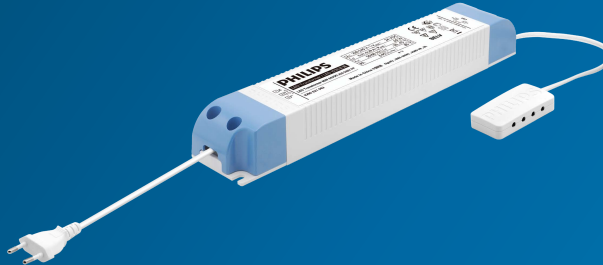


# PHILIPS

LED Transformers

Preliminary datasheet



## LED Transformers

### LED Transformer 60W 24V 120V PP

#### Product description

Philips full-electronic constant voltage LED Transformers are designed to operate 24VDC LED solutions used in general 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

- Class 2 output, ensuring safe assembly and maintenance
- Easy to install with simple parallel wiring
- High reliability

#### Features

- Stable output voltage
- Wide ambient temperature range
- Protection against overpower and overvoltage
- Output short-circuit shutdown feature with automatic restart

#### Applications

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	Unit	Condition
Rated input voltage range	120	Vac	Performance
Rated input voltage range	108 ... 132	Vac	Operational safety
Rated input frequency	50 ... 60	Hz	Performance
Rated input frequency	45 ... 66	Hz	Operational safety
Rated input current	0.59	A	120Vac, @ rated output power
Rated input power	70	W	120Vac, @ rated output power
Power factor	0.98		120Vac, @ rated output power.
Total harmonic distortion	13	%	120Vac, @ rated output power.
Efficiency (typ)	86	%	120Vac, @ rated output power.

## Electrical output data

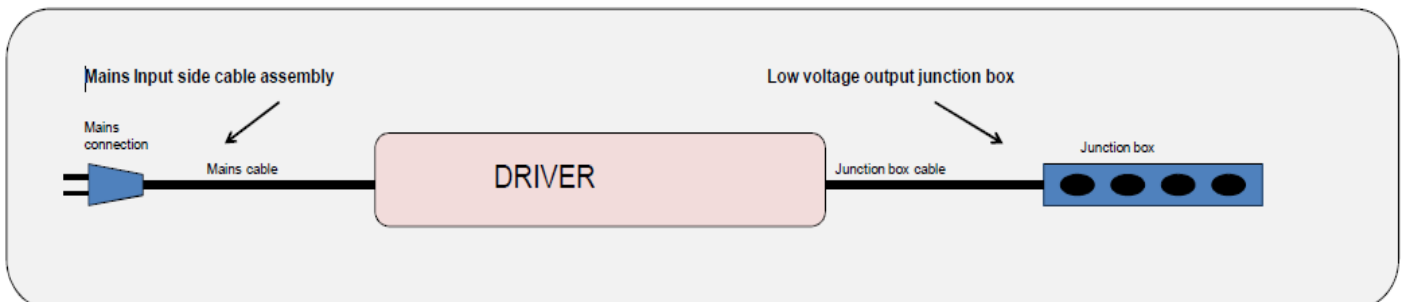
Specification item	Value	Unit	Condition
Regulation method	Constant Voltage		Rated output voltage = 24VDC
Output voltage range	22.8 ... 25.2	Vdc	
Output current range	0.1 ... 2.5	A <sub>dc</sub>	
Output voltage ripple	< 2	V <sub>pp</sub>	
Rated output power	60	W	
Line regulation	< 1	%	
Load regulation	< 3	%	
Turn-on delay *	≤ 1	s	Integrate engine 24VDC module @230Vac with full load < 0.5s
Output voltage rise time	≤ 50	ms	
Hold-up time	≥ 10	ms	

## Logistical data

Specification item	Value
Product name	LED Transformer 60W 24V 120V PP
Order code	695125 00
Logistic code 12NC	9290 021 06080
Pieces per box	20

## Wiring & Connections

Specification item	Value	Unit	Condition
Input cable cross-section	2 x 18	AWG	Length: 5ft, cUL listed with NEMA 1-15P polarized 120V plug
IVoltage/current rating	125/10	V/A	
Input wire strip length	6 ... 7	mm	
Output cable cross-section	2 x 18	AWG	Length: 7in, cUL listed
Junction box	8	Flod	
Maximum output cable length	8	ft	FCC47CFR15: between driver and LED module

