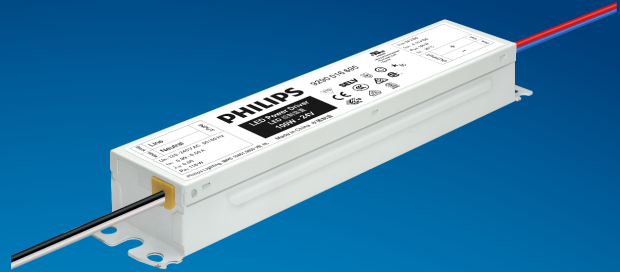


PHILIPS

Xitanium

LED driver



Datasheet

LED Power Driver 100W - 24V

9290 016 69506

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 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	0.99	0.50	A	@ rated output power @ rated input voltage
Max. input current	1.1	0.56	A	@ rated output power @ minimum performance input voltage
Rated input power	116	116	W	@ rated output power @ rated input voltage
Power factor	0.99	0.97		@ rated output power @ rated input voltage
Total harmonic distortion	10	14	%	@ rated output power @ rated input voltage
Efficiency	86	88	%	@ 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

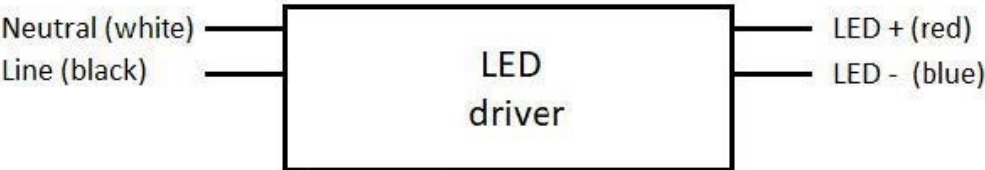
Specification item	Value	Unit	Condition
Regulation method	Constant Voltage		
Output voltage	24	V _{dc}	Output voltage range: 23.5 ... 25.3VDC
Output voltage max.	26	V	
Output current	0.1...4.16	A	
Output voltage ripple	≤ 230	mV _{pp}	
Output power	2.4...100	W	
Line regulation	≤ 0.1	%	
Load regulation	≤ 1	%	
Turn-on delay	≤ 0.25	s	With Integrate engine 24VDC module at rated output power
Output voltage rise time	≤ 30	ms	
Hold-up time	≥ 45	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



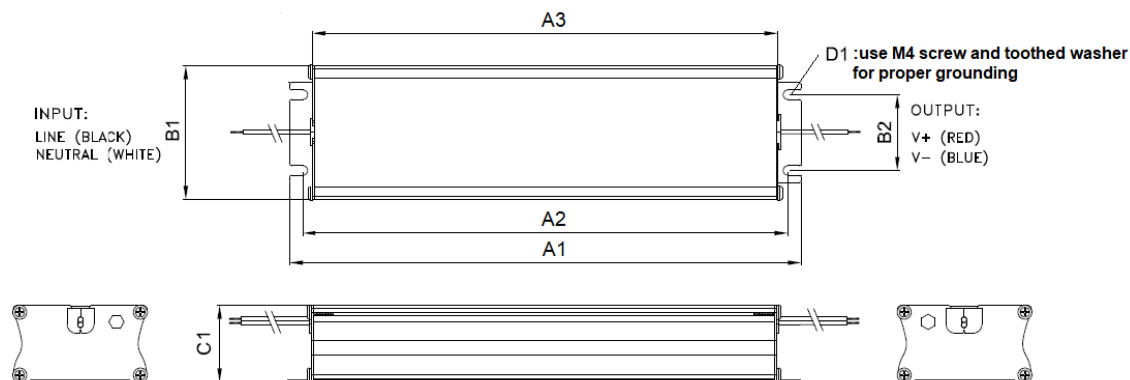
- WARNING:**
- UL/CSA: driver housing must be grounded
 - Install in accordance with national and local electrical codes and regulations
 - Do not insulate the driver housing from the appliance chassis, use toothed washers when mounting the driver

