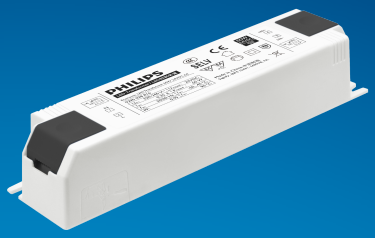
PHILIPS

CertaDrive

LED Transformers



Datasheet

Economic LED Transformer 60W 24VDC G2

9290 038 81680

Philips full-electronic constant voltage Economic LED Transformers are designed to operate 24VDC LED solutions used in general built-in and independent applications such as non-center piece lighting, retail display lighting and linear accent lighting. They are specifically designed to ensure good performance with high cost-effectiveness.

Features

- Built-in and independent use for Insulation Class II applications
- 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
- High robustness, offering peace of mind and lower maintenance costs
- Easy to design-in and install with parallel wiring
- Global approvals

Application

- Retail display lighting
- Shelf lighting
- Cove lighting
- Façade accent lighting

Logistical data

Specification item	Value
Product name	Economic LED Transformer 60W 24VDC G2
Logistic code 12NC	9290 038 81680
Pieces per box	60
Weight	194 gram

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	220...240	V_{ac}	Performance range
Rated input voltage	230	V_{ac}	
Rated input frequency	50...60	Hz	Performance range
Rated input current	0.35	A	@ rated output power @ rated input voltage
Rated input power	69.0	W	@ rated output power @ rated input voltage
Power factor	0.95		@ rated output power @ rated input voltage
Total harmonic distortion	20	%	@ rated output power @ rated input voltage
Efficiency	88.0	%	@ rated output power @ rated input voltage
Input voltage AC	198...264	V_{ac}	Operational range
Input frequency AC	47...63	Hz	Operational range
Isolation input to output	SELV		

Electrical output data

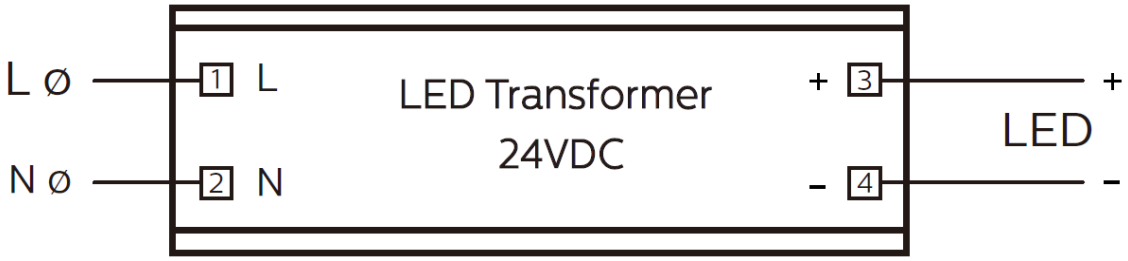
Specification item	Value	Unit	Condition
Regulation method	Constant Voltage		
Output voltage	24	V_{dc}	Output voltage range: 22.8 ... 25.2VDC @ output current range 1.5 ... 2.5A
Output current	125...2500	mA	
Output voltage ripple	≤ 12	%	
Output power	3.0...60.0	W	
Line regulation	≤ 3	%	
Load regulation	≤ 5	%	
Turn-on delay	≤ 0.5	s	
Output voltage rise time	≤ 100	ms	

Control interfaces

Specification item	Value	Unit	Condition
Control method	Fixed		

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.75...1.5 / 18...16	mm^2 / AWG	solid / stranded wire. Up to 2.5mm^2 for built in application only.
Input wire strip length	8...10	mm	
Output wire cross-section	0.5...1.5 / 20...16	mm^2 / AWG	solid / stranded wire
Output wire strip length	6...10	mm	
Maximum cable length	1	m	Total cable length between driver and LED modules per CISPR15

