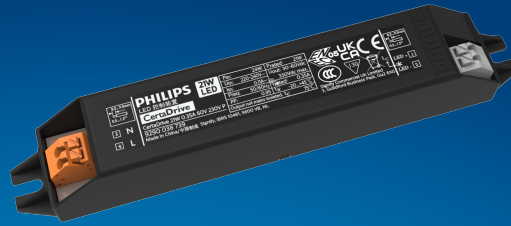


PHILIPS

CertaDrive

LED driver



Datasheet

CertaDrive non-isolated Plastic driver

CertaDrive 21W 0.35A 60V 230V P

9290 038 73980

CertaDrive LED drivers come with a single current output and offer affordable, reliable, low-ripple linear non-isolated solutions for TLED, Batten, and Troffer lighting fixtures. It meets all necessary safety and EMC standards and has a high efficiency rating to ensure optimal energy consumption. They are ideal for high-volume applications while delivering the quality requirements that you can expect from the Philips brand.

Features

- Class II application
- Low Ripple less than 3.2%
- High efficiency
- 30,000 hours lifetime @ Tc-life

Benefits

- Provides options for different luminaire designs
- Comfortable for the eyes
- Energy saving
- Peace of mind with proven reliability

Application

- TLED
- Batten
- Troffers

Logistical data

Specification item	Value
Product name	CertaDrive 21W 0.35A 60V 230V P
Logistic code 12NC	9290 038 73980
Pieces per box	50

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
Max. input current	0.13	A	@ rated output power @ minimum performance input voltage
Rated input power	24.0	W	@ rated output power @ rated input voltage
Power factor	0.95		@maximum output power @ rated input voltage
Total harmonic distortion	20	%	@maximum output power @ rated input voltage
Efficiency	89.0	%	typical value @ 230V, full output power
Input voltage AC	198...264	V _{ac}	Operational range
Input frequency AC	47.5...63	Hz	Operational range
Isolation input to output	No		

Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	30...60	V _{dc}	
Output voltage max.	330	V	Maximum output voltage (rms)
Output current	350	mA	
Output current tolerance ±	8	%	@full load
Output current ripple LF	≤ 3.2	%	Ripple = peak / average, < 3kHz. Rd = 25Ω
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	10.5...21.0	W	

Control interfaces

Specification item	Value	Unit	Condition
Control method	Fixed		

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.5...1.5 / 20...16	mm ² / AWG	solid / stranded wire
Input wire strip length	8.5...9.5	mm	
Output wire cross-section	0.5...1.5 / 20...16	mm ² / AWG	solid / stranded wire
Output wire strip length	8.5...9.5	mm	
Maximum cable length	2	m	Total length of wiring including LED module, one way

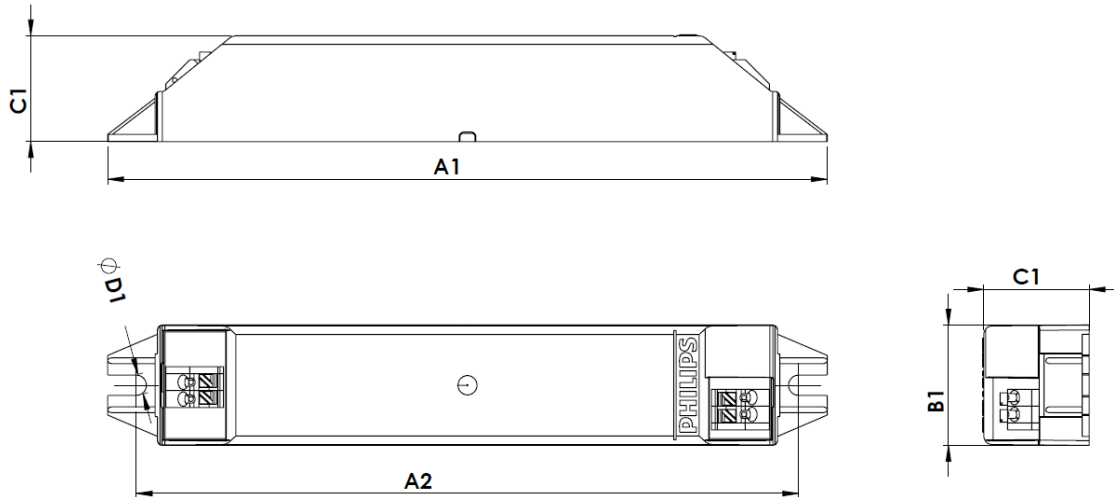


Isolation

Insulation per IEC61347-1	Input	Output	Housing
Input	-	No	Basic
Output	No	-	Basic
Housing	Basic	Basic	-

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	150	mm	
Mounting hole distance (A2)	138	mm	
Width (B1)	25	mm	
Height (C1)	22	mm	
Mounting hole diameter (D1)	4.2	mm	
Weight	52	gram	

