HID-PV C 35-50-70 /S CDM

Philips Lighting Electronics
GBU e-HID
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1. Introduction

The PrimaVision Compact family has been extended to include a 50W driver as well. The PrimaVision Compact 35W and 70W have been renewed and improved and now fulfil to CISPR 15 ed 7.2. The new drivers have the same footprint as their predecessors to allow easy design-in.

2. Version management

This is the design-in sheet for the PrimaVision Compact 35 /S , 50 /S and 70 /S driver.
Status of the product: Final
Previous status: Sampling

13-10-2010: 9137-006-527 sht-460 2010-10-13

Added PrimaVision Compact 50 /S

22-01-2010: 9137-006-527 sht-460 2010-04-21

Initial document

3. Ordering

Technical name:	HID-PV C 35 /S CDM	HID-PV C 50 /S CDM
12NC:	9137 006 52766	9137006 64966
EAN3:	8727900859621	8727900933642
EOC:	872790085962100	872790093363500

Technical name:	HID-PV C 70 /S CDM
12NC:	9137 006 52966
EAN3:	8727900859744
EOC:	872790085974400

Product	Qty box/pallet	Net weight (kg)	Box Dim. LxWxH (mm)	Pallet Dim. LxWxH (mm)
HID-PV C 35 /S CDM	12/432	0.240	252x180x174	1200x800x550
HID-PV C 50 /S CDM	12/432	0.240	252x180x174	1200x800x550
HID-PV C 70 /S CDM	12/432	0.240	252x180x174	1200x800x550

4. Dimensions and mechanical design-in

Mechanical design-in

This driver should be fixed with the bottom of the mounting-plate onto the housing of the luminaire. It should be mounted by means of 2 screws (M4).

Dimensions

The PrimaVision Compact 35W /S, 50W /S and 70W /S share the same dimensions. The dimensions are also equal to its predecessor.

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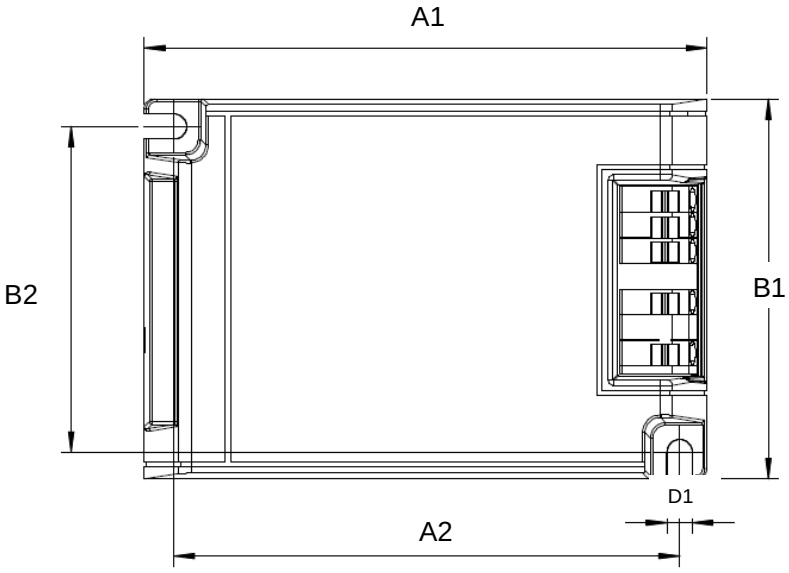
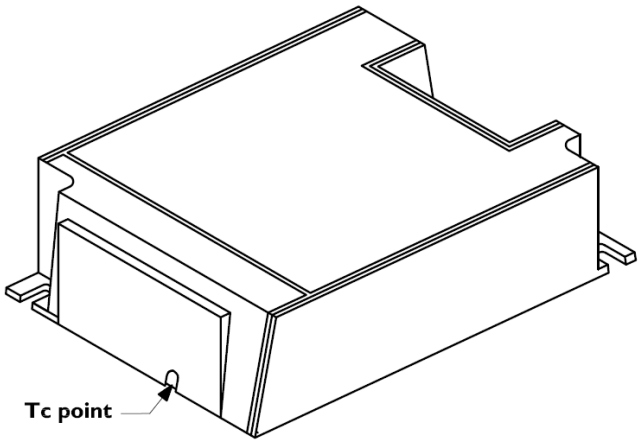


