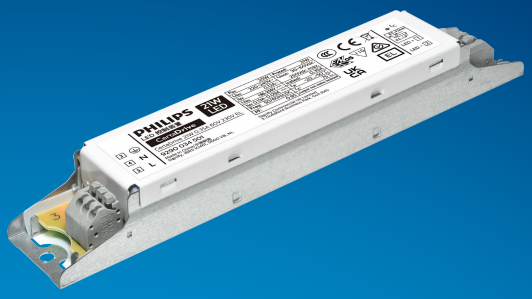
PHILIPS

CertaDrive

LED driver



Datasheet

CertaDrive non-isolated EL G3

CertaDrive 21W 0.35A 60V 230V EL

9290 034 50180

CertaDrive LED drivers come with single current output and offer industry leading performance and reliability at optimized cost. They are ideal for high volume applications while delivering to quality requirements that you can expect from the Philips brand. Key improved feature is the low output current ripple, which ensures that your customers experience high quality of light without visual flicker and stroboscopic effects. Furthermore, these drivers have an Emergency Lighting function, which means that they can operate normally on DC input voltage.

Benefits

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

Features

- Class I application
- Low Ripple less than 4%
- High efficiency
- 50,000 hours lifetime @ Tc-life

Application

- Waterproof lighting
- Recessed, surface and suspended linear lighting

April 2023

Logistical data

Specification item	Value
Product name	CertaDrive 21W 0.35A 60V 230V EL
Logistic code 12NC	9290 034 50180
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 range	50…60	Hz	Performance range
Rated input current	0.12	A	@ rated output power @ rated input voltage
Rated input power	25	W	@ rated output power @ rated input voltage
Nominal Power factor	0.95		@ rated output power @ rated input voltage
Total harmonic distortion	20	%	@ rated output power @ rated input voltage
Efficiency	87	%	typical value @ 230V, full output power
Rated input voltage DC range	186…250	V_{dc}	Performance range
Rated input current DC range	0.13…0.09	A_{dc}	Performance range
Input voltage AC range	198…264	V_{ac}	Operational range
Input frequency AC range	47.5…63	Hz	Operational range
Input voltage DC range	168…275	V_{dc}	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.	250	V	Maximum output voltage (rms)
Output current	0.35	A	EOFi=1
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	W	

Electrical data controls input

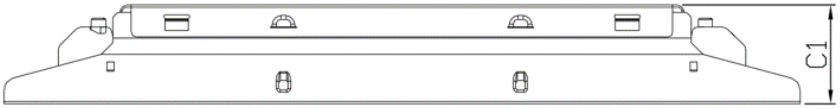
Specification item	Value	Unit	Condition
Control method	Fixed		

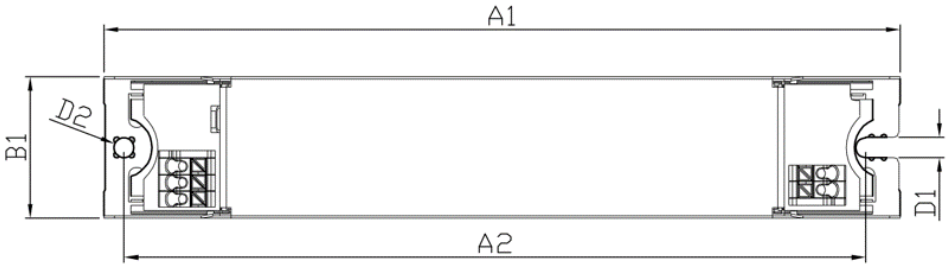
Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.5…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

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	168	mm	
Mounting hole distance (A2)	154.6	mm	
Width (B1)	30	mm	
Height (C1)	21	mm	
Mounting hole diameter (D1)	4.3	mm	
Mounting hole diameter (D2)	4.3	mm	
Weight	100	gram	



