

PHILIPS

LED Power Drivers



LED Power Driver drivers

LED Power Driver 100W 24V 120-240V

Product description

Philips Constant Voltage LED Power drivers are designed to operate 24VDC LED solutions used 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
- Installation friendly, for Class I and Class II systems
- Best EMC performance

Features

- Built-in use for Insulation Class
- I and II applications
- Metal housing with encapsulated flying leads
- Global approbations and certifications
- Stable output voltage
- Wide ambient temperature range
- Overtemperature and overpower protection
- Output short-circuit shutdown feature with automatic restart

Applications

Refrigerated display, retail display and linear accent lighting:

- Coolers and freezers
- Shelf lighting
- Cove lighting
- Facade accent lighting

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	120 ... 240	Vac	Performance
Rated input voltage range	108 ... 264	Vac	Operational safety
Rated input frequency	50 ... 60	Hz	Performance
Rated input frequency	45 ... 66	Hz	Operational safety
Rated input current	0.99 / 0.50	A	120/240Vac, @ rated output power
Rated input power	118 / 113	W	120/240Vac, @ rated output power
Power factor	0.99 / 0.97		120/240Vac, @ rated output power. See graph.
Total harmonic distortion	10 / 11.5	%	120/240Vac, @ rated output power. See graph.
Efficiency (typ)	86 / 88	%	120/240Vac, @ rated output power. See graph

Electrical output data

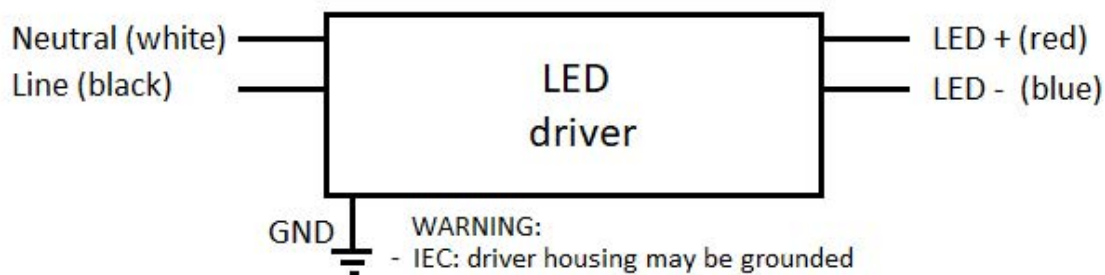
Specification item	Value	Unit	Condition
Regulation method	Constant Voltage		
Output voltage range	23.5 ... 25.6	Vdc	
Output current range	0 ... 4.16	A _{dc}	
Output voltage ripple	< 230	mV _{pp}	
Rated output power	100	W	
Line regulation	< 0.1	%	
Load regulation	< 1	%	
Turn-on delay	≤ 0.25	s	
Output voltage rise time	≤ 30	ms	
Hold-up time	45	ms	

Logistical data

Specification item	Value
Product name	LED Power Driver 100W 24V 120-240V
Order code	694793914959900
Logistic code 12NC	9290 016 69506
Pieces per box	10

Wiring & Connections

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



WARNING:

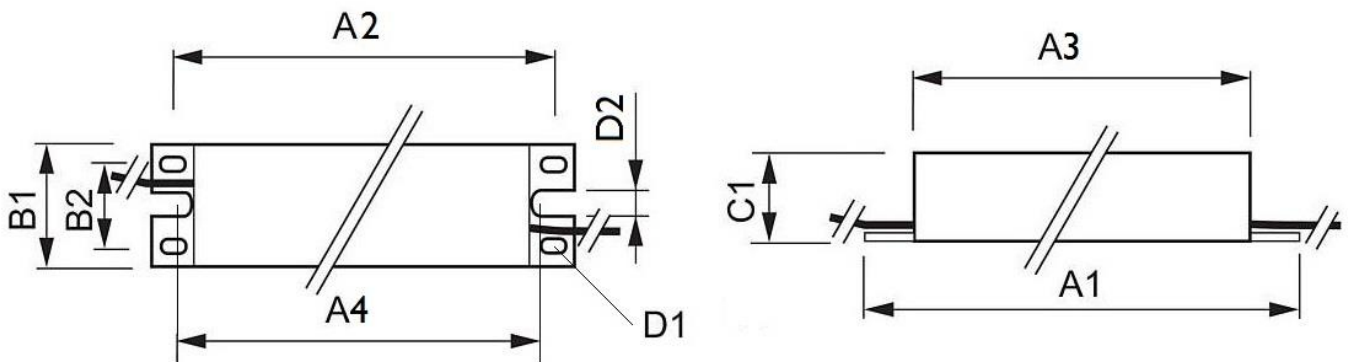
- IEC: driver housing may be grounded
- UL/CSA: driver housing must be grounded
- Install in accordance with national and local electrical codes and regulations

