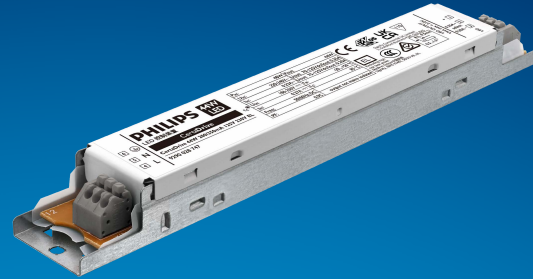


PHILIPS

CertaDrive

LED driver



Datasheet

CertaDrive LED drivers – Linear HV non-isolated

CertaDrive 44W 200/350mA 125V 230V EL

9290 028 74780

Fixed current/voltage LED drivers for high volume LED propositions

The CertaDrive LED drivers are designed to fulfill the market need for essential lighting. The CertaDrive LED drivers offer basic specifications such as specific current and voltage settings, optimal to operate CertaFlux LED modules. Life time of the driver is set at 50,000 hours. Philips will extend the portfolio of CertaDrive LED drivers to match high volume CertaFlux LED line propositions as well as high volume opportunities of other LED board manufactures.

Benefits

- Design freedom
- Optimized to operate CertaFlux LED lines
- 3-years warranty

Features

- Small dimensions
- Specific current and voltage
- 50,000 hours life time
- Fast Time to Market

Application

- Waterproof luminaires
- Recessed, surface and suspended luminaires in offices

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	0.23	A	@ rated output power @ rated input voltage
Rated input power	48	W	@ rated output power @ rated input voltage
Power factor	0.96		@ maximum output power @ rated input voltage
Total harmonic distortion	9	%	@ maximum output power @ rated input voltage
Efficiency	91	%	@ 230V input, full load
Rated input voltage DC range	186...250	V _{dc}	Performance range
Rated input current DC range	≤ 0.27	A _{dc}	Performance range
Input voltage AC range	202...254	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

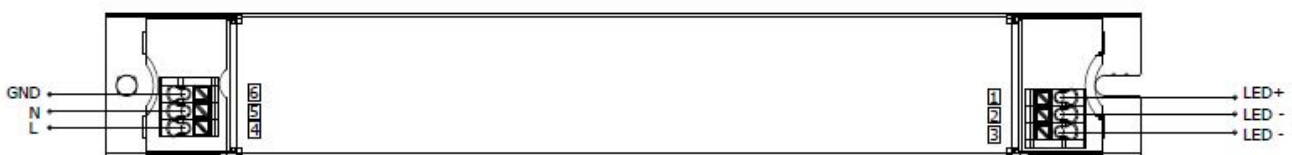
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	70...125	V _{dc}	75...125V@Output current 0.2A
Output voltage max.	210	V	Maximum output voltage (rms)
Output current	0.2 / 0.35	A	Depends on the selected output LED- wire
Output current tolerance ±	8	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average, < 3kHz. R _d > 3.2Ω
Output current ripple HF	≤ 15	%	
Output P _{st} ^{LM}	≤		"~.L*N"} >-BL.Es-H E
Output SVM	≤ 0.		"~.L*N"} >-BL.Es-H E
Output power	15...43.75	W	

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	Fixed		

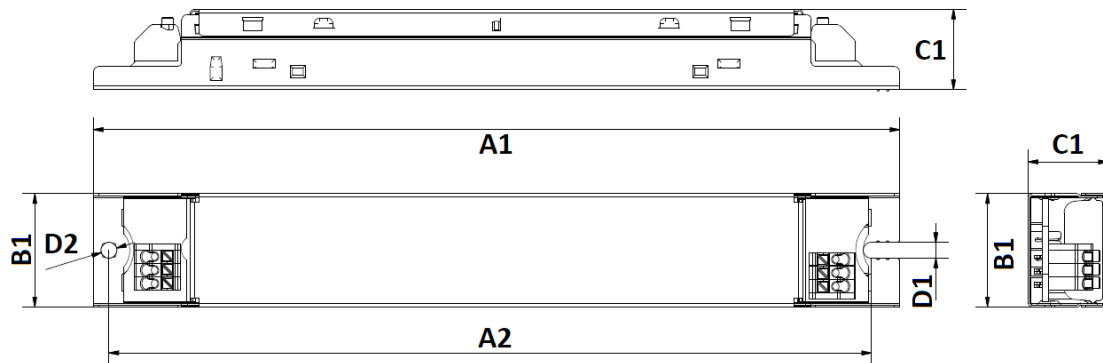
Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.5...1.5 / 20...16	mm ² / AWG	Type250, 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	Type250, 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)	210	mm	± 0.3
Mounting hole distance (A2)	198.5	mm	± 0.3
Width (B1)	30	mm	± 0.5
Height (C1)	21	mm	± 0.5
Mounting hole diameter (D1)	4.1	mm	± 0.2
Mounting hole diameter (D2)	4.1	mm	± 0.2
Weight	132	gram	