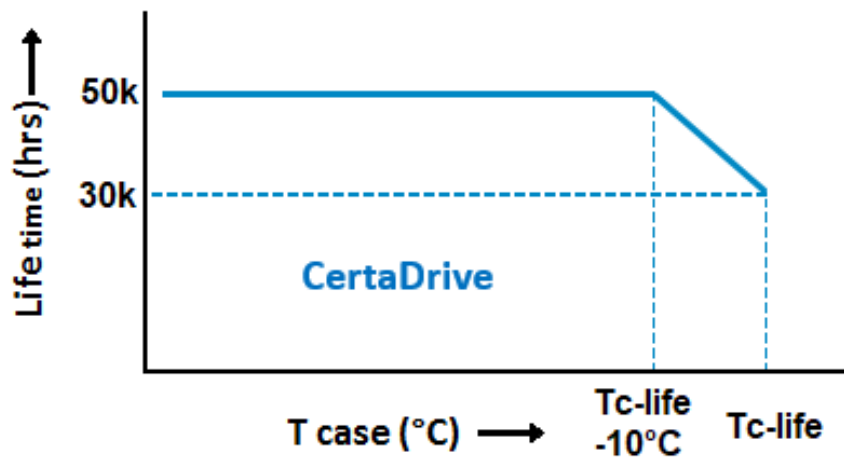


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20...+45	°C	Higher ambient temperature allowed as long as T _{case} -max is not exceeded
T _{case} -max	75	°C	Maximum temperature measured at T _{case} -point
T _{case} -life	75	°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 T _{case} -point is T _{case} -life 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		
LED Module Temperature Protection (MTP)	No		
Constant Light Output (CLO)	No		
Corridor Mode	No		
DC emergency (DCemDim)	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
Overtemperature protection	Yes		Automatic recovering

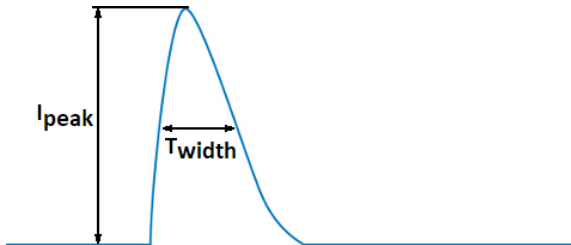
Inrush current

Specification item	Value	Unit	Condition
Inrush current	15	A	Input voltage 230V
Inrush peak width	180	μs	Input voltage 230 V, measured at 50% height
Drivers / MCB 16A type B	≤ 72	pcs	Input voltage 230V230

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

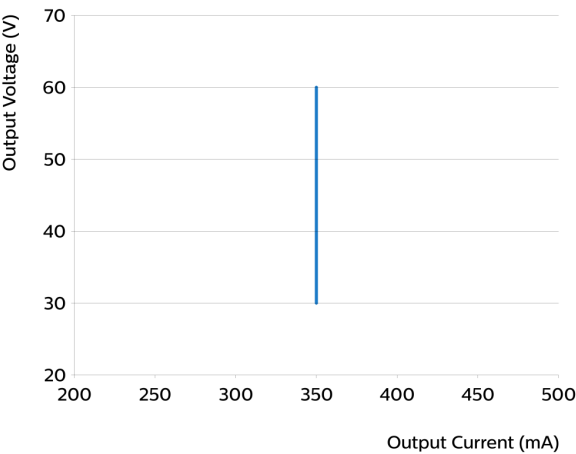
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Application Info (Approbation)

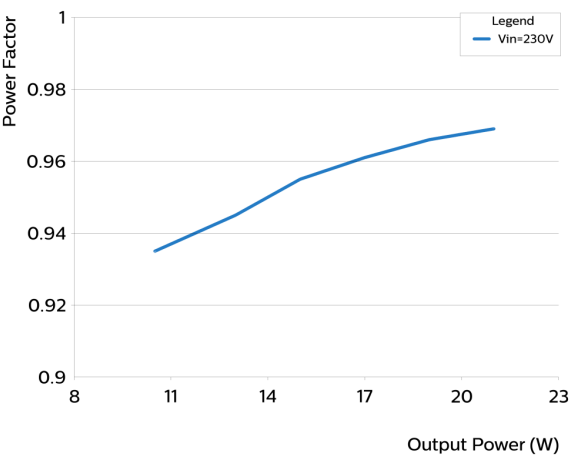
Specification item	Value
Approval marks and Certifications	CB / CCC / CE / ENEC / TISI / UKCA
Ingress Protection classification (IP)	20
Application	Indoor Linear
Mounting Type	Built-in

Graphs

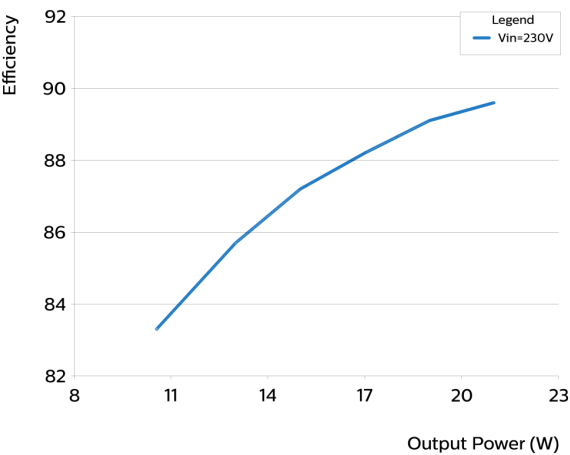
Operating window



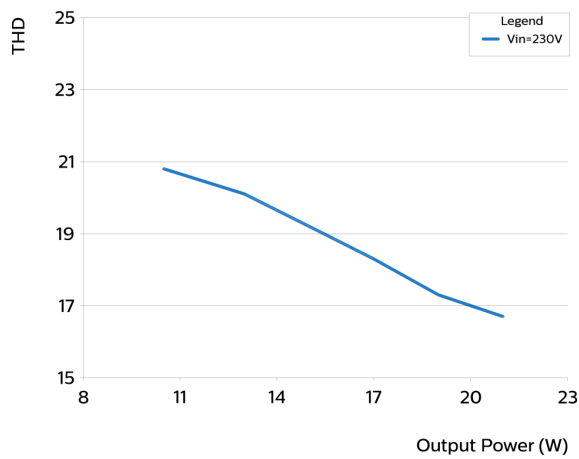
Power factor versus output power



Efficiency versus output power



THD versus output power



Notes

Electrical Specifications:
All the specifications are typical and at 25°C Ta unless specified otherwise.



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