Insulation

Insulation	Mains	Housing	LED
Mains		Double	SELV (double)
Housing	Double		Basic
LED	SELV (double)	Basic	

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)	26.6	mm	
Fixing hole diameter (D1)	6.35	mm	Screw: M6 . Use toothed washer for proper grounding
Fixing hole diameter (D2)	8.2	mm	Screw: M6 . Use toothed washer for proper grounding
Weight	640	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	
Tcase-max	+90	°C	Max. steady-state Tcase
Tcase-life	-30 ... +80	°C	For rated driver lifetime
Maximum housing temperature	120	°C	In case of failure
Relative humidity	10 ... 90	%	Non-condensing
Ingress Protection *	IP20		
Noise and hum	≤ 20	dB	

*: The LED Power Driver is intended for built-in use only. 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.

Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-30 ... +80	°C	
Relative humidity	5 ... 95	%	Non-condensing

Lifetime

Specification item	Value	Unit	Condition
Rated driver lifetime	50,000	hours	$T_{case} \leq T_{case-life}$. Maximum failures = 10%. See graph.

Features

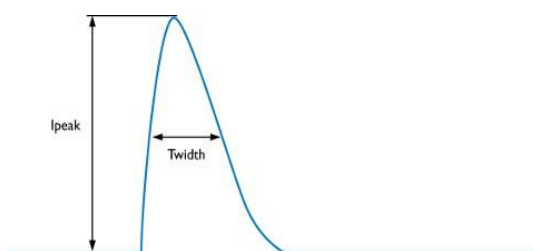
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Short-circuit protection	Yes		Hiccup mode, automatic recovering
Overvoltage protection	Yes		27 ... 35V, hiccup mode
Overpower protection	Yes		Automatic recovering
Overheating protection	Yes		Automatic recovering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

Certificates and standards

Specification item	Value
Approval marks	CE / ENEC / CB / VDE-EMC / VDE-S / VDE-Household / RCM / CSA / cUL / CCC
Safety Standards	Lighting: EN 61347-1:2015 (IEC 61347-1:2015), EN 61347-2-13:2014 (IEC 61347-2-13:2014), UL8750, CSA 250.13; 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 Standards	Emissions: EN55015:2013 + A1:2015, EN61000-3-2 Class C, (>60% load):2014, EN61000-3-3:2013, FCC 47CFR15 Class B, GB/T 17743-2017 Immunity: EN61000-4-2, 3, 4, 5, 6, 8, 11, EN61547-1:2009, GB 17625.1-2012
Performance Standards	IEC 62384:2006 + A1:2009

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak} (typ)	30	A	Input voltage 240Vac
Inrush current T_{width} (typ)	400	μ s	Input voltage 240Vac, measured at 50% I_{peak}
Max. recommended number of drivers	9	pcs	MCB 16A B type, mains impedance 200m Ω + 400 μ H



MCB	Rating	Relative number of 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 and type