A1 (mm)	A2 (mm)	B1 (mm)	B2 (mm)	C1 (mm)	D1 (mm)
109.6	98.5	74.4	63.7	32.2	4.9

5. Temperature behaviour

T_{case}

The T_{case}-point is the position shown on the drawing below. The thermo-couple should be mounted on the metal bracket.



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Lifetime 40k hours/90% survivals:

	T_{case} –max	$T_{ambient}$ –max
HID-PV C 35 /S CDM	80°C	55°C
HID-PV C 50 /S CDM	80°C	55°C
HID-PV C 70 /S CDM	80°C	50°C

Driver losses

The PrimaVision Compact drivers have been developed to realize high efficiency and operate with low losses for a long reliable lifetime.

Please note that it is necessary for the PrimaVision Compact driver to establish a **good** thermal contact between the gear chassis (bottom plate) and the luminaire chassis in order to achieve sufficient cooling of the driver and prolonged driver lifetime. There should be no air gap present between the driver chassis and the luminaire surface. Do not exceed $T_{case-max}$.

Temperature Testing

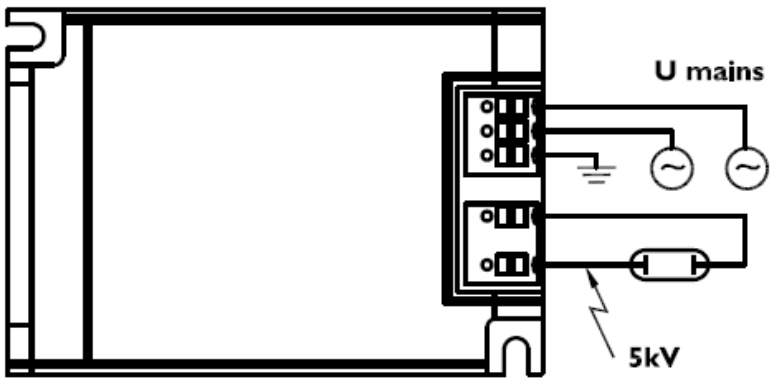
Because the driver will regulate the lamp to a constant power, the input current will increase when the input voltage is lower. This ultimately will influence the power losses, so the worst-case temperature should therefore be measured at lowest mains voltage of 198V.

To guarantee, that the maximum value of T_{case}. is not exceeded, a thermo-couple should be mounted on the T_c point of the driver.

For more information about lifetime and temperature please consult the HID application guide.

6. Wiring

The wiring should be connected according the picture below. This driver is equipped with a safety earth connection and must be connected to the earth connection of the mains-supply.
For EMI-reasons, it is important to make the “hot” lamp-wire (indicated by the ↯ symbol) as short as possible.



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Connector type:	Push-in contacts, WAGO type 804
Wire cross section:	0.75..2.5 mm² massive or stranded
Strip length	10...11 mm
Max cable capacitance lamp-wires:	100 pF
Maximum length lamp-wires:	1.5m

7. Electro-Magnetic Compatibility

The driver is tested and approved according CISPR 15 ed. 7.2.
However the position of the wiring can negatively influence the EMC behaviour of this HID-system. Therefore it is advised to pay attention to the following:

- Place the mains-wires in such a way, that they are not in parallel with the lamp-wires.
- Make the spacing between lamp- and mains-wires as big as possible.
- Keep the mains-wires close together.
- Keep the lamp-wires close together and preferably as short as possible However do not exceed the maximum allowed length of the lamp-wires.

