

HID-PV m 20-35 /S CDM



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9137-006-56766 sht-460 2011-04-12

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1. Introduction

The PrimaVision Mini driver is the smallest HID gear in the market. This breakthrough in technology has been possible by joint development of the driver, lamp and input from OEMs.

The PrimaVision Mini 20W HPF will enable you to have a better power factor as with the 20W LPF. This is especially important in applications with a higher number of luminaires

The drivers have improved EMI and are thus CISPR-compliant.

2. Version management

This is the design-in sheet for the PrimaVision Mini 20W-35W /S driver.

Status of the product: Final

Previous status: Final

12-04-2011: **9137-006-56766 sht-460 2011-04-12**

Update chapter 9; make table with number of drivers per MCB uniform.

22-11-2010: **9137-006-56766 sht-460 2010-11-22**

CISPR15 ed.7.2 compliance

The "hot"- lamp-wire has changed position with the "cold"- lamp-wire.

30-05-2007: **Version 1.0**

Final version

Version 0.1

Draft version

3. Ordering

Technical name:	HID-PV m PGJ5 20 /S CDM HPF	HID-PV m PGJ5 20 /S CDM LPF
12NC:	9137 006 56766	9137 006 01466
EAN3:	8727900771282	8711500536099
EOC:	872790077128200	871150053608230

Technical name:	HID-PV m 20 /S CDM HPF	HID-PV m 35 /S CDM
12NC:	9137 006 46166	9137 006 53666
EAN3:	8727900890631	8727900883411
EOC:	872790089063100	872790088341100

Product	Qty box/pallet	Net weight (kg)	Box Dim. LxWxH (mm)	Pallet Dim. LxWxH (mm)
HID-PV m PGJ5 20 /S CDM HPF	12/1440	0.168	185x115x120	1200x800x550
HID-PV m PGJ5 20 /S CDM LPF	12/1440	0.080	185x115x120	1200x800x550
HID-PV m 20 /S CDM HPF	12/1440	0.168	185x115x120	1200x800x550
HID-PV m 35 /S CDM	12/1440	0.168	185x115x120	1200x800x550

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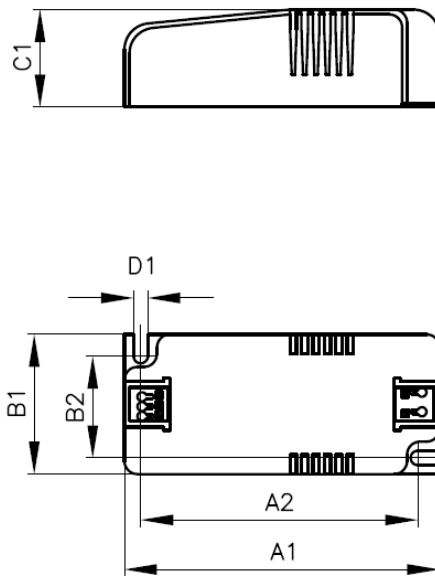
4. Dimensions and mechanical design-in

Mechanical design-in

This driver should be fixed with the bottom of the driver onto the housing of the luminaire. It should be mounted by means of 2 screws (M4). (Max allowed torque 1Nm)

Dimensions

The PrimaVision Mini Standard drivers share the same housing. Therefore all dimensions are the same as it predecessor, to enable drop-in replacement.

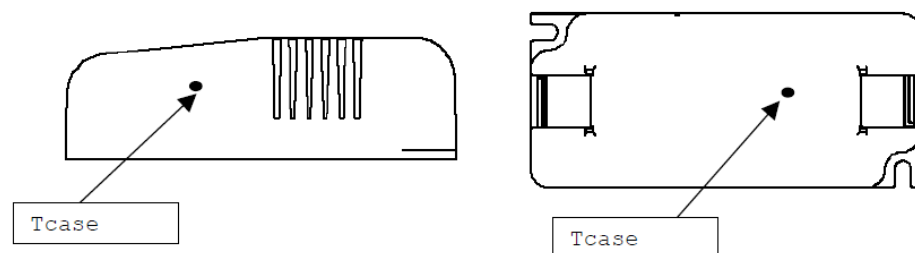


A1 (mm)	A2 (mm)	B1 (mm)	B2 (mm)	C1 (mm)	D1 (mm)
97.0	88.0	43.0	34.0	30.0	4.2

5. Temperature behaviour

T_{case} of HID-PV m PGJ5 20 /S CDM LPF

The T_{case}-points are the positions shown on the drawing below.



