PHILIPS

CertaDrive

LED driver



Datasheet

CertaDrive LPF G4

CertaDrive 6W 0.15A 40V LPF I 230V

9290 034 60380

Affordable and reliable LED Drivers

Philips CertaDrive LED Point drivers are designed to operate with LED COB solutions used both in built-in and independent applications such as down light, spot light and track light. CertaDrive drivers have common features such as low ripple output current, single output current and 30,000 hours lifetime. They are specifically designed to ensure great EMI performance, high robustness and safe usage.

Features

- Class II application
- Built in and independent
- Low Power Factor
- Low Ripple less than 5%
- 30,000 hours lifetime

Benefits

- Provides options for different luminaire designs
- Great EMI performance for easy design-in
- Optimized cost/performance ratio
- Peace of mind with proven reliability

Application

- Down lighting
- Spot lighting
- Track lighting

Logistical data

Specification item	Value
Product name	CertaDrive 6W 0.15A 40V LPF I 230V
Logistic code 12NC	9290 034 60380
Pieces per box	60

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	0.06	A	@ rated output power @ rated input voltage
Rated input power	7.1	W	@ rated output power @ rated input voltage
Power factor	0.5C		@ rated output power @ rated input voltage
Total harmonic distortion	20	%	@ rated output power @ rated input voltage
Efficiency	84.0	%	@ rated output power @ rated input voltage @max. Uout
Input voltage AC	198…264	V_{ac}	Operational range
Input frequency AC	47.5…63	Hz	Operational range
Isolation input to output	SELV		

Electrical output data

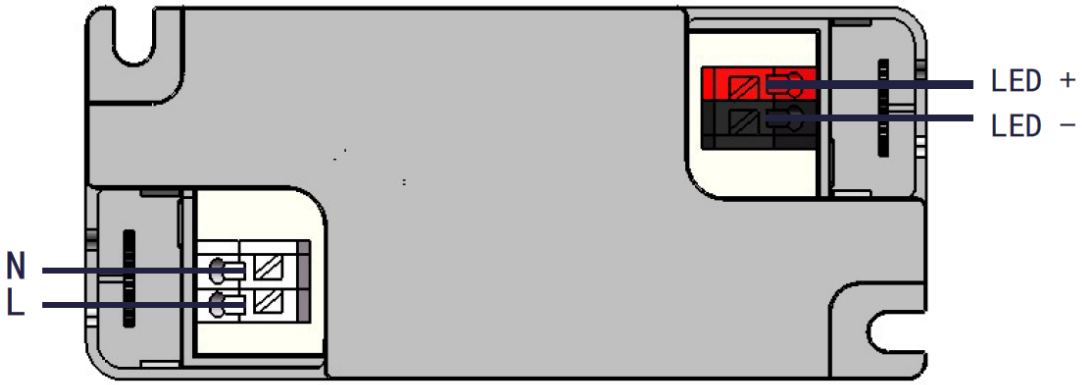
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	30…40	V_{dc}	
Output voltage max.	60	V	Maximum output voltage (rms)
Output current	0.15	A	
Output current tolerance ±	10	%	@full load
Output current ripple LF	≤ 5	%	Ripple = peak / average, < 3kHz
Output current ripple HF	≤ 15	%	Ripple = peak to average total
Output P_{st}^{LM}	≤ 0.1		In entire operating window
Output SVM	≤ 0.1		In entire operating window
Output power	4.5…6.0	W	

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	Fixed		

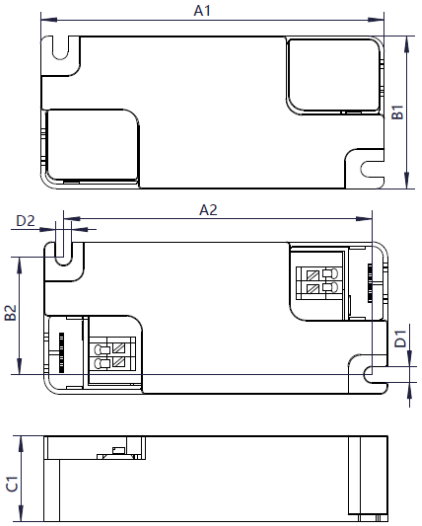
Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.75…1.5 / 18…16	mm^2 / AWG	solid / stranded wire
Input wire strip length	8…9	mm	
Output wire cross-section	0.5…1.5 / 20…16	mm^2 / AWG	solid / stranded wire
Output wire strip length	8…9	mm	
Maximum cable length	0.6	m	Total length of wiring including LED module, one way



Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	88	mm	
Mounting hole distance (A2)	79	mm	
Width (B1)	39	mm	
Width (B2)	30	mm	
Height (C1)	22	mm	
Mounting hole diameter (D1)	4	mm	
Mounting hole diameter (D2)	4	mm	
Weight	40	gram	

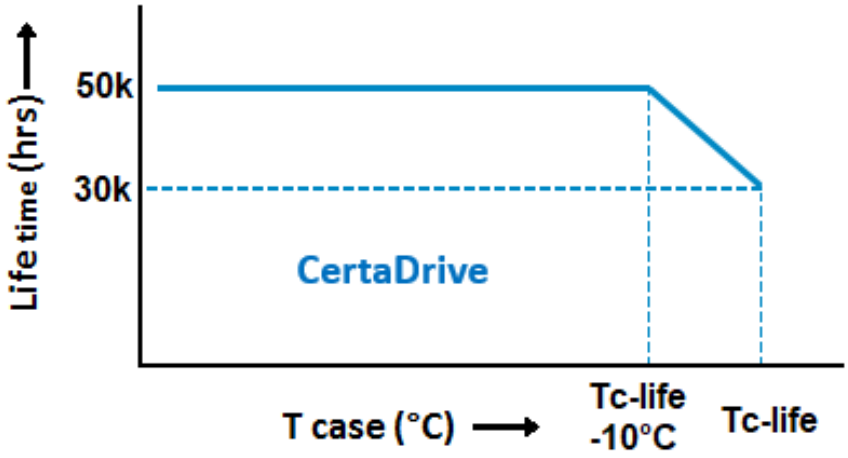


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20…+45	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded
Tcase-max	75	°C	Maximum temperature measured at T_{case}-point
Tcase-life	65	°C	Measured at T_{case}-point
Maximum housing temperature	130	°C	In case of a failure, inherent by design
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%
Driver lifetime	50,000	hours	Measured temperature at Tcase-point is Tcase-life -10 degrees. Maximum failures = 10%



Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-25...+85	°C	
Relative humidity	5...95	%	Non-condensing

Programmable features

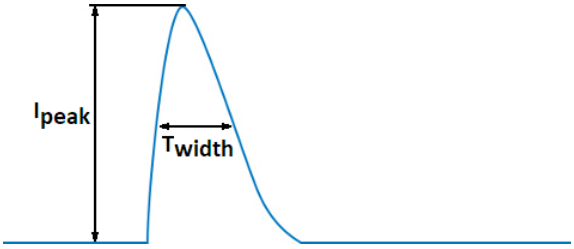
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)		150 mA	Fixed output current

Features

Specification item	Value		Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	II		per IEC60598

Inrush current

Specification item	Value	Unit	Condition
Inrush current	10.5	A	Input voltage 230V
Inrush peak width	48	µs	Input voltage 230 V, measured at 50% height
Drivers / MCB 16A type B	≤ 115	pcs	Indicative value at 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	Acc. IEC61347-1. LED module contribution not included

Surge immunity

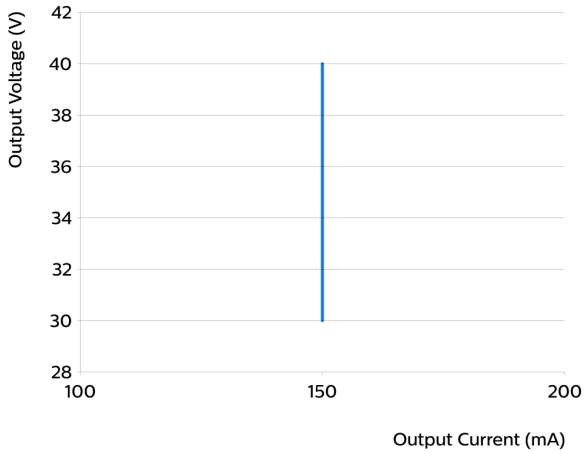
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Application Info