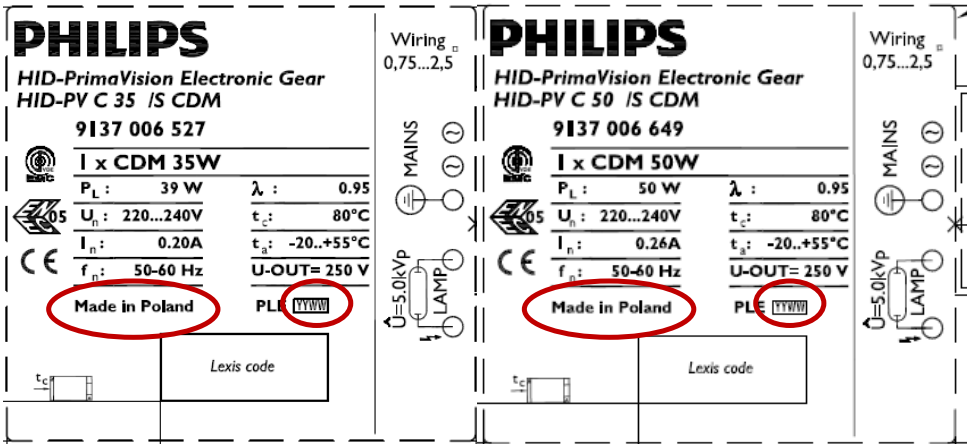
8. Factory handling

Fixation in luminaire

Permanent force on connectors should be prevented. This stress may cause fatigue on the solder joints and may result in premature lifetime failures. This can be prevented by carefully selecting wires (flexible), luminaire construction (free spaces for wires) and the application of strain relieves.

Traceability

For traceability reasons year and week of production, as well as production-location, can be found on the product-label.



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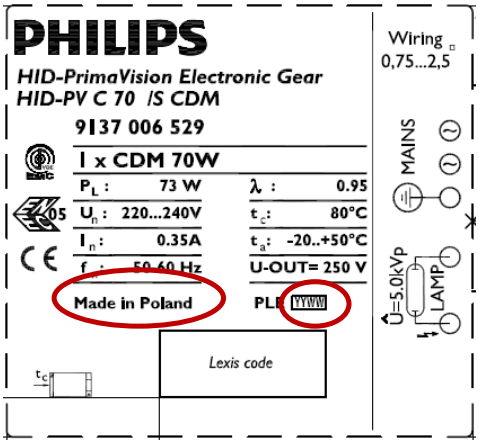

The production-code consists of production year and week.

Example: If a product has been marked 0810 :

- Position 1 and 2 are the last digits from the year of production. The digits 08 indicates that the product has been made in 2008
- Position 3 and 4 indicate the week of production. The number 10 indicates that the product has been made in week 10.
- Furthermore, each product has a serial number, including barcode. (This is depending of the production-location)

9. Installation / Mounting

Lamps that can be driven by the driver

The HID-PV C 35W /S can drive the following lamps:

- All CDM 35W lamps.
- Excluding: CDM-Tm 35W lamps.

The HID-PV C 50W /S can drive the following lamps:

- All CDM 50W lamps.

The HID-PV C 70W /S can drive the following lamps:

- All CDM 70W lamps.

The drivers are not compatible with the following lamps:

- Metal halide quartz lamps

Suitable application for this driver

This product is designed mainly for luminaires that are working in an Indoor environment (IP23 or superior casing).
Typical applications are:

- Spot and accent lighting
- Downlighting and general lighting
- Mini flood lighting
- Main segment is retail (shops)
- Secondary segments are office and hospitality

The PrimaVision Compact range is not intended for Outdoor use due to the following outdoor constraints:

- High humidity and condensation risks
- Vibrations e.g. when the luminaire is mounted on a public lighting pole

- Lightning surges on the mains. Outdoor electronics gear are 4kV protected but the HID-PV C 35W/50W/70W is protected up to 2kV.

Therefore, it is the responsibility of the luminaire manufacturer and the installer to take into account the above and implement adequate protection for the above. Here are some requirements for Outdoor applications:

- Place the driver in an IP54 or higher environment
- Avoid placing the driver or luminaire in high poles
- Place adequate Lightning protection in the lighting installation
- Planner should take it into account for Cost of Ownership calculations and maintenance plans.