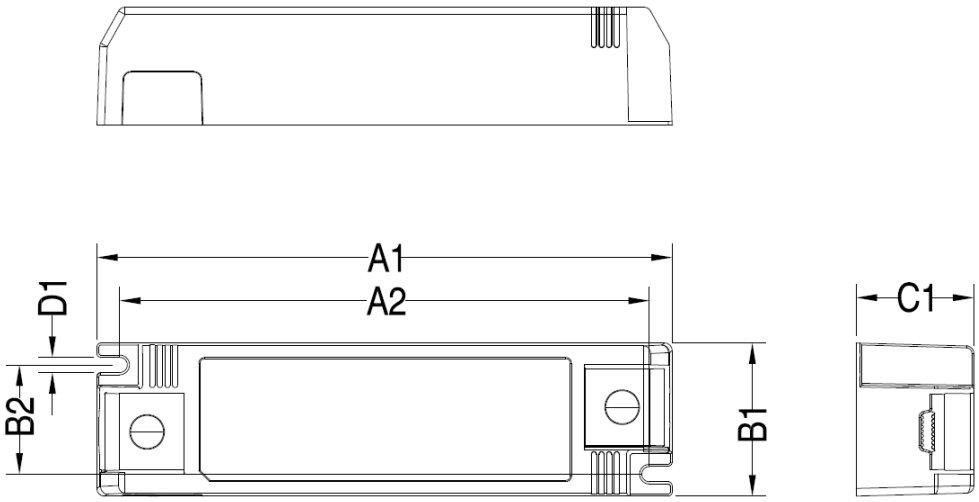


Isolation

Insulation per IEC61347-1	Input	Output
Input	-	SELV
Output	SELV	-

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	151.5	mm	± 1
Mounting hole distance (A2)	139.5	mm	± 1
Width (B1)	40.2	mm	± 0.5
Width (B2)	28.7	mm	± 0.5
Height (C1)	31	mm	± 0.5
Mounting hole diameter (D1)	4	mm	± 0.5
Weight	194	gram	

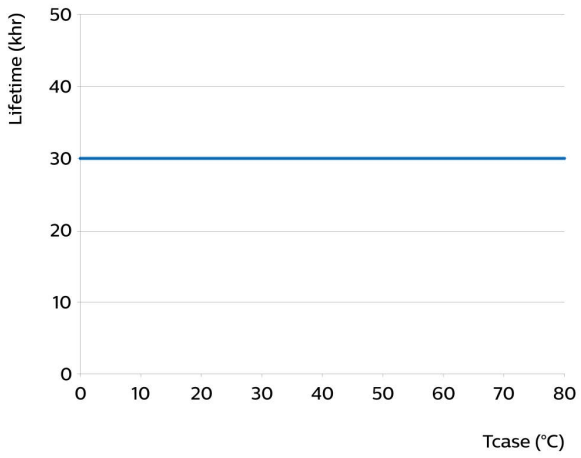


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20...+45	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded
Tcase-max	90	°C	Maximum temperature measured at T_{case}-point
Tcase-life	80	°C	Measured at T_{case}-point
Relative humidity	10...90	%	Non-condensing

Lifetime

Specification item	Value	Unit	Condition
Driver lifetime	30,000	hours	Measured temperature at Tcase-point is Tcase-life. Maximum failures = 10%



Maximum failures = 10%

Storage temperature and humidity

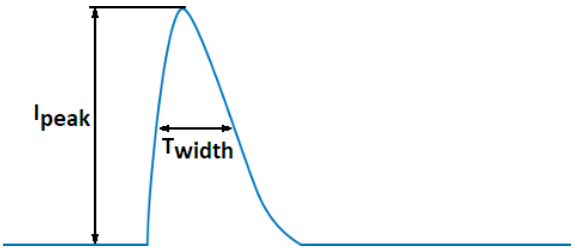
Specification item	Value	Unit	Condition
Ambient temperature	-20...+85	°C	
Relative humidity	5...95	%	Non-condensing

Non-programmable features

Specification item	Value		Condition
Open load protection	Yes		
Short circuit protection	Yes		Hiccup mode, automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	Yes		No load power < 0.5W
Suitable for fixtures with protection class	II		per IEC60598

Inrush current

Specification item	Value	Unit	Condition
Inrush current	24	A	Input voltage 230V
Inrush peak width	20	µs	Input voltage 230 V, measured at 50% height
Drivers / MCB 16A type B @230V AC	≤ 55	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 Touch Current (ins. Class II)	0.7	mA peak	. LED module contribution not included