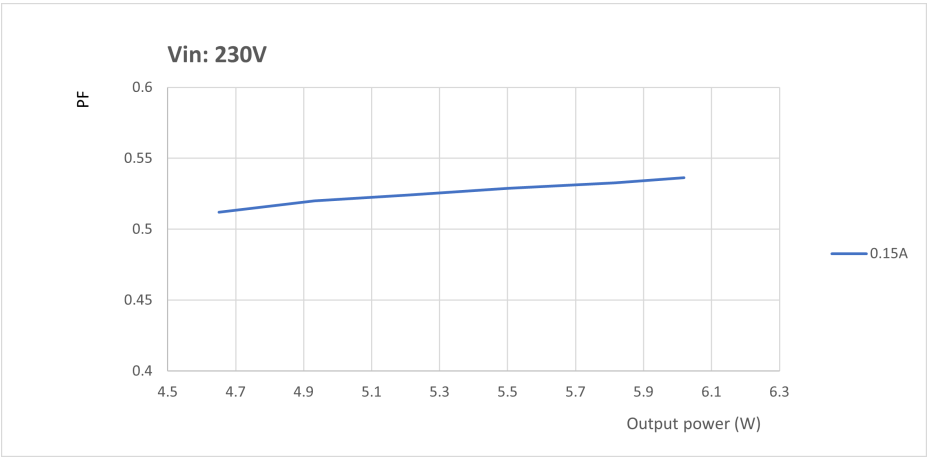
Specification item	Value
Approval marks and Certifications	CB / CCC / CE / ENEC / RCM / UKCA
Ingress Protection classification (IP)	20
Noise and hum dB(A)	20
Application	Indoor Point
Mounting Type	Built-in / Independent

Graphs

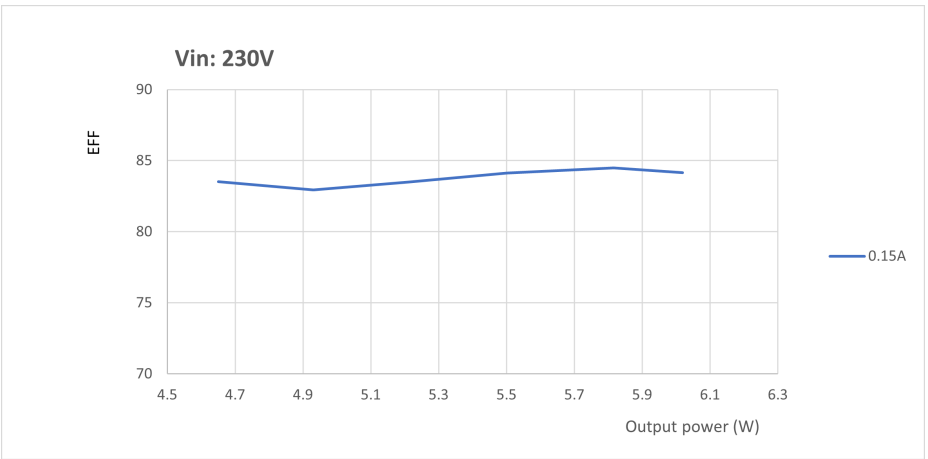
Operating window



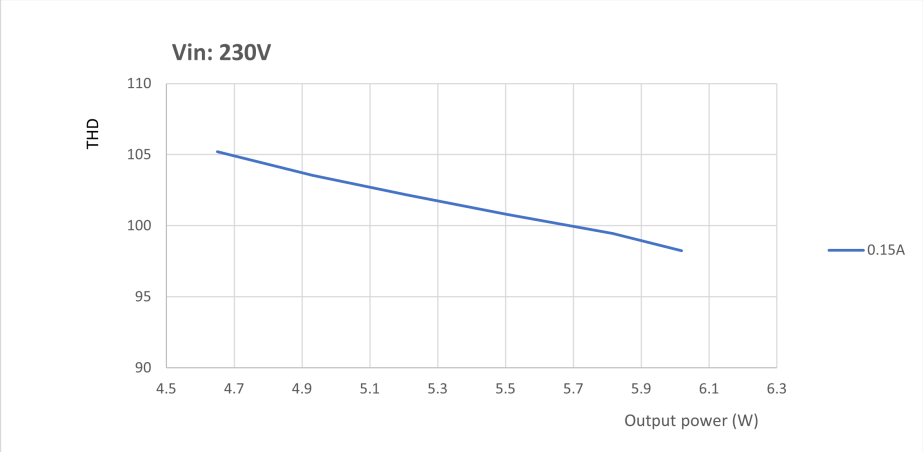
Power factor versus output power



Efficiency versus output power



THD versus output power



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Date of release: July 20, 2023 v1

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