Insulation

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

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)	6.35	mm	
Weight	640	gram	



Logistical data

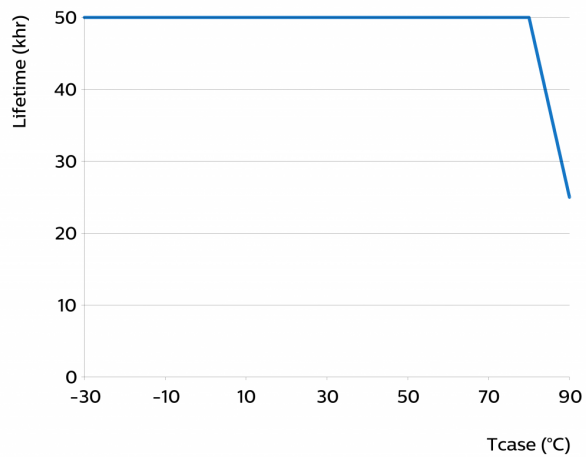
Specification item	Value
Product name	LED Power Driver 100W - 24V, 9290 016 695
EOC	694793914959900
Logistic code 12NC	9290 016 69506
EAN1 (GTIN)	6947939149599
Pieces per box	10

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}	90	°C	Maximum temperature measured at T _{case-point}
T _{case-life}	80	°C	Measured at T _{case-point}
Maximum housing temperature	120	°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

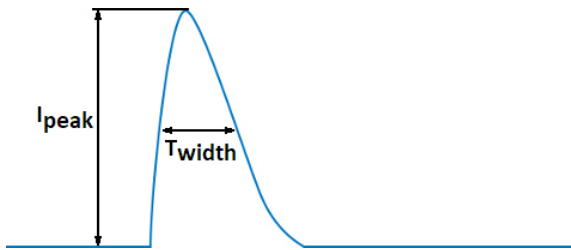
Specification item	Value	Unit	Condition
Ambient temperature	-30...+85	°C	
Relative humidity	5...95	%	Non-condensing

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		per IEC60598
Overtemperature protection	Yes		Automatic recovering

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	30	A	Input voltage 230V
Inrush current T_{width}	400	μs	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 9	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 Protective Conductor Current (ins. Class I)	0.4	mA rms	Acc. IEC60598-1. LED module contribution not included
Earth Leakage Current	0.75	mA rms	

Surge immunity

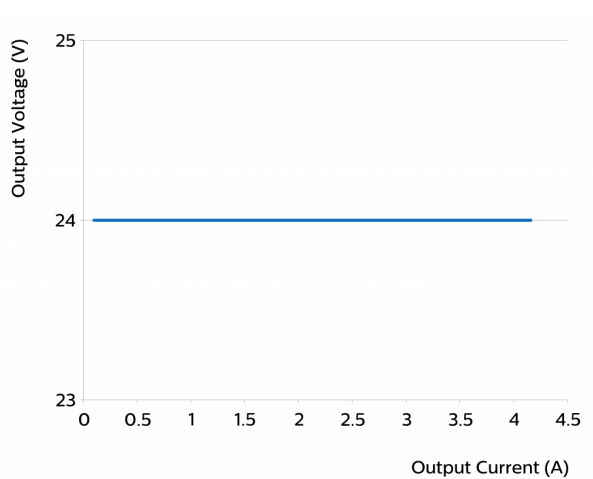
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	L - N, 1kV acc. IEC61000-4-5; 1.5kV acc. ANSI comb. wave 2 Ohm, 6kV acc. ANSI 100kHz ring wave 30 Ohm
Mains surge immunity (comm. mode)	2	kV	L/N - GND, 2kV acc. IEC61000-4-5, 120Ohm; 2kV acc. ANSI 100kHz ring wave 30 Ohm

