

## Product Overview



## Definition

Compact, dimmable, robust, outdoor, one-piece, electronic ballasts for CosmoPolis White (CPO-TW) lamps

## Features and Benefits

- Single easily-installed, self-contained component
- High system efficiency-up to 92%
- Long lifetime gear: 50,000 hours 90% survival rate at nominal temperature
- Peak voltage protection safeguards the lamp; surge protection safeguards the gear (differential mode/common mode 2kV/4kV)
- Guaranteed system performance at all mains voltages from 198-254 V
- Double insulated so easy to use in Class 2 applications
- Stable, flicker-free lamp operation
- Self-stopping facility prevents cycling of old lamps
- Size suitable for both luminaire and pole mounting and also for retrofit installations (same footprint as electromagnetic systems)
- Cage clamp terminal connections with pushbutton release
- Compact and environment-friendly system

Note: Introduction timing of different features and supported lamps can vary

## Applications

- Road, street lighting
- Residential lighting
- City beautification
- Indoor and Outdoor applications, recommended outdoor luminaire classification > IP 23

## Philips quality

This assures optimum quality regarding:

- System supplier  
As manufacturers of HID lamps and electronic control gear, Philips ensures that, from the earliest development stage, optimum Lamp/driver performance is maintained
- International standards  
Philips electronic outdoor drivers comply with all relevant global rules and regulations.
- Guaranteed Philips performance and support

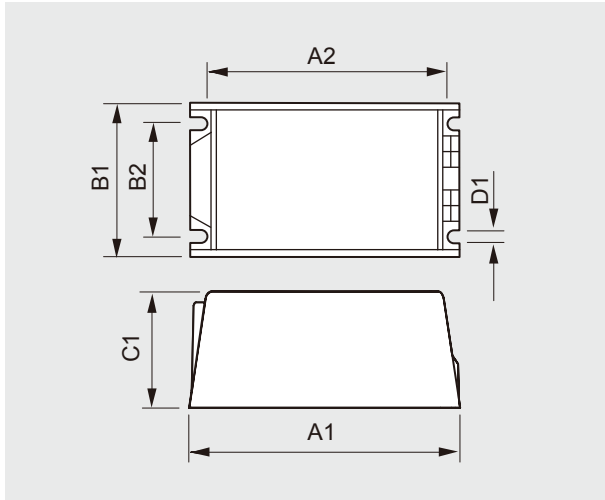
## Compliance's and approvals

- |                          |  |
|--------------------------|--|
| • Approval marks         | CQC, CE                                    |
| • EMI                    | EN 55015 ed7.2                             |
| • Harmonics              | EN 61000-3-2                               |
| • Immunity               | EN 61547-1                                 |
| • Safety                 | EN 61000-4-5                               |
|                          | EN 60926/<br>EN 60928<br>VDE<br>0712/14.22 |
| • Vibration & bump tests | IEC 68-2-6 FC<br>IEC 68-2-29-Eb            |
| • Quality standard       | ISO 9001                                   |
| • Environmental standard | ISO 14001                                  |

# CertaVision Outdoor Driver for Cosmo lamp

## Mechanical Overview

Dimensions in mm



Power	Max. Weight (g)
45W / 60W / 90W / 140W	950

## Overview drivers with dimensions

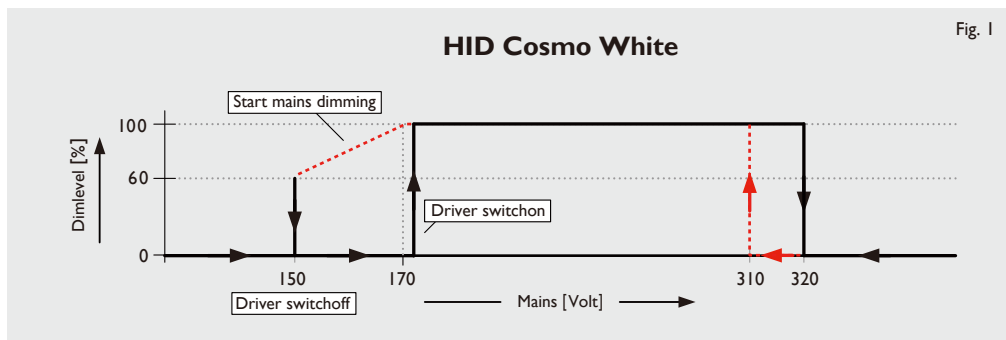
Driver type	A1	A2	B1	B2	C1	D1
CertaVision 45W Cosmo	150.0	140.7	65.0	46.7	65.0	5.0
CertaVision 60W Cosmo	150.0	140.7	65.0	46.7	65.0	5.0
CertaVision 90W Cosmo	150.0	140.7	65.0	46.7	65.0	5.0
CertaVision 140W Cosmo	150.0	140.7	65.0	46.7	65.0	5.0

## Performance Overview

### Rated mains voltage

Performance input voltage range ( $V_{\text{performance}}$ )	187V	305V
Performance input frequency range	47.5Hz	63Hz
Operational/Safety input voltage range	160V	305V
Operational/Safety input frequency range	45Hz	66Hz

v_input_low_OFF	150V $\pm$ 5%	Fig. I
v_input_low_ON	172V $\pm$ 5%	Fig. I
v_input_high_ON	310V $\pm$ 5%	Fig. I
v_input_high_OFF	320V $\pm$ 5%	Fig. I



