - N, 1kV acc. IEC61000-4-5; 1.5kV acc. ANSI comb. wave 2 Ohm, 6kV acc. ANSI 100kHz ring wave 30 Ohm
Mains surge immunity (comm. mode)	2	kV	L/N - GND, 2kV acc. IEC61000-4-5, 120Ohm; 1.5kV acc. ANSI comb. wave 2 Ohm, 3kV acc. ANSI 100kHz ring wave 30 Ohm

Application Info (Approbation)

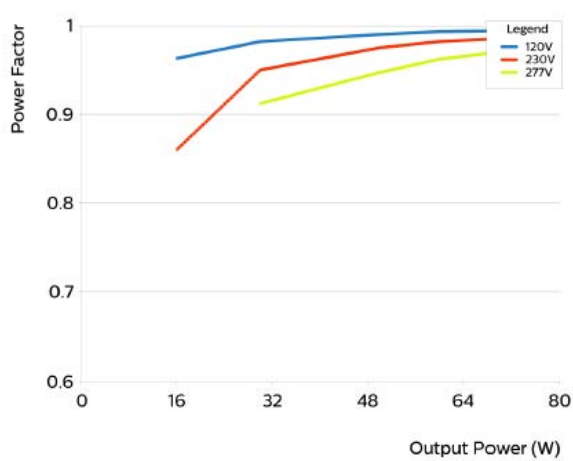
Specification item	Value
Approval marks and Certifications	110 / CB / CCC / CE / Double-insulated Built-In / ENEC / RCM / SELV / UKCA / UL Class 2 / UL Listed US & Can / Household
Ingress Protection classification (IP)	20
Noise and hum dB(A)	20
Application	Indoor Constant Voltage
Mounting Type	Built-in

Graphs

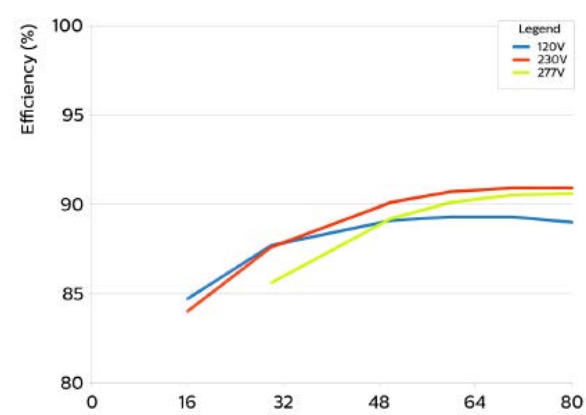
Operating window



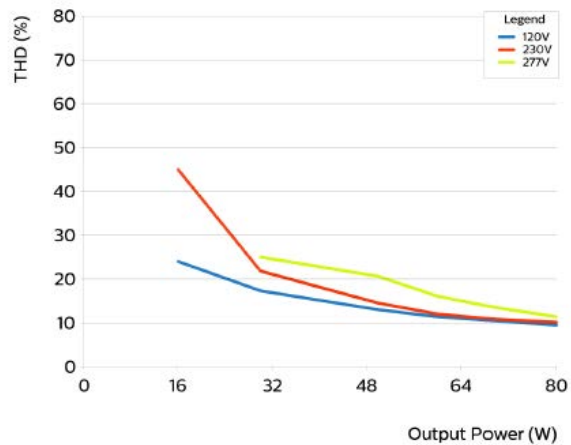
Power factor versus output power



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.

All Parameters, if not specified, are typical value and measured at typical input voltage and 25°C ambient temperature.



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