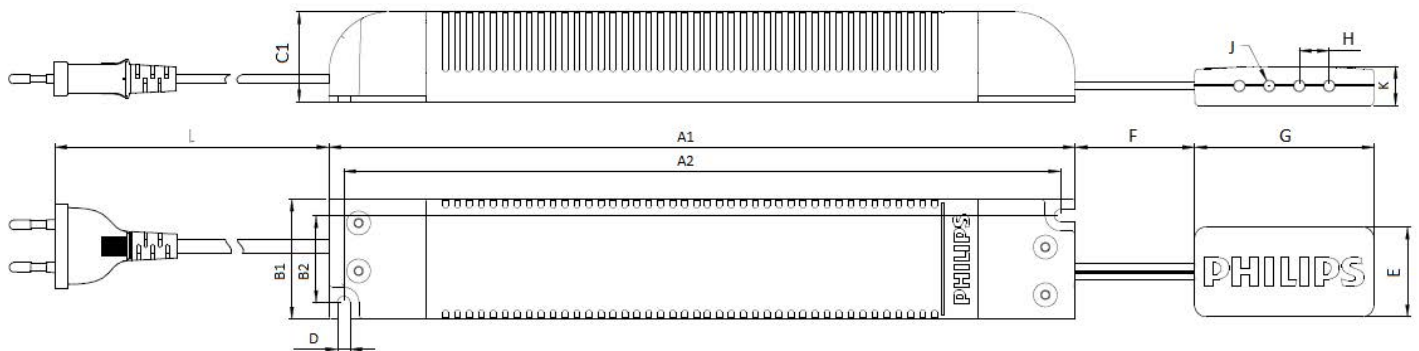


## Insulation

Insulation	Mains	LED
Mains		SELV
LED	SELV	

## Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	250.0	mm	
Width (B1)	40.0	mm	
Height (C1)	30.0	mm	
Fixing hole distance (A2)	240.0	mm	Fixing hole diameter (D): 4.1 mm
Fixing hole distance (D)	4.2	mm	
Weight	390/13.8	gram/oz	
Junction box Length (G)	60.0	mm	
Junction box Width (E)	30.0	mm	
Junction box Height (K)	13.0	mm	
Cable hole diameter (J)	4.0	mm	
Cable hole distance (H)	10.0	mm	
Output cable Length (F)	7	in	
Input cable Length (L)	5	ft	



## Operational temperatures and humidity

Specification item	Value	Unit	Condition
Driver ambient temperature	-20 ... +45	°C	At rated output power. Higher ambient temperature allowed as long as Tcase-max is not exceeded.
Tcase-min	-20	°C	
Tcase-max	+85	°C	Max. steady-state Tcase
Tcase-life	+75	°C	For rated driver lifetime
Maximum housing temperature	110	°C	In case of failure
Relative humidity	10 ... 90	%	Non-condensing
Ingress Protection *	IP20		
Noise and hum	Class A		

\*: The LED Power Driver is indoor use only. It is not allowed to be exposed to the elements like snow, water and ice. Exposure will 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	-20 ... +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

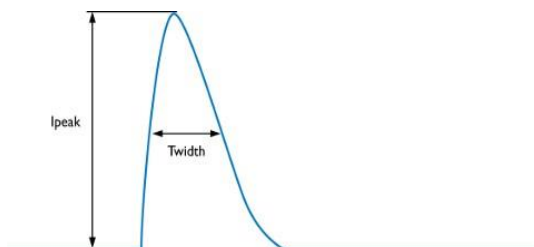
Specification item	Value	Remark	Condition
Open load protection	Yes		$U_{out}$ (open circuit) = 26V max.
Short-circuit protection	Yes		Hiccup mode, automatic recovering
Overpower protection	Yes		Automatic recovering
Overheating protection	Yes		Automatic recovering
Hot wiring	Yes		

## Certificates and standards

Specification item	Value
Approval marks	cUL listed / cUL Class 2

## Inrush current

Specification item	Value	Unit	Condition
Inrush current $I_{peak}$ (typ)	tbd	A	Input voltage 120Vac
Inrush current $T_{width}$ (typ)	tbd	$\mu s$	Input voltage 120Vac
Max. recommended number of drivers	tbd	pcs	MCB 16A B type



- Specified inrush current values apply for mains impedance of  $200m\Omega + 400\mu H$
- $T_{width}$  specified at 50% of  $I_{peak}$
- Driver is compliant per NEMA 410

MCB	Rating	Relative number of drivers*
B	6A	37%
B	10A	63%
B	13A	81%
B	16A	<b>100%</b>
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%

