PHILIPS

CertaDrive

LED driver

Datasheet

CertaDrive Panel drivers – Low Ripple

CertaDrive 20W 0.5A 40V 230V I G5

9290 039 20280

Single current LED drivers for essential lighting applications.

CertaDrive LED panel drivers are designed to fulfill the market need for panel lighting with reliable performance. The new generation CertaDrive LED panel drivers offer basic specifications with specific current and voltage settings which are easy to use for high volume applications.

Features

- 50,000 hours lifetime @Tc-life
- SELV output for simpler approval process and easy design-in
- Fast Time to Market
- Low ripple output current (4%) Application

Benefits

- Various Vout/Iout mix for high volume applications
- Comfort for eyes and assurance of camera-friendly performance
- Easy to design-in with single output current
- Independent-version housing design for stand-alone installations

Application

- Panel application for office and public areas
- For luminaires of protection class II

October 2024

Logistical data

Specification item	Value
Product name	CertaDrive 20W 0.5A 40V 230V I G5
Logistic code 12NC	9290 039 20280
Pieces per box	105

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	0.11	A	@ rated output power @ rated input voltage
Rated input power	23.0	W	@ rated output power @ rated input voltage
Power factor	0.95		@maximum output power @ rated input voltage
Total harmonic distortion	20	%	@ rated output power @ rated input voltage
Efficiency	88.0	%	@ maximum output power @ rated input voltage
Input voltage AC	198...264	V_{ac}	Operational range
Input frequency AC	45...66	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	500	mA	
Output current tolerance ±	8	%	@full load
Output current ripple LF	≤ 4	%	Ripple = peak to average, < 3kHz
Output current ripple HF	≤ 15	%	
Output P_{st}^{LM}	≤ 0.1		In entire operating window
Output SVM	≤ 0.1		In entire operating window
Output power	15.0...20.0	W	

Control interfaces

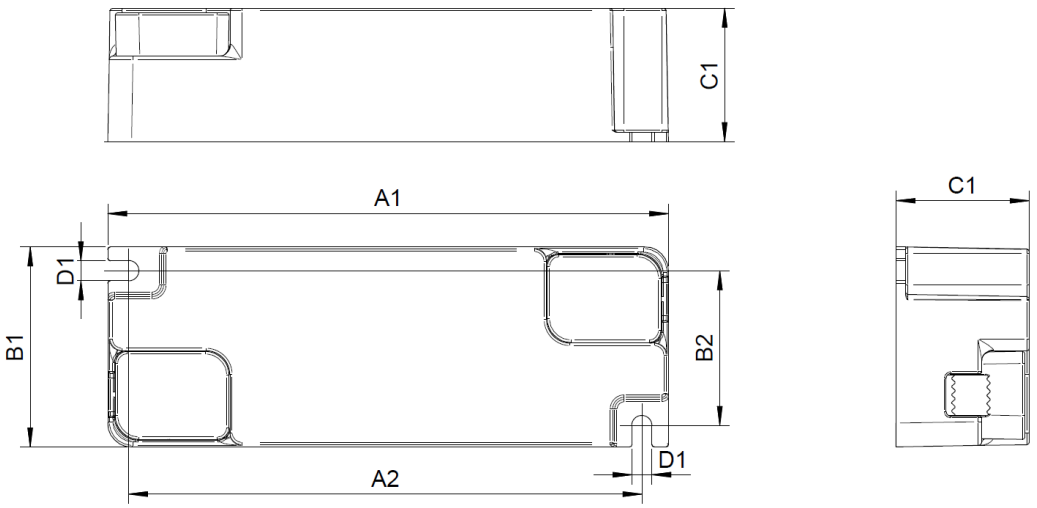
Specification item	Value	Unit	Condition
Control method	Fixed		

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.75...1.5 / 18...16	mm^2 / AWG	solid / stranded wire
Input wire strip length	8.5...9.5	mm	
Output wire cross-section	0.2...1.5 / 24...16	mm^2 / AWG	DA250 (pitch 3.5 mm), solid / stranded wire
Output wire strip length	8.5...9.5	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)	118	mm	± 0.5
Mounting hole distance (A2)	108	mm	± 0.5
Width (B1)	42	mm	± 0.5
Width (B2)	32.5	mm	± 0.5
Height (C1)	28	mm	± 0.5
Mounting hole diameter (D1)	4.2	mm	± 0.3
Weight	64	gram	
Housing color	white		

