PHILIPS

CertaDrive

LED driver



Datasheet

CertaDrive Panel drivers – Low Ripple

CertaDrive 44W 0.9/1.05A 42V 230V I

9290 028 04880

Single current LED drivers for essential lighting applications.

CertaDrive LED drivers are designed to fulfill the market need for essential lighting with reliable performance. The CertaDrive LED drivers offer basic specifications with specific current and voltage settings which are easy to use for high volume applications. The CertaDrive range is optimal to operate mid-power LEDs from different manufacturers.

Benefits

- Driver design based on Philips experience and knowledge of conventional fluorescent and HID technologies
- Popular Vout/Iout mix for high volume applications Various power wattage Drivers that are related to the lumen packages/applications
- Comfort for eyes and assurance of camera friendly performance
- Dual output currents offers flexibility in application
- Easy to use with Philips industrial design on mechanics

Features

- SELV output for simpler approval process and easy design-in
- Specific current and voltage
- 30,000 hours life time
- Fast Time to Market
- Low ripple output current (4%)

Application

- Office
- Public areas
- For luminaires of protection class II

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	0.24	A	@ rated output power @ rated input voltage
Rated input power	49	W	@ rated output power @ rated input voltage
Power factor	0.9		@ rated output power @ rated input voltage
Total harmonic distortion	20	%	@ rated output power @ rated input voltage
Efficiency	89	%	@ full load @ rated input voltage
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…42	V_{dc}	
Output voltage max.	60	V	Maximum output voltage (rms)
Output current	0.9 / 1.05	A	
Output current tolerance	± 8	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average, < 3kHz
Output current ripple HF	≤ 15	%	
Output power	27…44	W	

Electrical data controls input

Specification item	Value	Unit	Condition
Control method			

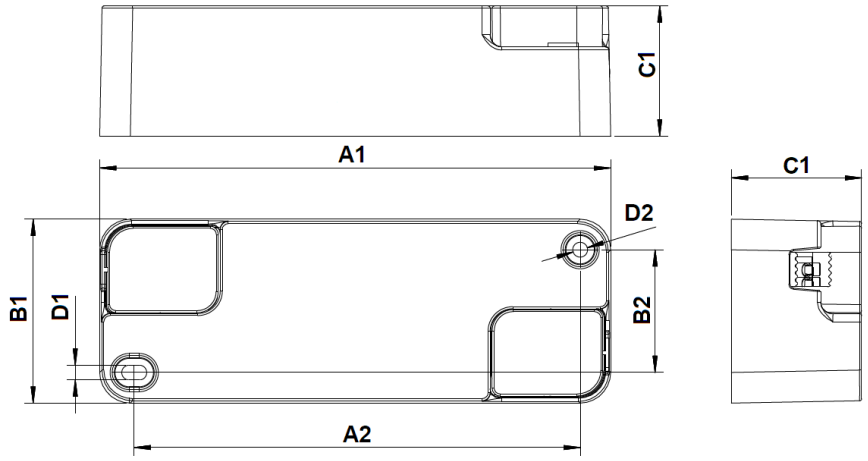
Wiring and Connections

Specification item	Value	Unit	Condition
Input wire cross-section	0.75…1.5	mm^2	Type250 (Independent), solid / stranded wire
	16…18	AWG	Type250 (Independent), solid / stranded wire
Input wire strip length	8…9	mm	
Output wire cross-section	0.5…1.5	mm^2	Type250, solid / stranded wire
	16…20	AWG	Type250, solid / stranded wire
Output wire strip length	8…9	mm	
Maximum cable length	600	mm	Total length of wiring including LED module, one way



Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	125	mm	
Width (B1)	45	mm	
Width (B2)	30	mm	
Height (C1)	31.8	mm	
Fixing hole diameter (D1)	3.5	mm	
Mounting hole diameter (D2)	3.5	mm	
Fixing hole distance (A2)	109	mm	
Weight	110	gram	



