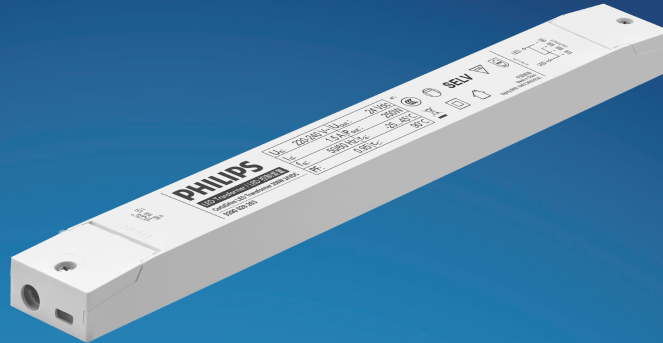


PHILIPS

CertaDrive

LED Transformer



Datasheet

LED Transformers

CertaDrive LED Transformer 250W 24VDC

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

- 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
- 30,000 hours lifetime

Features

- Independent use for Insulation Class I and II applications
- Global approbations and certifications
- Stable output voltage
- Wide ambient temperature range
- Protection against overpower, overvoltage and overheating
- 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	Unit	Condition
Rated input voltage range	220 ... 240	Vac	Performance
Rated input voltage range	198 ... 264	Vac	Operational safety
Rated input frequency	50 ... 60	Hz	Performance
Rated input frequency	45 ... 66	Hz	Operational safety
Rated input current	15	A	
Rate Input power	272	W	
Power factor	0.95		
Total harmonic distortion	7.18	%	230Vac, @ rated output power
Efficiency (typ)	91.9	%	230Vac, @ 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 5.21... 10.42A
Output current range	10.42	Adc	For LED module only
Output voltage ripple	< 480	mVp-p	
Rated output power	250	W	
Line regulation	< 1	%	
Load regulation	< 3	%	
Turn-on delay	< 0.5	s	
Output voltage rise time	< 50	ms	
Hold-up time	> 10	ms	

Electrical data controls input

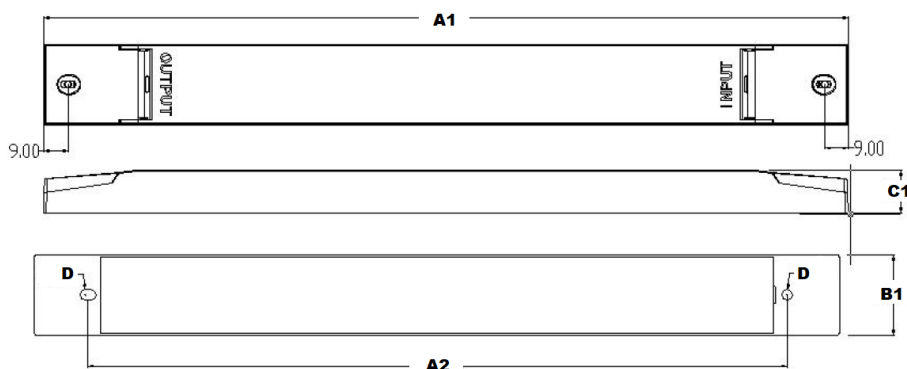
Specification Item	Value	Unit	Condition
Control method			
Dimming range			

Insulation

Insulation	Mains	LED	PE
Mains		SELV (double)	Reinforced
LED	SELV (double)		Basic
PE	Reinforced	Basic	

Dimensions and weight

Specification Item	Value	Unit	Condition
Length (A1)	400	mm	
Width (B1)	40	mm	
Height (C)	22	mm	
Fixing hole distance (A2)	360.5	mm	Fixing hole diameter (D): 4.1mm
Weight	540	gram	



Operational Temperature 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	+90	°C	Max. steady-state Tcase
Tcase-life	-20 ...+80	°C	For rated driver lifetime
Maximum housing temperature	130	°C	In case of a failure
Relative humidity	10 ... 90	%	Non-condensing
Ingress Protection*	IP20		
Noise and hum	≤20	dB	

*: The LED Transformer is primarily intended for independent 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.

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	30,000	Hours	$T_{case} \leq T_{case-life}$. Maximum failures = 10%. See graph.