Logistical data

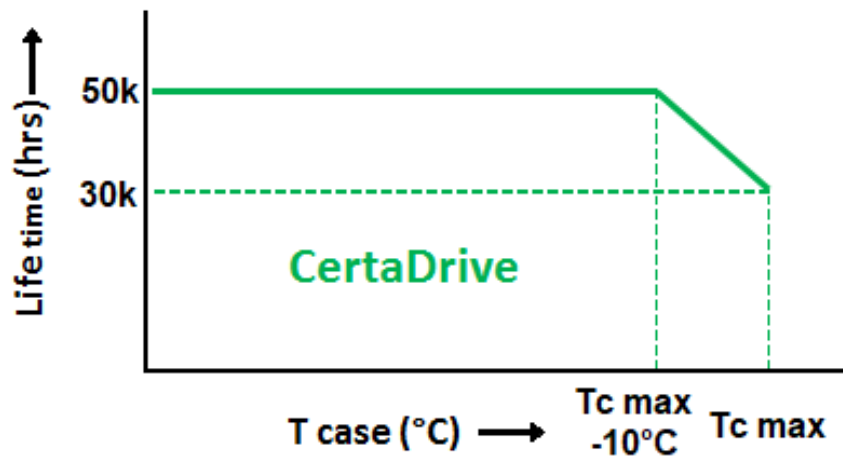
Specification item	Value
Product name	CertaDrive 44W 200/350mA 125V 230V EL
EOC	692234193840500
Logistic code 12NC	9290 028 74780
EAN1(GTIN)	6922341938405
EAN3	6922341938412
Pieces per box	20

Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20...+50	°C	Higher ambient temperature allowed as long as T _{case-max} is not exceeded
T _{case-max}	85	°C	Maximum temperature measured at T _{case-point}
T _{case-life}	75	°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-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

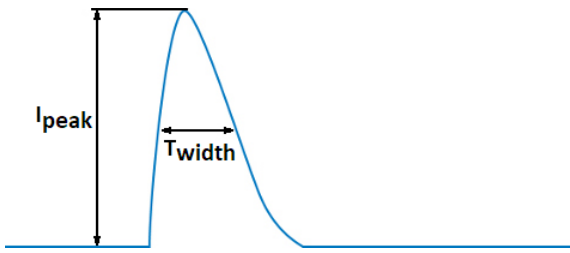
Specification item	Available	Default setting	Condition
LED Module Temperature Protection (MTP)	No		
Constant Light Output (CLO)	No		
Corridor Mode	No		
DC emergency (DCemDim)	Yes		

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	
Output Overvoltage Detection	No	

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	14.2	A	Input voltage 230V
Inrush current T_{width}	222	μ s	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 36	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 Protective Conductor Current (ins. Class I)	0.6	mA rms	Acc. IEC60598-1. LED module contribution not included

Surge immunity

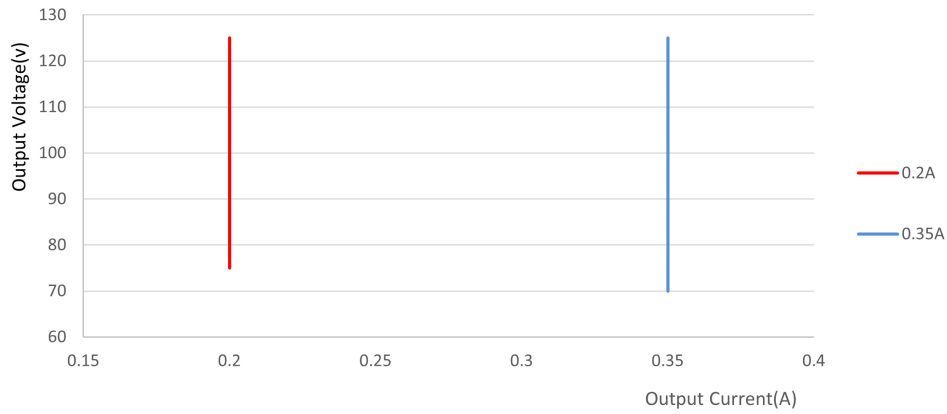
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Application Info