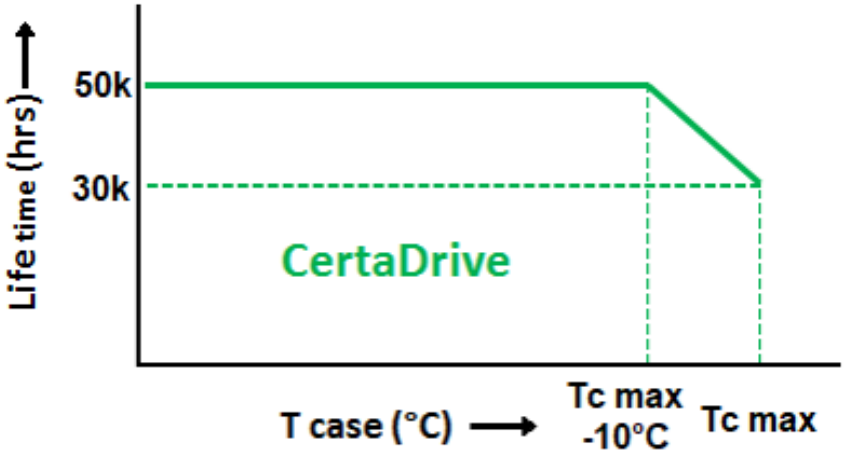


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20…+50	°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	110	°C	In case of a failure, inherent by design
Relative humidity	10…90	%	Non-condensing

Lifetime

Specification item	Value	Unit	Condition
Driver lifetime	50,000	hours	Measured temperature at Tcase-point is Tcase-max -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

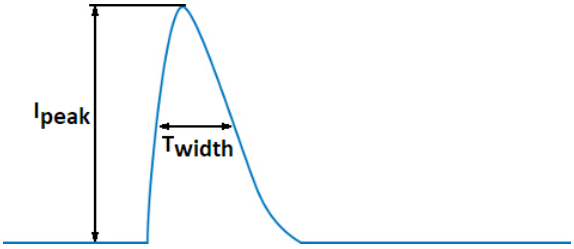
Specification item	Available	Default setting	Condition
LED Module Temperature Protection (MTP)	No		
Constant Light Output (CLO)	No		
Corridor Mode	No		
DC emergency (DCemDim)	Yes		

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	I		per IEC60598
Overtemperature protection	No		Automatic recovering
Overheating protection	No		

Inrush current

Specification item	Value	Unit	Condition
Inrush current	14.5	A	Input voltage 230V
Inrush peak width	182	µs	Input voltage 230 V, measured at 50% height
Drivers / MCB 16A type B	≤ 72	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

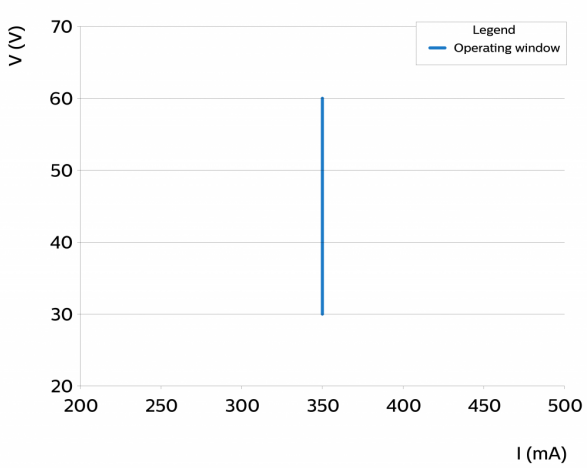
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Application Info