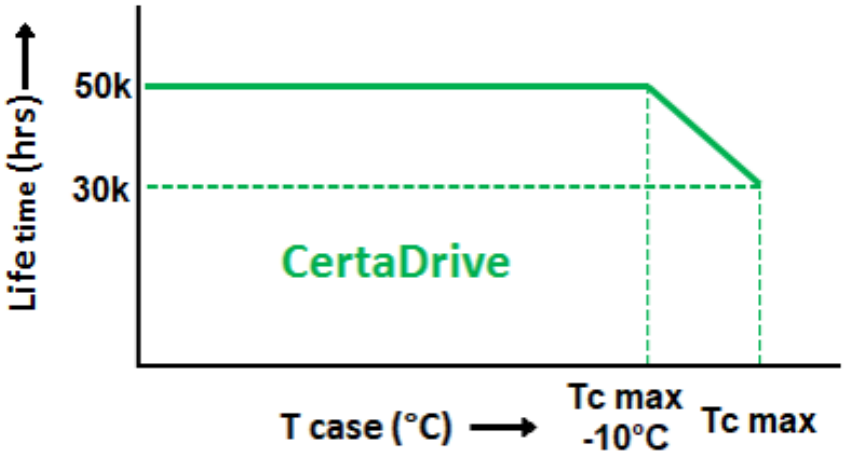


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20...+40	°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-max. Maximum failures = 10%
Driver lifetime	50,000	hours	Measured temperature at Tcase-point is Tcase-max -10 degrees. Maximum failures = 10%



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

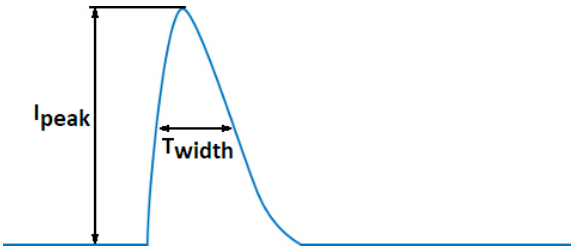
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	No		

Non-programmable 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	27.4	A	Input voltage 230V
Inrush peak width	97	µs	Input voltage 230 V, measured at 50% height
Drivers / MCB 16A type B @230V AC	≤ 45	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	Acc. IEC61347-1. LED module contribution not included

Surge immunity

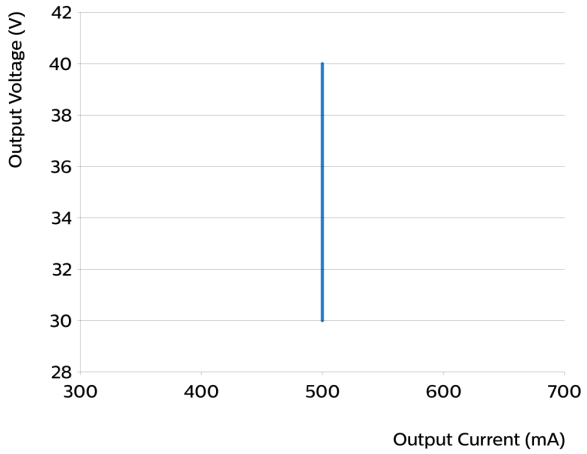
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Application Info (Approbation)

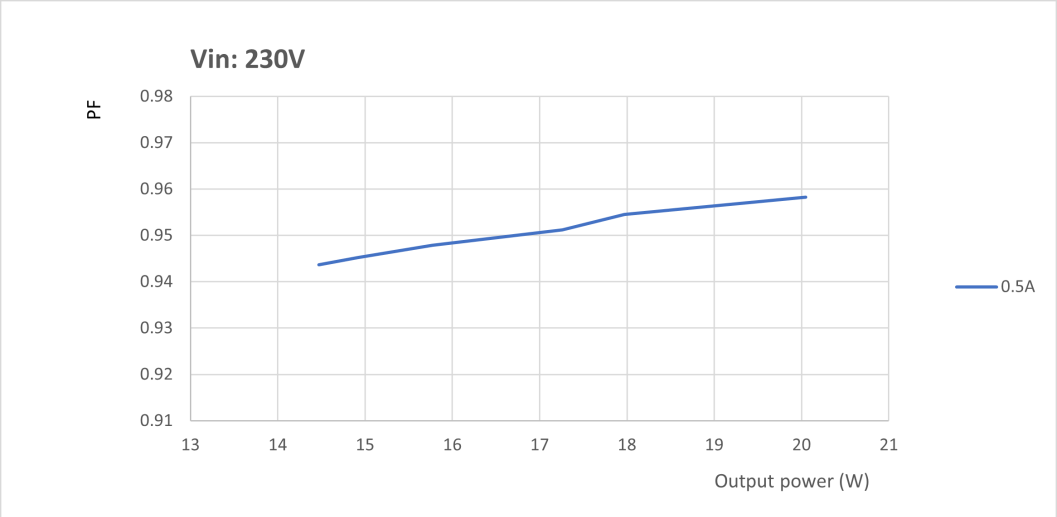
Specification item	Value
Approval marks and Certifications	CB / CCC / CE / EAC / ENEC / SELV / TISI / UKCA
Ingress Protection classification (IP)	20
Noise and hum dB(A)	20
Application	Indoor Linear
Mounting Type	Independent