Driver touch current

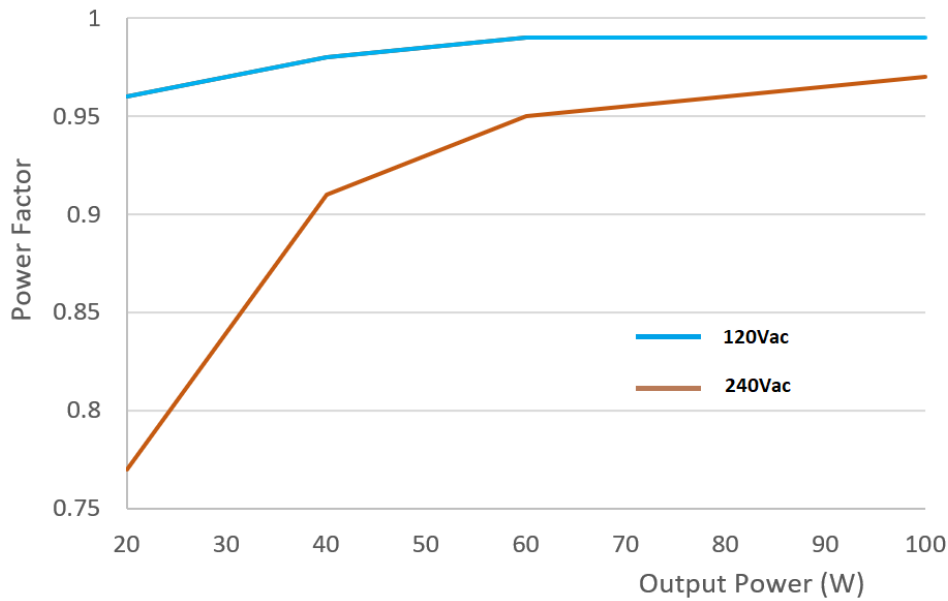
Specification item	Value	Unit	Condition
Touch current (typ)	0.6	mA _{peak}	Acc. IEC61347-1 at 240Vac 60Hz LED module contribution not included

Surge immunity

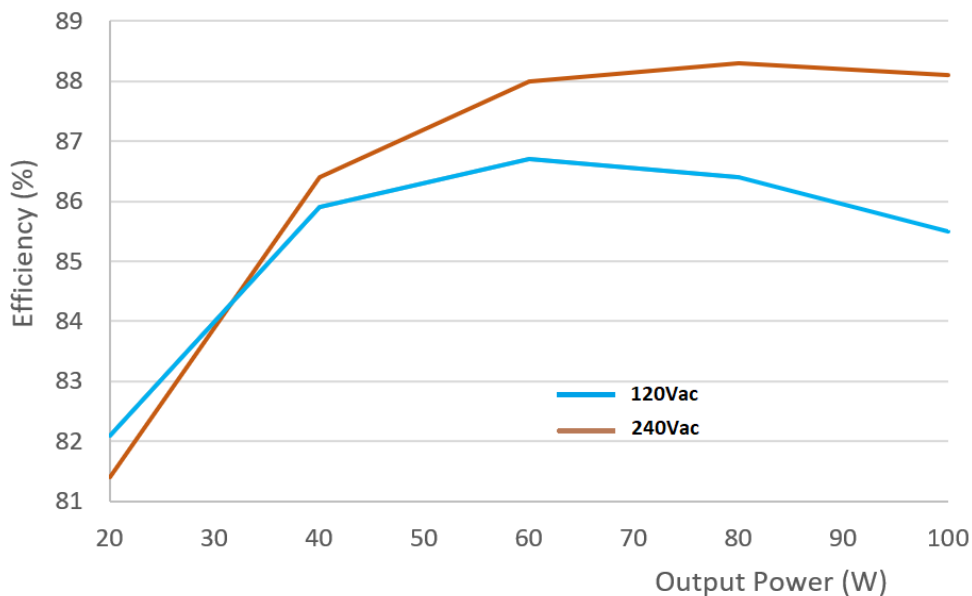
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1 / 0.5	kV / kA	L-N, acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	LN - GND, acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (diff. mode)	1.5	kV	L-N, acc. ANSI/IEEE C62.41.1, combination wave, 2 Ohm
Mains surge immunity (comm. mode)	6	kV	L/N - GND, acc. ANSI/IEEE C62.41.1, ring wave, 30 Ohm