Features

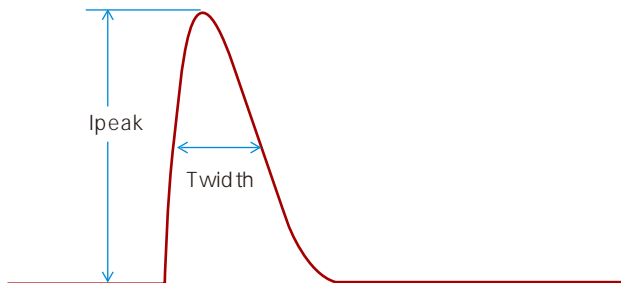
Specification Item	Value	Remark	Condition
Open Load Protection	Yes		U_{out} (open circuit) = 26V max.
Short-Circuit Protection	Yes		Hiccup mode, automatic recovering
Overpower Protection	Yes		Automatic recovering
Overheating Protection	Yes		Automatic recovering
Hot Wiring	Yes		
Suitable Insulation Class Applications	I and II		per IEC60598

Certificates and standards

Specification Item	Value
Approval Marks	F / CCC / SELV / Independent / Double insulation

Inrush current

Specification Item	Value	Unit	Condition
Inrush Current I_{peak} (typ)	17.6	A	Input voltage 240Vac
Inrush Current T_{width} (typ)	665	μs	Input voltage 240Vac, measured at 50% I_{peak}
Max. Recommended Number of Drivers	6	pcs	MCB 16A B type, mains impedance $200m\Omega + 400\mu H$



MCB	Rating	Relative number of LED drivers*
B	6A	37%
B	10A	63%
B	13A	81%
B	16A	100%
B	20A	125%
B	25 A	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

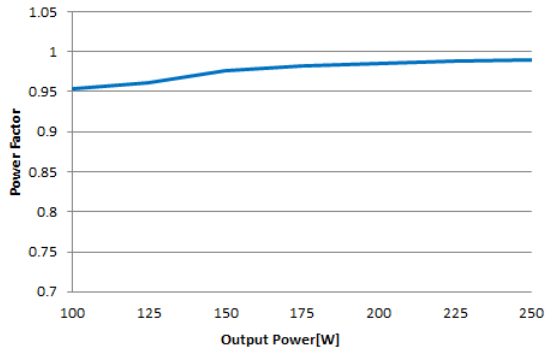
Specification Item	Value	Unit	Condition
Touch current	<0.7	mA_{peak}	Acc. IEC61347-1at 240Vac 60Hz LED module contribution not included

Surge Immunity

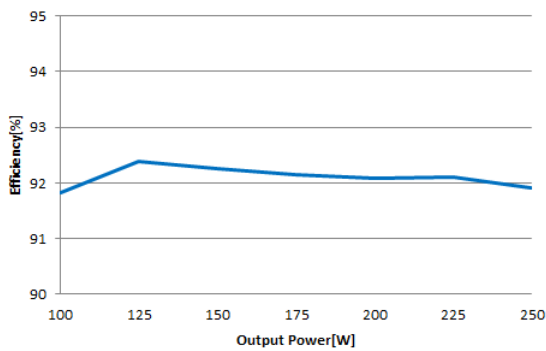
Specification Item	Value	Unit	Condition
Mains surge immunity (diff. mode)	2	kV	L - N, acc. IEC61000-4-5. 2 Ohm, 12/50us, 8/20us
Mains surge immunity (com. mode)	2	kV	LN - GND, acc. IEC61000-4-5. 2 Ohm, 12/50us, 8/20us

Graphs

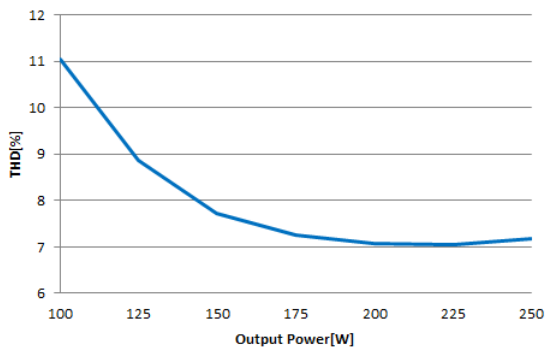
Power factor versus output power



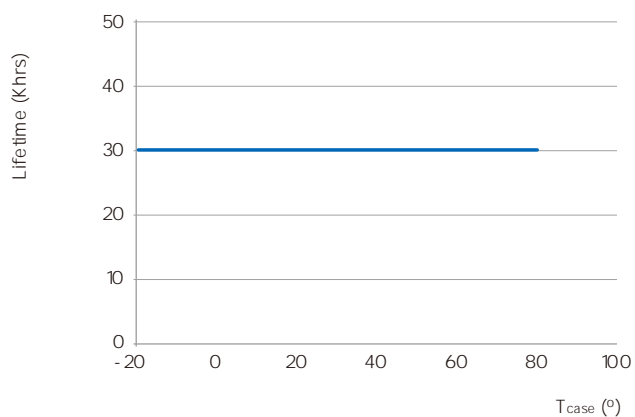
Efficiency versus output power



THD versus output power



Driver lifetime versus Tc temperature



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