Surge immunity

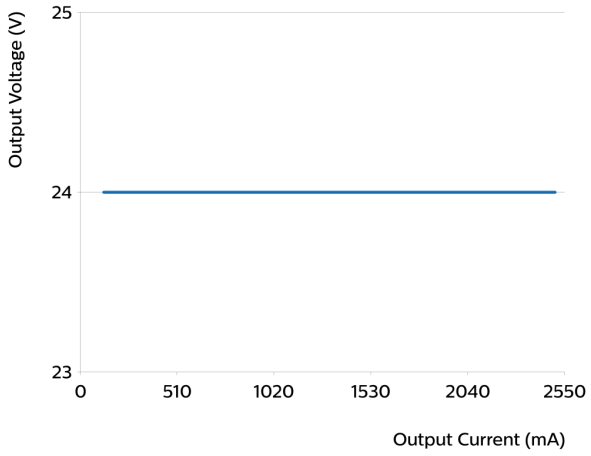
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	L-N acc. IEC61000-4-5. 2 Ohm

Application Info (Approbation)

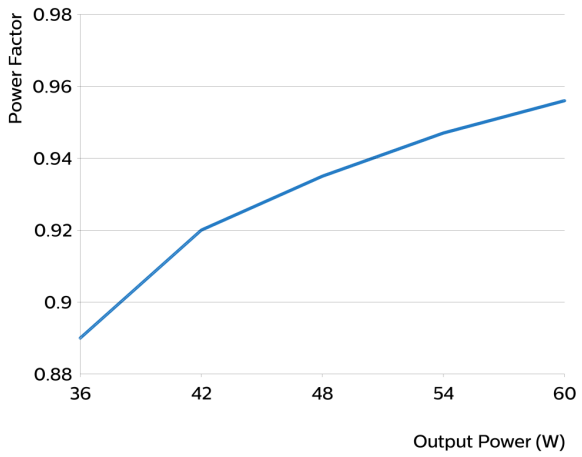
Specification item	Value
Approval marks and Certifications	CB / CCC / CE / SELV
Ingress Protection classification (IP)	20
Application	Indoor Constant Voltage
Mounting Type	Built-in / Independent

Graphs

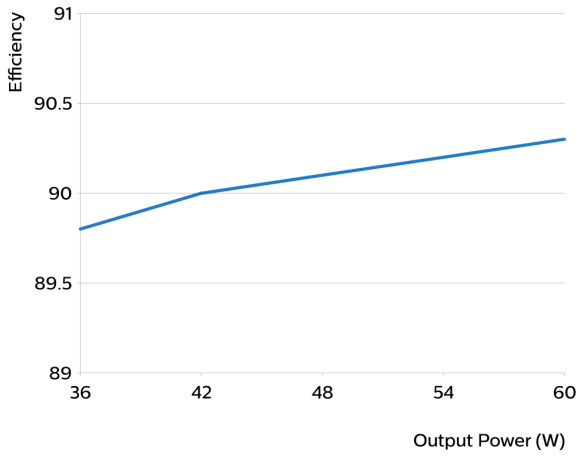
Operating window



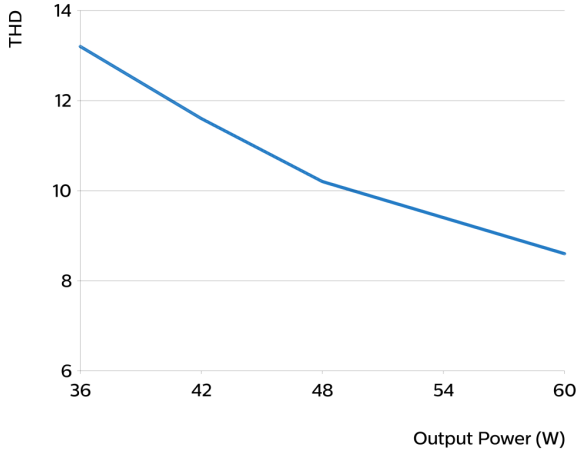
Power factor versus output power



Efficiency versus output power



THD versus output power



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