Graphs

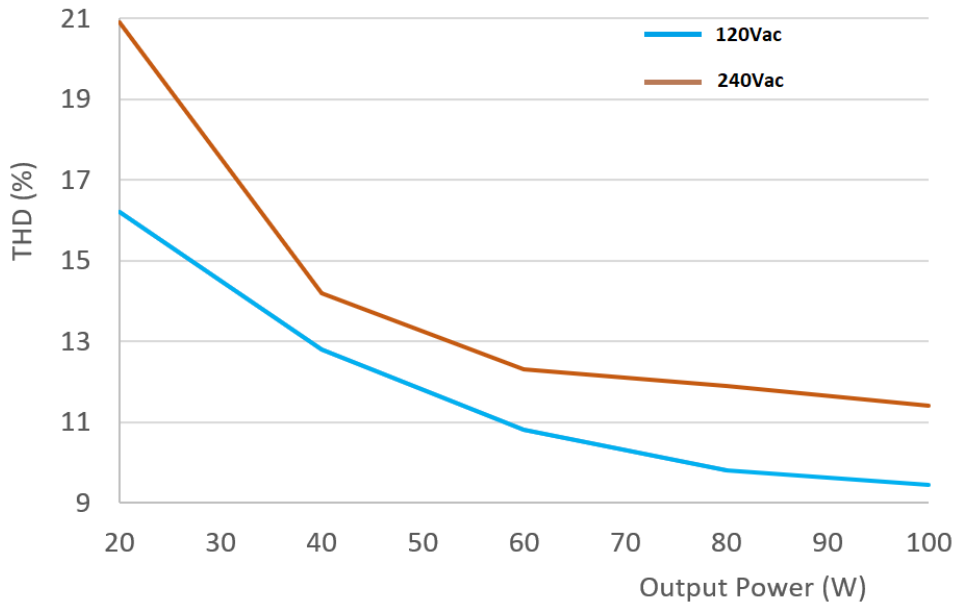
Power factor versus output power



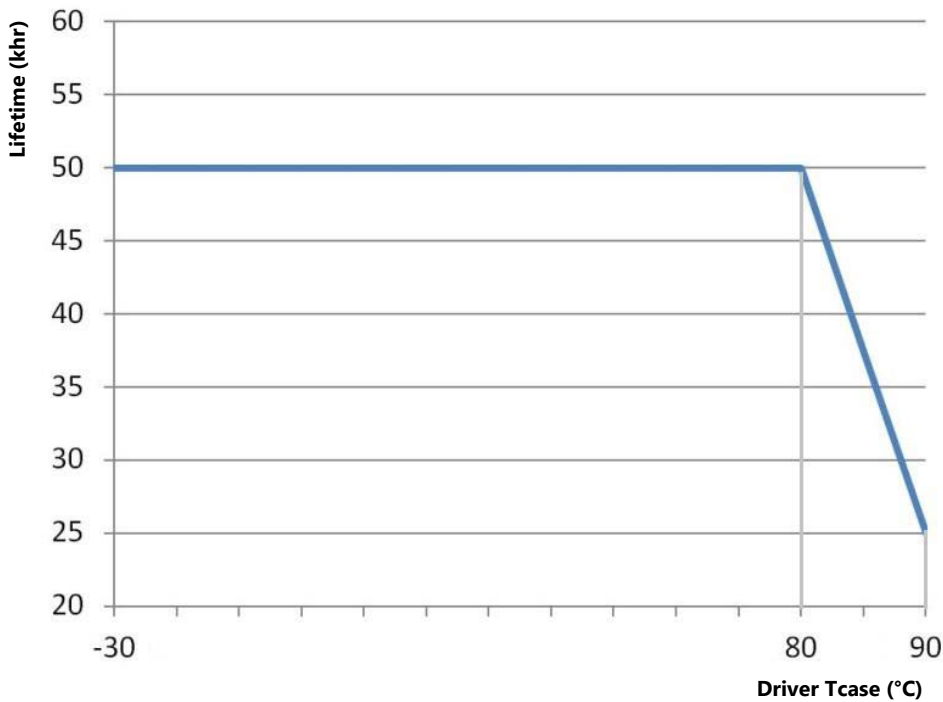
Efficiency versus output power



THD versus output power



Driver lifetime versus Tc temperature



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Date of release: December 4, 2019 v2

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