PHILIPS

CertaDrive

LED driver



Datasheet

CertaDrive G3

CertaDrive 20W 0.5A 40V LPF I 230V

9290 028 78880

Affordable and reliable LED Drivers

Affordable LED Driver range offering Philips reliability. The CertaDrive range is compatible with COB and mid-power LEDs from any LED manufacturer.

Benefits

- Driver design based on Philips experience and knowledge of conventional fluorescent and HID technologies
- Various power wattage Drivers that are related to the lumen packages/applications
- Fixed output Drivers
- Independent-version housing design for stand-alone installations

Features

- High reliability
- Luminaire design flexibility to keep stable/constant
- Lumen output and light quality levels
- Fast Time to Market
- One supplier for professional general lighting LED Drivers
- Affordable LED Drivers

Application

- Public buildings (airports, cinemas, theaters, exhibition halls)
- Retail (supermarkets, shops)
- Office

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 range	50…60	Hz	Performance range
Rated input current	0.2	A	@ rated output power @ rated input voltage
Rated input power	23	W	@ rated output power @ rated input voltage
Power factor	0.5		@ rated output power @ rated input voltage
Total harmonic distortion	130	%	@ rated output power @ rated input voltage
Efficiency	88	%	@ rated output power @ rated input voltage @max. Uout
Input voltage AC range	202…254	V_{ac}	Operational range
Input frequency AC range	47.5…63	Hz	Operational range
Isolation input to output	SELV		

Electrical output data

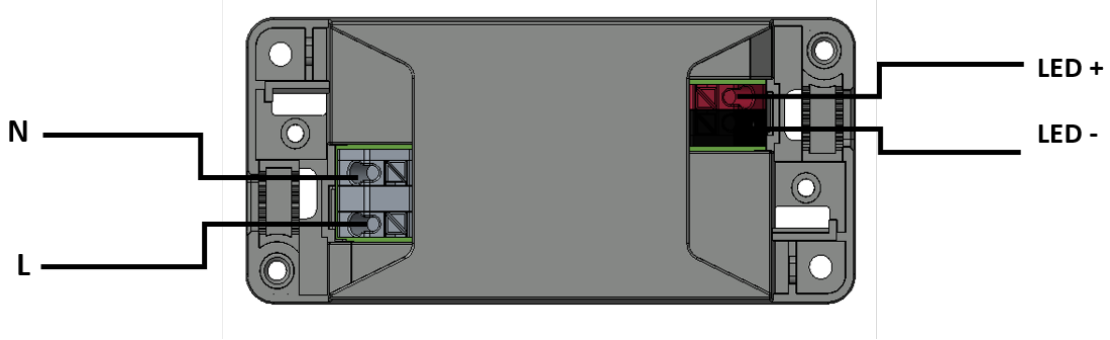
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	30…40	V_{dc}	
Output voltage max.	60	V	Maximum output voltage (rms)
Output current	0.5	A	
Output current tolerance ±	10	%	
Output current ripple LF	≤ 5	%	Ripple = peak / average, < 3kHz
Output current ripple HF	≤ 15	%	
Output P_{st}^{LM}	≤ 0.02		In entire operating window
Output SVM	≤ 0.07		In entire operating window
Output power	13.5…22	W	

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	Fixed		

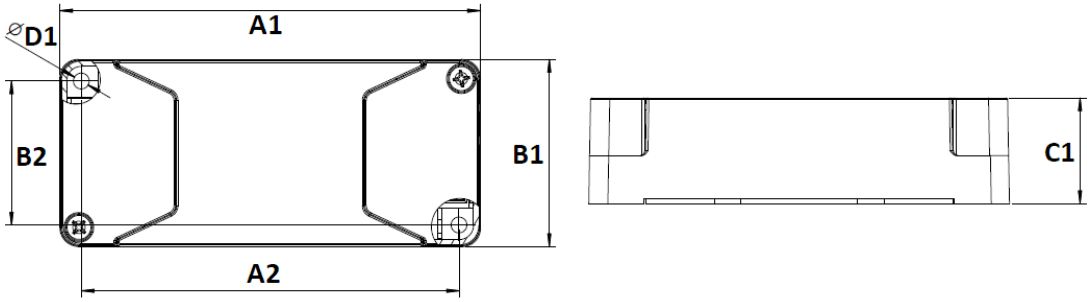
Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.75…1.5 / 18…16	mm^2 / AWG	Type250 (Independent), solid / stranded wire
Input wire strip length	8…9	mm	
Output wire cross-section	0.75…1.5 / 18…16	mm^2 / AWG	Type250 (Independent), 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)	101	mm	
Mounting hole distance (A2)	90	mm	
Width (B1)	41	mm	
Height (C1)	28	mm	
Mounting hole diameter (D1)	3.3	mm	
Weight	66	gram	