If the above points are not taken into account in the design and the installation, Philips Lighting Electronics will have the option not to apply the standard guarantee.

Maximum number of drivers per MCB

The maximum number of drivers, which can be connected to a B type 16A is 24x 35W or 50W or 20x 70W. For other types of MCB's apply conversion table below:

Conversion table for max. Quantities of gear on other types of Miniature Circuit Breaker

MCB type		Relative number of gear
B	16 A	100% (see above)
B	10 A	63%
C	16 A	170%
C	10 A	104%
L, I	16 A	108%
L, I	10 A	65%
G, U, II	16 A	212%
G, U, II	10 A	127%
K, III	16 A	254%
K, III	10 A	154%

Remark: L, G and U are old type MCB.

DC-operation

This driver is not designed for DC-operation.

10. Operating in abnormal conditions

Active Thermal protection

If the driver is used at a too high temperature an internal thermal protection will protect the driver against damage; the driver will switch off the lamp. Mains voltage needs to be reset in order to reset thermal protection.
The thermal protection becomes active at T_{case} > 100°C.

Mains voltage

The driver is designed to operate within an operational/safety range of 180-264V. However the performance is guaranteed within the performance range of 198-254V. Within this range, the lamp power is regulated within ±3% of its nominal power. (Valid for a lamp-voltage between 80 and 90V)

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Over voltage

The driver has a limited protection against over voltage, it is advised to prevent higher mains voltages than +10%. This will however negatively influence the lifetime and reliability.

Lightning and power surges

Protection against surges because of lightning are built in the gear.
IEC61547, surge levels: 1.0kV Line to Line and 2.0kV Line to GND

End Of Life (EOL) lamp protection

The driver has a protection against an End Of Life Lamp. The driver will detect the failing lamp and switch off. After re-lamping, the mains has to be switched off and on, in order to reset the driver.

Mains dips

If mains dips occur that cause the lamp to extinguish, the driver will automatically re-ignite the lamp for a maximum of three times after a cooling-down period of approximately 10 minutes. After the last attempt the mains power needs to be cycled to reset the internal ignition timer in the driver.

11. Advised communication

Philips Lighting Electronics advises to communicate the following information to your customers via your preferred media: Catalogues, brochures, Product datasheets, Mounting instructions, Internet and Intranet.

Technical

Due to lamp characteristics, this driver needs some time to re-ignite (10…15 minutes) after switch off.
When the lamp has reached end of life, the driver will switch off the lamp in order to avoid lamp overheating. After lamp replacement, the mains voltage will have to be reset and the system will work normally. The driver does not need to be replaced. The PrimaVision driver range is equipped with an internal thermo-switch that will prevent loss of driver lifetime due to overheating in the luminaire/installation.
Check also chapter 9 for relevant technical information

Marketing

The use of PrimaVision Compact in your luminaire will provide your customer the following benefits:

- **Optimum system performance**
  Development of CDM lamps and driver is in one hand. Every product is tested extensively, requiring a million burning hours before a system can be released. The result is an optimal light performance with Philips MASTERColour CDM lamps.
- **Flicker free operation**
- **30 to 40% longer lamp lifetime**
- **10% energy saving compared to a Electromagnetic system**
- **Safe and comfortable behaviour when lamp reaches End of Life**

Furthermore, the PrimaVision Compact range has low losses, which guarantees maximum energy savings and limit heat generation, translating into a longer driver lifetime.

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Guarantee

The guarantee of 3 and 5 years for Philips Electronics is applicable for this product. For more information about guarantee, please visit our website: Http://www.lampsandgear.philips.com/

12. Frequently Asked Questions

Is the new HID-PV Compact Standard compatible with the existing generation?

Yes. The outer dimensions of the PrimaVision Compact S are the same as the predecessor; enabling drop-in replacement. However a different type of connector is used.
The EMC performance is complying with the new CISPR 15 ed 7.2 requirements.

13. For more information

Please contact your local sales representative.
Check OEM application guide for general information about electronic gear.
Visit our web-site http://www.philips.com/oem

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