Logistical data

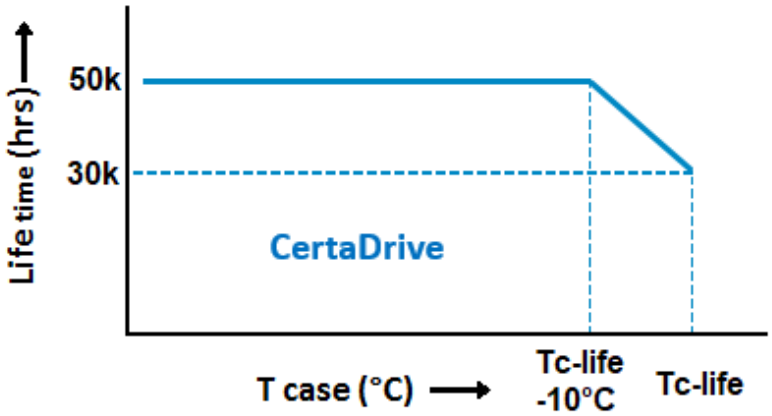
Specification item	Value
Product name	CertaDrive 44W 0.9/1.05A 42V 230V I
Logistic code 12NC	9290 028 04880
Pieces per box	40

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
Starting Ambient temperature	-20…+40	°C	
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%



Storage temperature and humidity

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

Programmable features

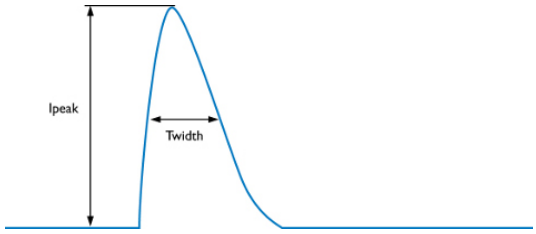
Specification item	Available	Remark	Condition
Set Adjustable Output Current (AOC)	No	See Design-in Guideline	Default output current: = 0.9/1.05A
LED Module Temperature Protection (MTP)	No		
Constant Lumen Over Lifetime (CLO)	No		
DC emergency dimming (DCemDim)	No		

Features

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

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	17.2	A	Input voltage 230V
Inrush current T_{width}	220	µs	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 30	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

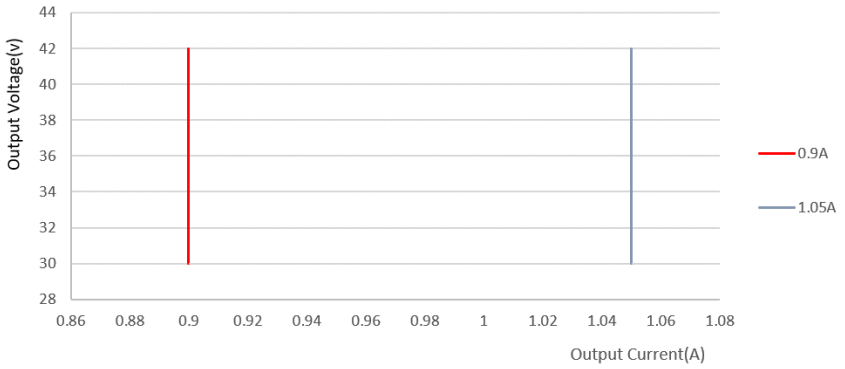
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm 1.2/50us,8/20us

Application Info

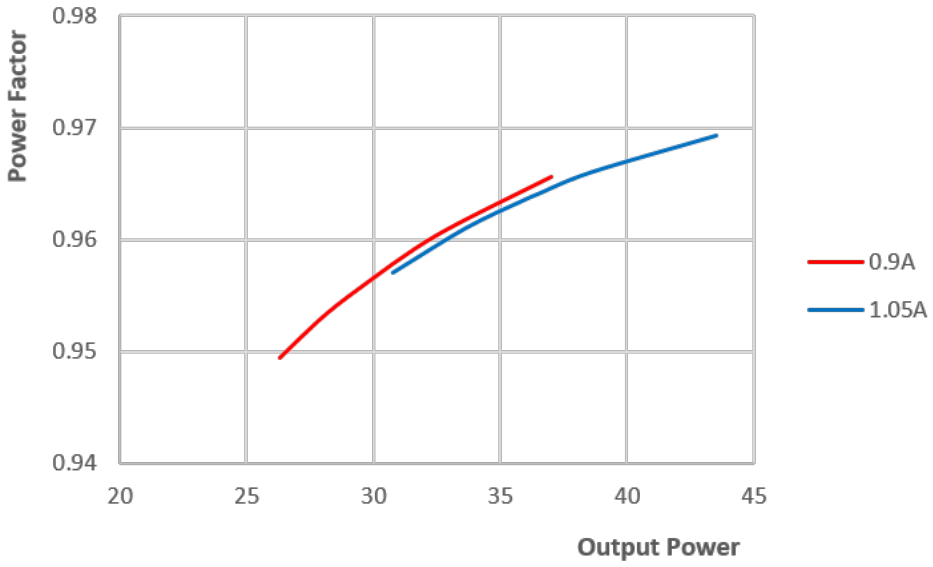
Specification item	Value
Approval marks	C-tick / CB / CCC / CE / ENEC / SELV / TISI
Ingress Protection classification (IP)	20