Graphs

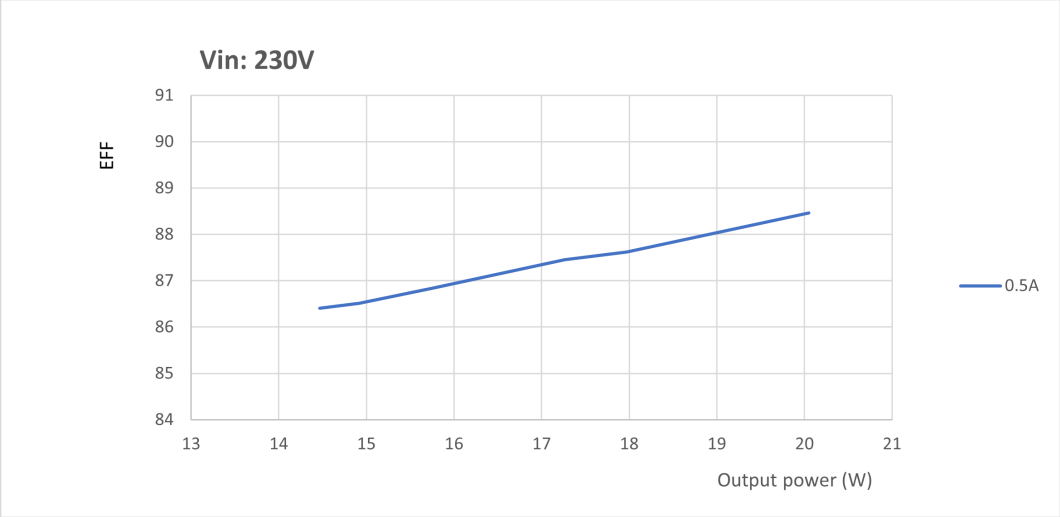
Operating window



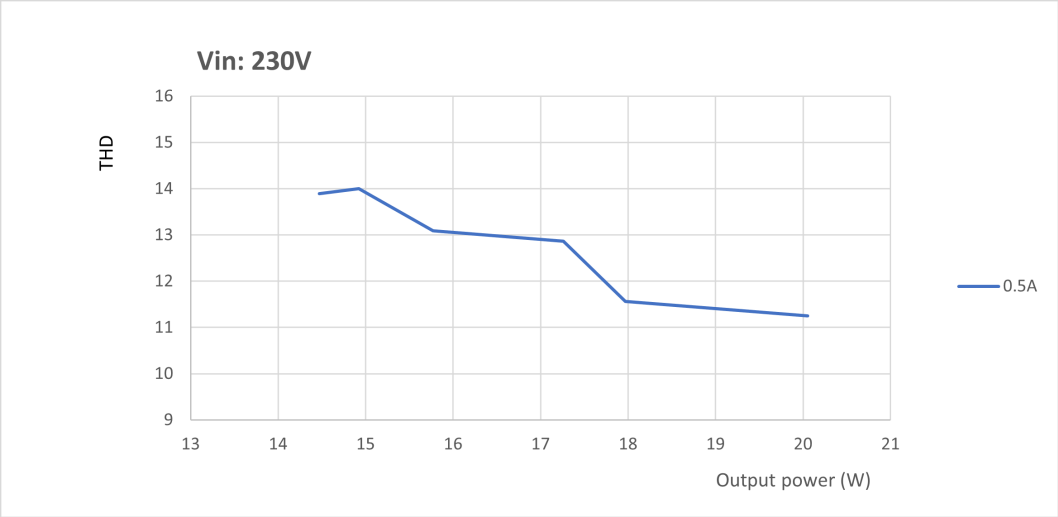
Power factor versus output power



Efficiency versus output power

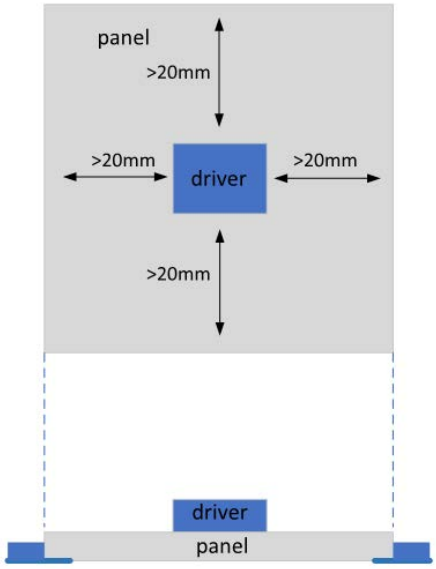


THD versus output power



Notes

This driver only can be used with the LED panel, and refer to the following installation instruction:



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Date of release: October 12, 2024 v1

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