

# PHILIPS

## CertaDrive

### LED Transformers



## Datasheet

### Economic LED Transformer 60W 24VDC G3

9290 038 81601

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-effective.

#### 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 G3
Logistic code 12NC	9290 038 81601
Pieces per box	60
Weight	194 gram

## Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	220...240	V <sub>ac</sub>	Performance range
Rated input voltage	230	V <sub>ac</sub>	
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 <sub>ac</sub>	Operational range
Input frequency AC	47...63	Hz	Operational range
Isolation input to output	SELV		

## Electrical output data

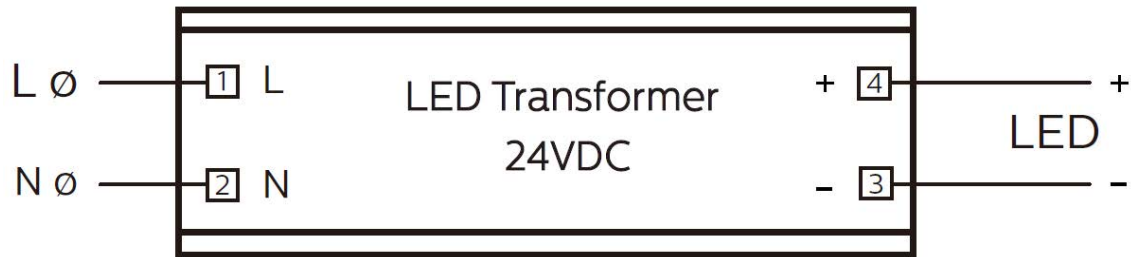
Specification item	Value	Unit	Condition
Regulation method	Constant Voltage		
Output voltage	24	V <sub>dc</sub>	Output voltage range: 22.8 ... 25.2VDC @ output current range 1.5 ... 2.5A
Output current	125...2500	mA	
Output voltage ripple	≤ 2	%	
Output power	3.0...60.0	W	
Line regulation	≤ 1	%	
Load regulation	≤ 3	%	
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...2.5 / 18...14	mm² / AWG	solid / stranded wire
Input wire strip length	6...7	mm	
Output wire cross-section	0.5...2.5 / 20...14	mm² / AWG	solid / stranded wire
Output wire strip length	6...7	mm	
Maximum cable length	1	m	Total cable length between driver and LED modules per CISPR15

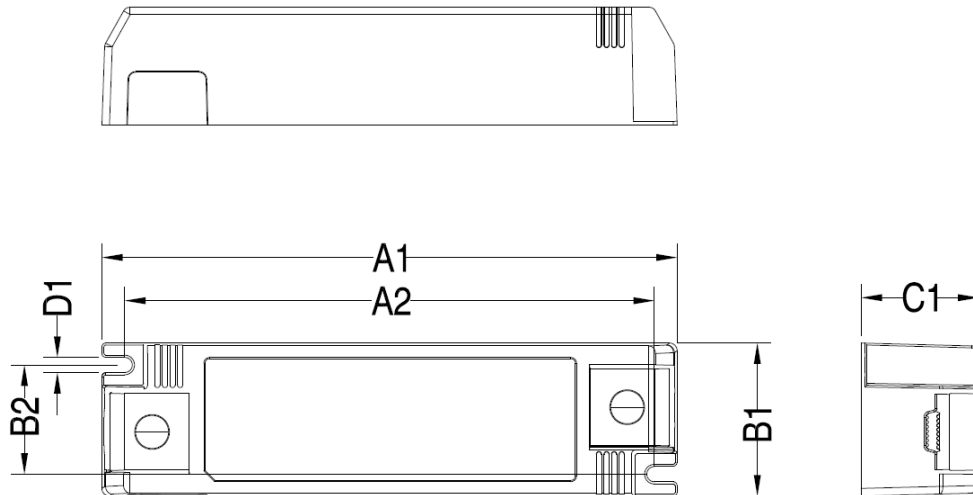


Isolation

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	

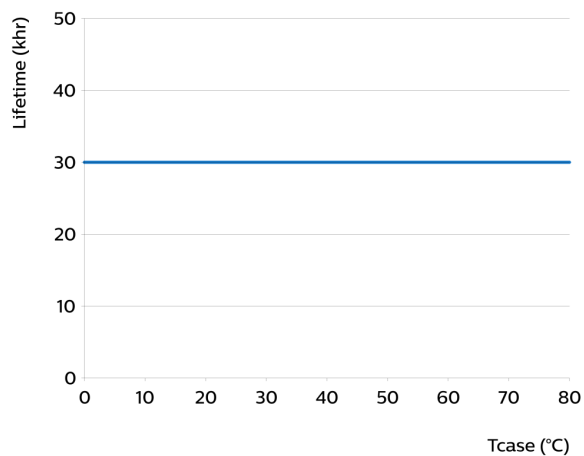


## Operational temperatures and humidity

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 Tcase-point
Tcase-life	80	°C	Measured at Tcase-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