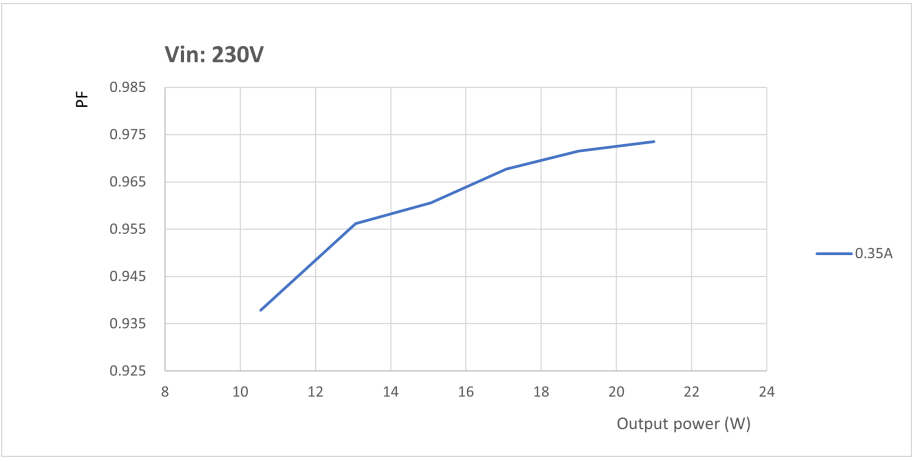
Specification item	Value
Approval marks and Certifications	CB / CCC / CE / EL / ENEC / RCM / TISI / UKCA
Ingress Protection classification (IP)	20
Application	Indoor Linear
Mounting Type	Built-in

Graphs

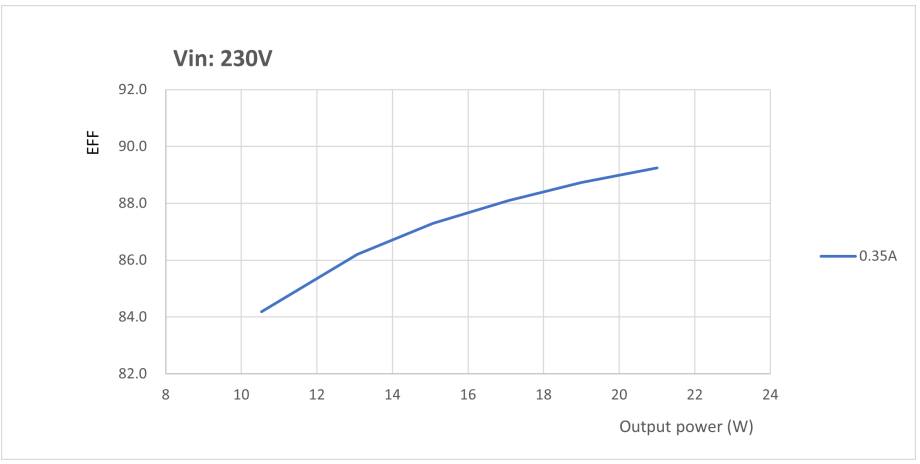
Operating window



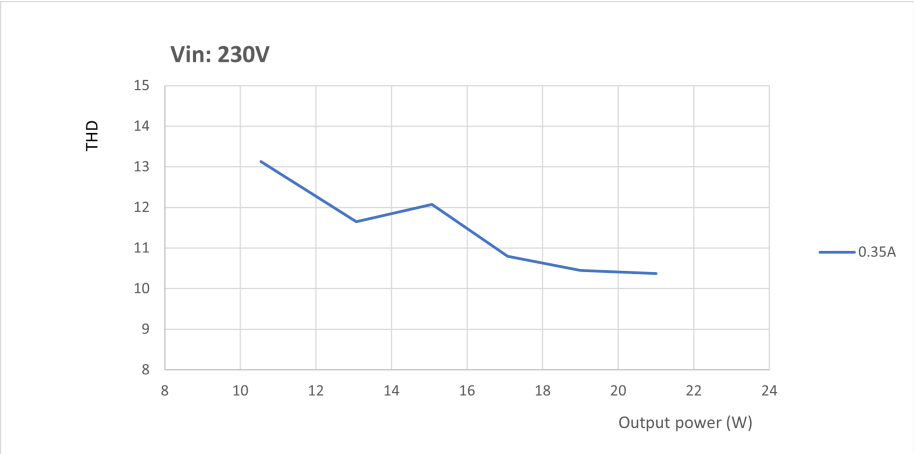
Power factor versus output power



Efficiency versus output power



THD versus output power



Notes

Electrical Specifications:
All the specifications are typical and at 25℃ Ta unless specified otherwise.
Excluding high-risk task area
Can be also on product label under EL mark if there is enough space.

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