Application Info

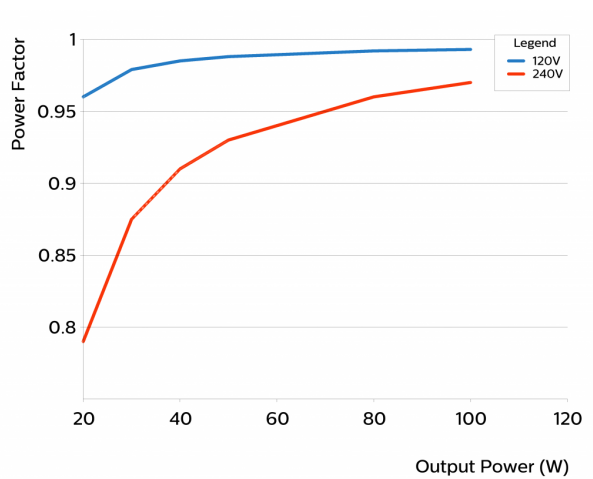
Specification item	Value
Approval marks	CCC / CE / CSA / Double-insulated / ENEC / RCM / SELV / UL Recognized US & Can / VDE / VDE household / VDE-EMC
Ingress Protection classification (IP)	20
Application	Indoor Constant Voltage
Mounting Type	Built-in

Graphs

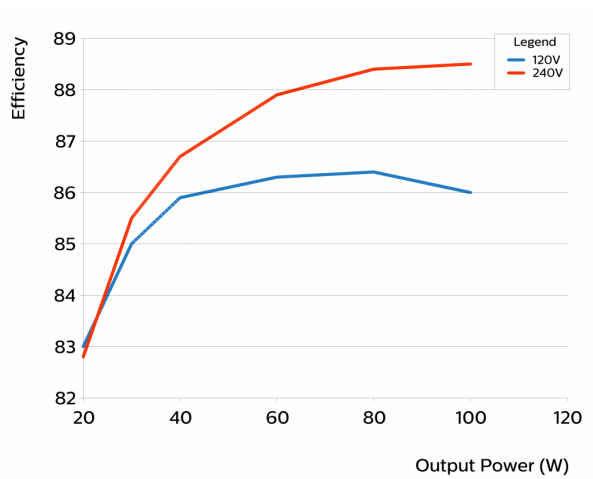
Operating window



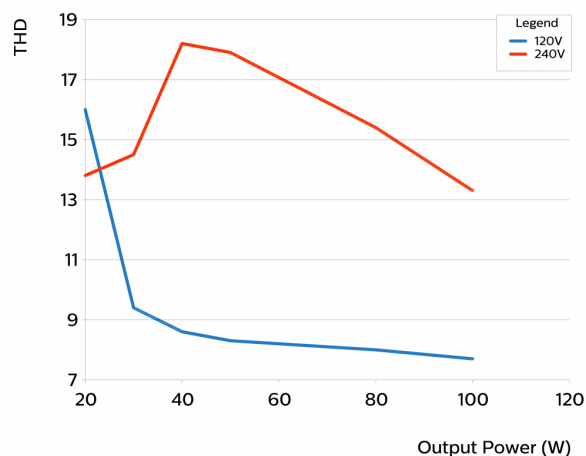
Power factor versus output power



Efficiency versus output power



THD versus output power



Notes

Ingress Protection (IP):

The LED Power Driver is intended for built-in and indoor 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:

IEC/EN 61347-1, IEC/EN 61347-2-13, UL 8750, CSA 250.13, GB 19510.1, GB 19510.14

Household:

IEC/EN 60335-1, IEC/EN 60335-2-24, IEC/EN 60335-2-89.

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: EN 55015, IEC/EN 61000-3-2 Class C, IEC/EN 61000-3-3, FCC 47 CFR15 Class B, GB/T 17743

Immunity: IEC/EN 61000-4-2,3,4,5,6,8,11, IEC/EN 61547-1, GB 17625.1

Performance:

IEC/EN 62384

Mains input wires have double insulation.



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