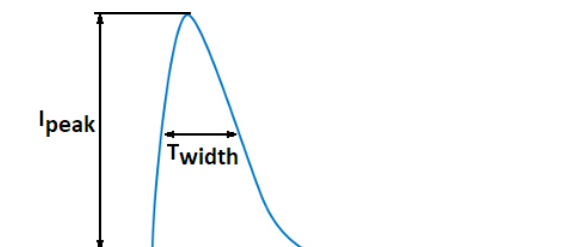
Specification item	Value		Condition
Open load protection	Yes		
Short circuit protection	Yes		Hiccup mode, automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	Yes		No load power < 0.50W
Suitable for fixtures with protection class	II		per IEC60598

## Inrush current

Specification item	Value	Unit	Condition
Inrush current	42	A	Input voltage 230V
Inrush peak width	158	μs	Input voltage 230V, measured at 50% height
Drivers / MCB 16A type B @230V AC	≤ 17	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

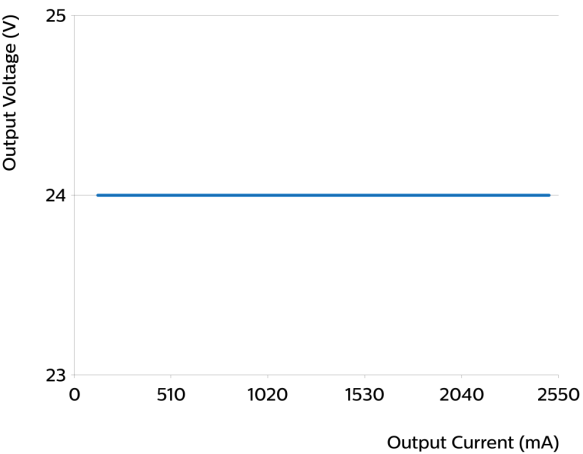
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	L-N acc. IEC61000-4-5. 2 Ohm

## Application Info (Approbation)

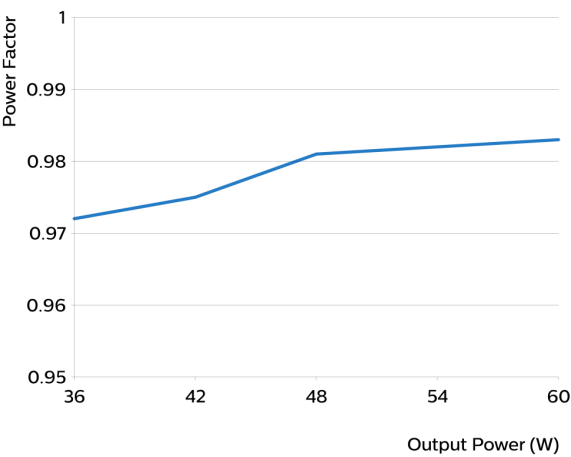
Specification item	Value
Approval marks and Certifications	CB / CCC / CE / SELV
Ingress Protection classification (IP)	20
Application	Indoor Constant Voltage
Mounting Type	Built-in / Independent

Graphs

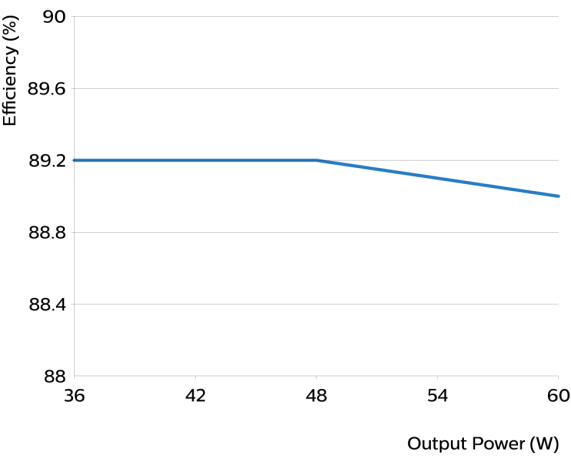
Operating window



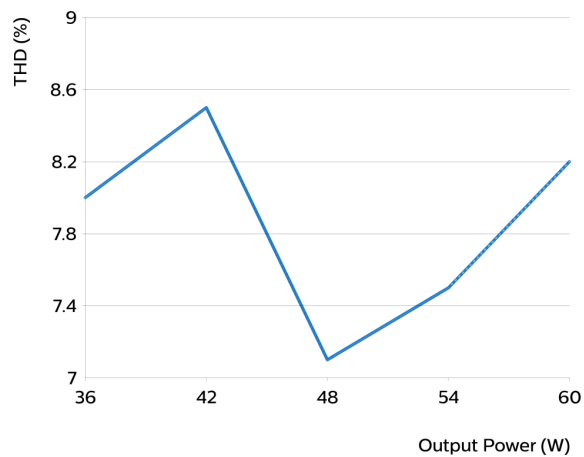
Power factor versus output power



Efficiency versus output power



## THD versus output power



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