Logistical data

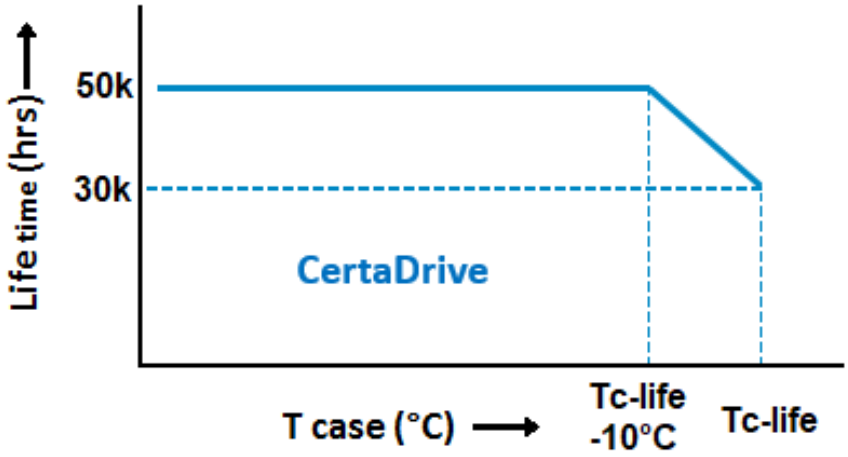
Specification item	Value
Product name	CertaDrive 20W 0.5A 40V LPF I 230V
Logistic code 12NC	9290 028 78880
Pieces per box	64

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	70	°C	Maximum temperature measured at T_{case}-point
Tcase-life	60	°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%



Storage temperature and humidity

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

Programmable features

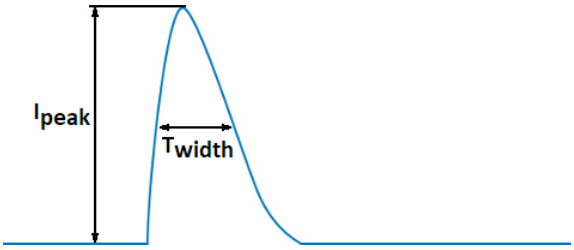
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	No	500 mA	Fixed output current
LED Module Temperature Protection (MTP)	No		
Driver Temperature Limit (DTL)	No		
Constant Light Output (CLO)	No		
DC emergency (DCemDim)	No		

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
Energy metering (DALI part 252)	No		
Diagnostics	No		

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	14.7	A	Input voltage 230V
Inrush current T_{width}	155	µs	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 51	pcs	Indicative value



MCB	Rating	Relative number of LED drivers
B	4A	25%
B	6A	40%
B	10A	63%
B	13A	81%
B	16A	100% (stated in datasheet)
B	20A	125%
B	25A	156%
B	32A	200%
B	40A	250%
C	4A	42%
C	6A	63%
C	10A	104%
C	13A	135%
C	16A	170%
C	20A	208%
C	25A	260%
C	32A	340%
C	40A	415%

Driver touch current / protective conductor 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

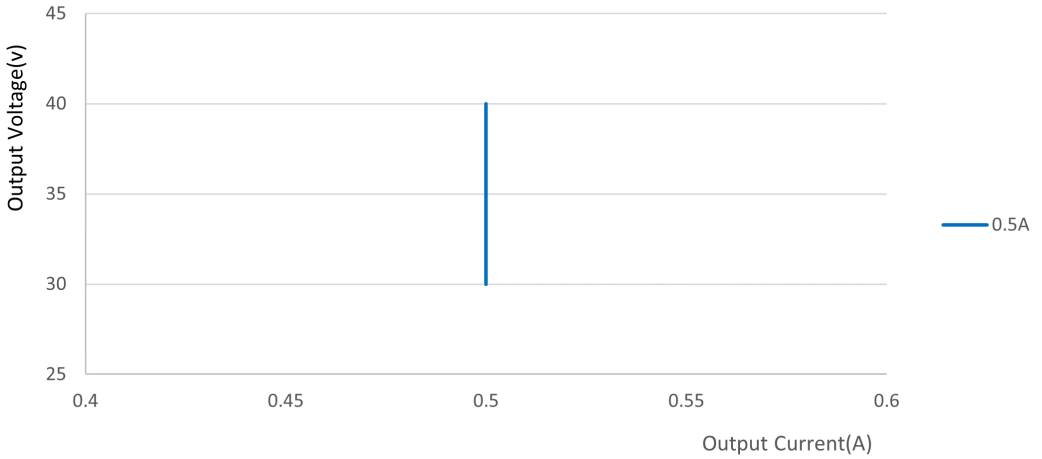
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Application Info