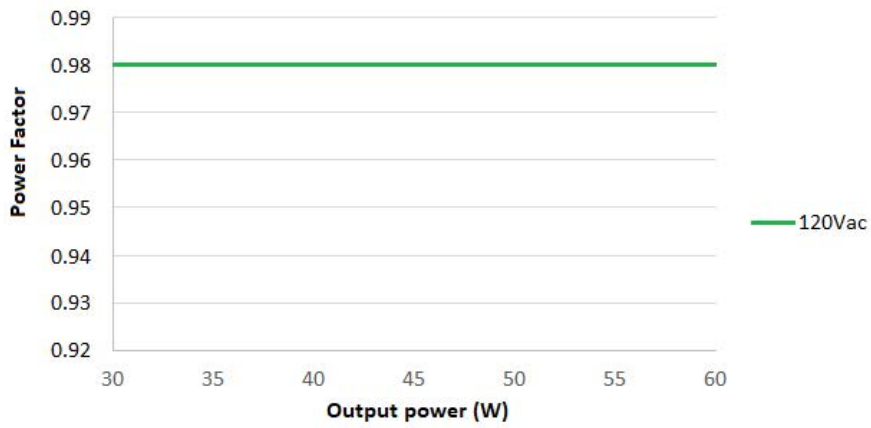
\* : please check that cable cross sectional area corresponds with MCB rating and type

## Surge immunity

Specification item	Value	Unit	Condition
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

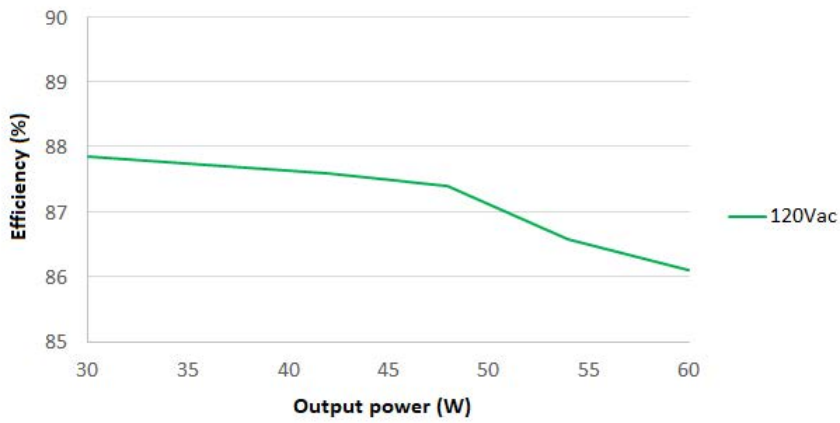
### Power factor versus output power

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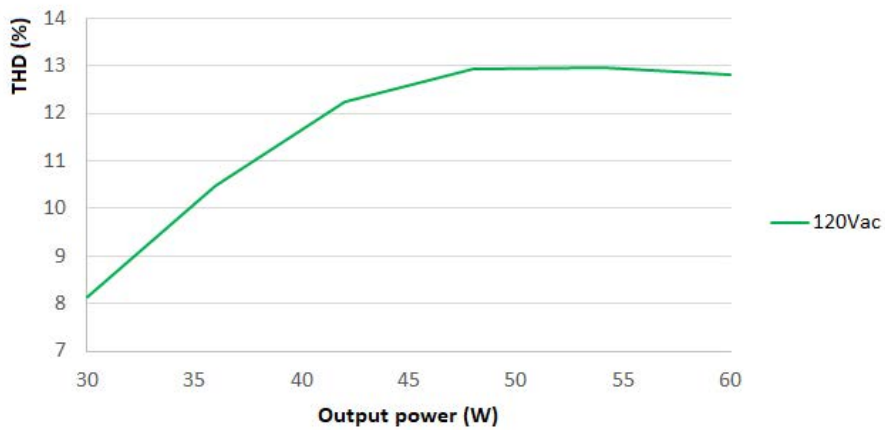
### Efficiency versus output power

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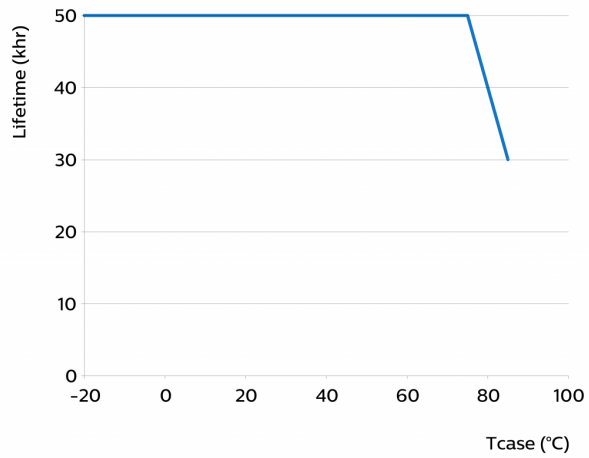
### THD versus output power

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## Driver lifetime versus Tc temperature

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