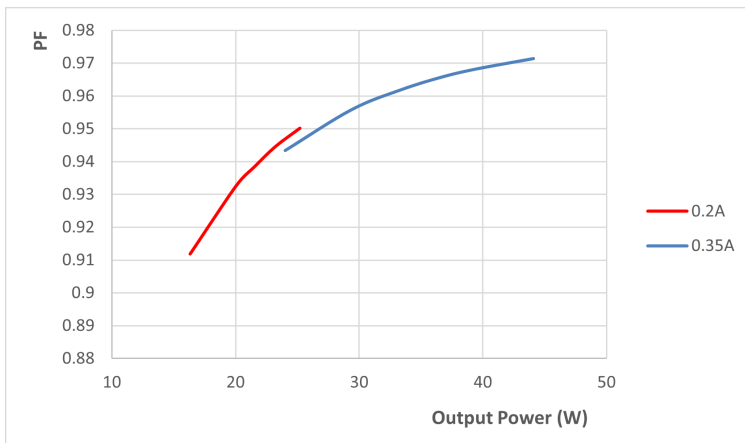
Specification item	Value
Approval marks	CB / CCC / CE / ENEC / EL / RCM / TISI / UKCA
Ingress Protection classification (IP)	20
Application	Indoor Linear
Mounting Type	Built-in

Graphs

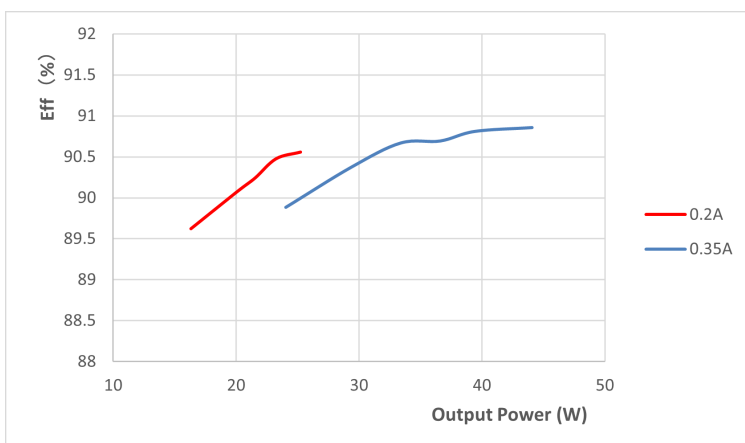
Operating window



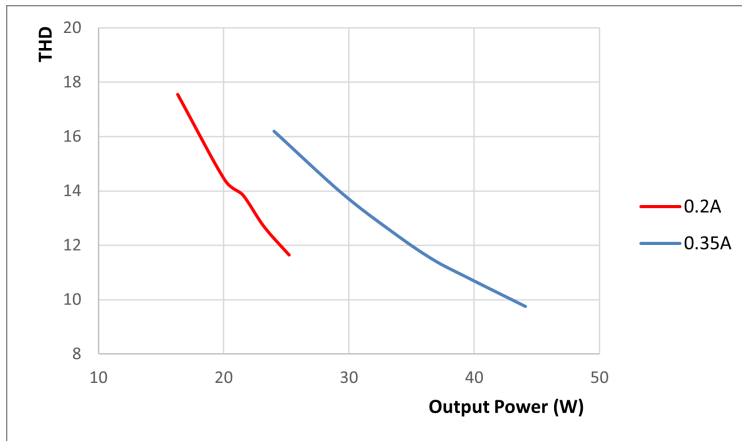
Power factor versus output power



Efficiency versus output power



THD versus output power



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