Note: Earth leakage current <0.7 mA per ballast

# CertaVision Outdoor Driver for Cosmo lamp

## Technical data

Ballast type	For lamps	System Power W	Lamp Power W	PF	T <sub>case</sub> °C	T <sub>ambient</sub> °C
HID-CV 45W/S	Cosmopolis 45W	52	45	0.95	80	-30...+50
HID-CV 60W/S	Cosmopolis 60W	67	60	0.95	80	-30...+50
HID-CV 90W/S	Cosmopolis 90W	98	90	0.95	80	-30...+50
HID-CV 140W/S	Cosmopolis 140W	153	140	0.95	80	-30...+50

## Cable capacity

140W, 90W, 60W and 45W CertaVision CPO	1000 pF
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## Inrush current

Ballasts	Max quantity of ballasts Per MCB Type B 16A	Inrush current ½Value time at typical mains Impedance
45W/60W	11	28A/420uS
90W/140W	5	52A/470uS

## Conversion table for max. quantities of ballasts on other types of Miniature Circuit Breaker

MCB type	Relative number of Ballasts
B 16A	100% (see table above)
B 10A	63%
C 16A	170%
C 10A	104%
LI 16A	108%
LI 10A	65%
G.U.II 16A	212%
G.U.II 10A	127%
K.III 16A	254%
K.III 10A	154%

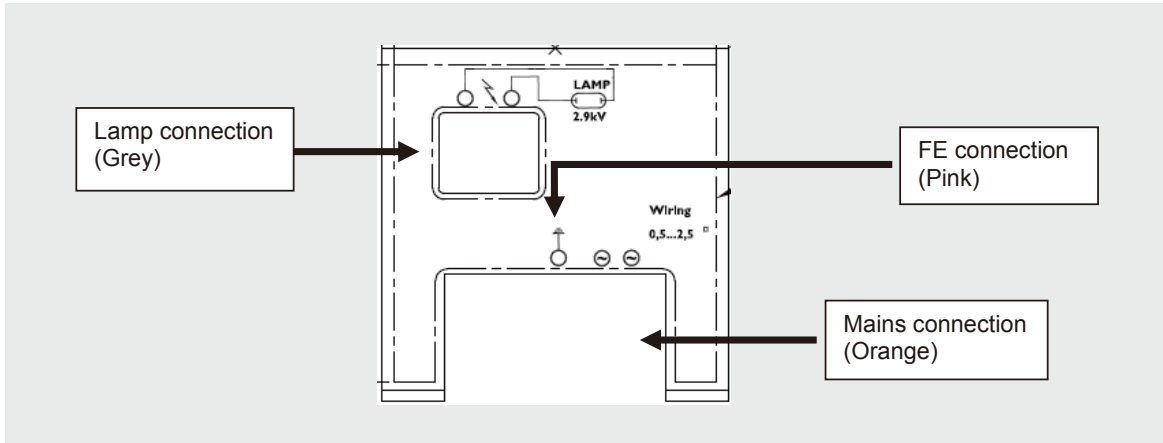
## Note:

- Data is based on a mains supply with an impedance of 400 mΩ (equal to 15 m cable of 2.5 m<sup>2</sup> and other 20 m to the middle of the power distribution), under worst case conditions. With an impedance of 800 mΩ the number of ballasts can be increased by 10%.
- Measurements will be verified in real installations; therefore data are subject to change.
- In some cases the maximum number of ballasts is not determined by the MCB but by the maximum electrical load of the installation.
- Note that the maximum number of ballasts is given when these are all switched on at the same moment, i.e. by a wall switch.
- Measurements were carried out on single-pole MCB's, For multi-pole MCB's it is advisable to reduce the number of ballasts by 20%.
- The maximum number of ballasts which can be connected to one Residual Current Detector of 30 mA is 30.

**Nominal standby power losses = 800mW +/- 10%**

# CertaVision Outdoor Driver for Cosmo lamp

## Wiring diagram



Wire diameter: 0.75 ... 2.5mm<sup>2</sup>  
Strip length: 6mm

### Note:

- For proper EMC, wiring inside luminaire should be as straight and as short as possible; mains wires should not run parallel to lamp wires.
- Automatic restart of hot lamp, lamp may take up to 20mins.

### Protection:

- Lamp EOL protection
  - Short circuit protection
  - Thermal protection
  - Overvoltage protection
- Case switch off: 92°C  
> 320V switch off lamp

### Temperature and lifetime

Ambient temperature	-30 ~ +50 °C
Maximum Case temperature	80°C
Case switch off	92°C
Temperature Protection (dimming)	At low mains and high Tamb
Life time (>90% survivals)	50.000 hours @ T <sub>case</sub> 80°C

### Output characteristics

Driver efficiency at full power (@100%)	50-70W: >90%
	90-150W: >90%
Ignition voltage	2.5kV
Max tolerance on output power (@100%)	+/- 5%
Typical freq output current (@100%)	400Hz ± 40Hz

### Compliance's and approvals

Approbation marks	CQC, CE
Surge protection	EN61547
	4kV L/N-Ground
	2kV L-N
Vibration	IEC 68-2-29 Eb
	Frequency range 10-150 Hz.
	Acceleration/amplitude 5G/0.15mm peak