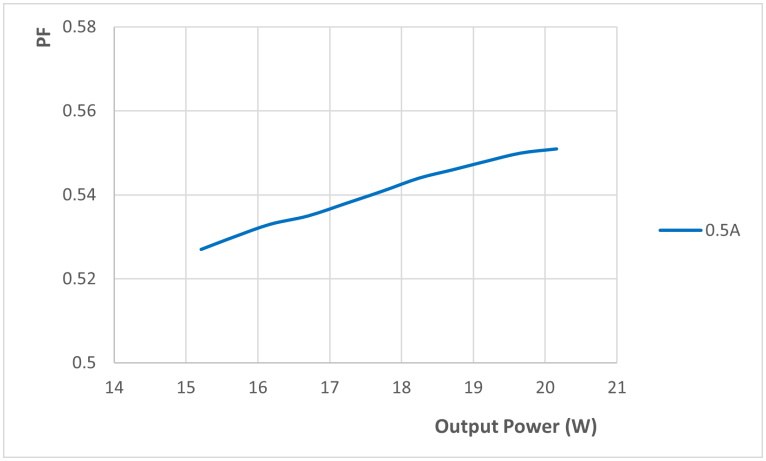
Specification item	Value
Approval marks	CB / CCC / CE / ENEC / KC / RCM
Ingress Protection classification (IP)	20
Application	Indoor Point
Mounting Type	Built-in / Independent

Graphs

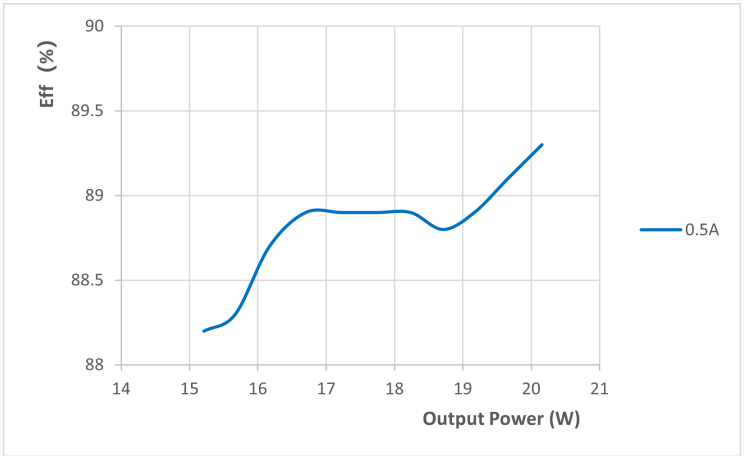
Operating window



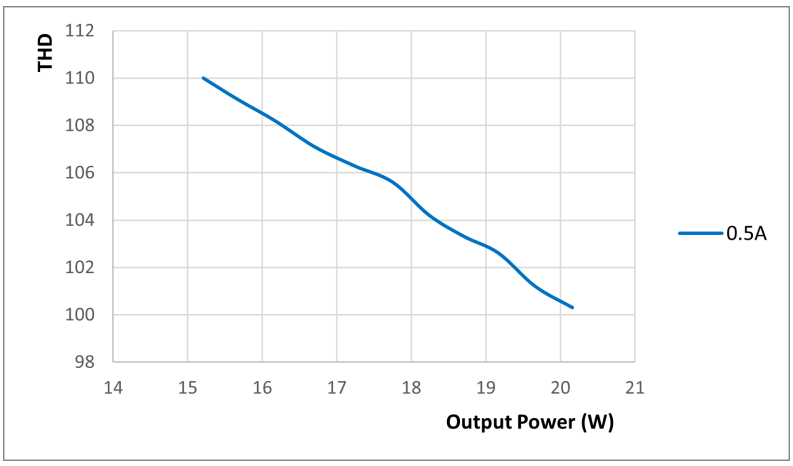
Power factor versus output power



Efficiency versus output power



THD versus output power



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