Graphs

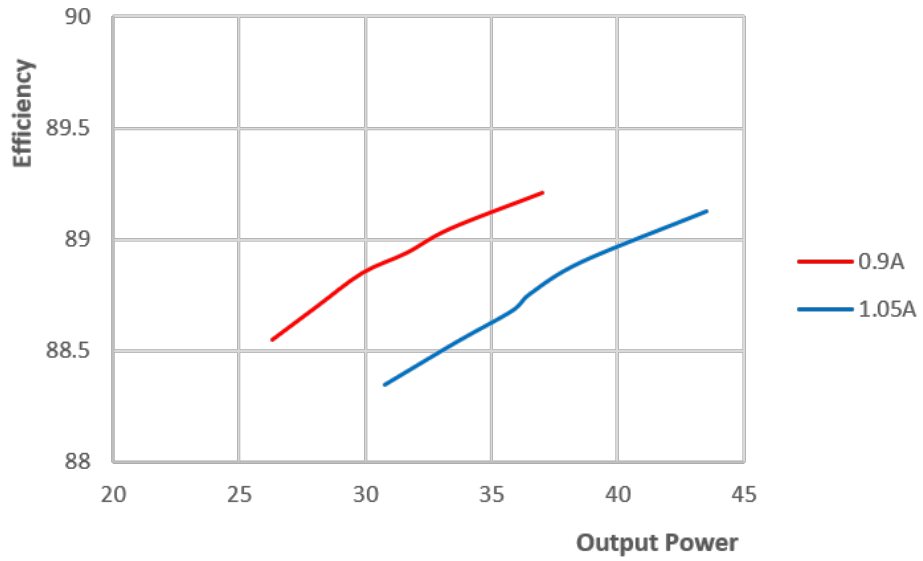
Operating window



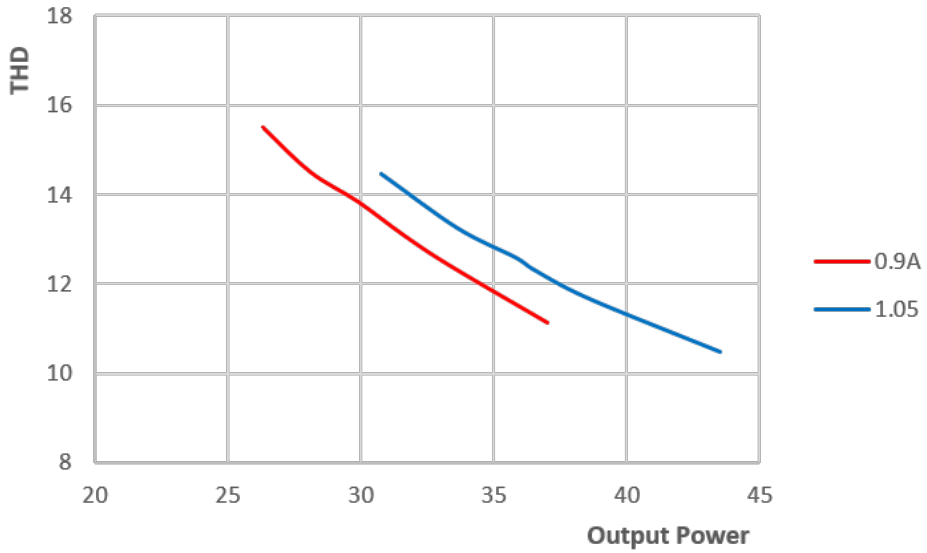
Power factor versus output power



Efficiency versus output power



THD versus output power



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