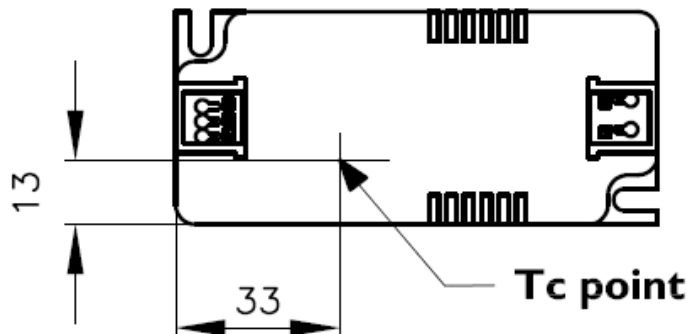
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Lifetime 40k hours/90% survivals:

	$T_{case-max}$	$T_{ambient-max}$
HID-PV m PGJ5 20 /S CDM LPF	65°	40°C

T_{case} of HID-PV m 20 /S CDM HPF, HID-PV m PGJ5 20 /S CDM and HID-PV m 35 /S CDM

The T_{case} -point is the position shown on the drawing below.



Lifetime 40k hours/90% survivals:

	$T_{case-max}$	$T_{ambient-max}$
HID-PV m PGJ5 20 /S CDM HPF	85°C	50°C
HID-PV m 20 /S CDM HPF	80°C	50°C
HID-PV m 35 /S CDM	85°C	50°C

Please note that it is necessary for the PrimaVision Mini driver to establish a **good** thermal contact between the bottom of the driver 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 gear 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.

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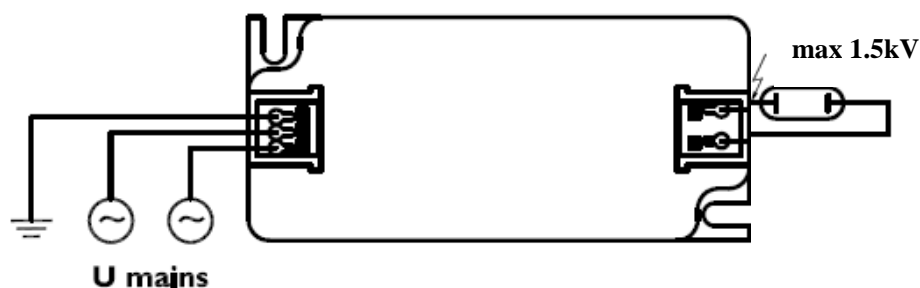
6. Wiring

Important note: The new generation of HID-PV mini drivers is modified to obtain a better EMI-behaviour. As a consequence the “hot”- lamp-wire has changed position with the “cold”- lamp-wire.

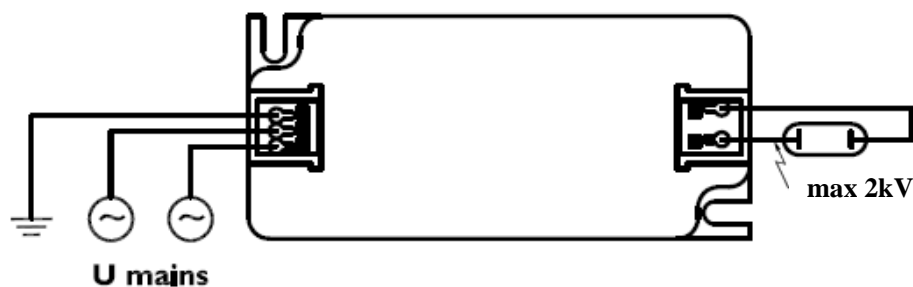
Some lamp-holders are equipped with a thin and a thick wire. In this case, the thin wire should be used as “cold”- wire, since it can not withstand the ignition-voltage.

Above mentioned is not valid for the HID-PV m PGJ5 20 /S CDM LPF, since this driver already met the CISPR-requirements.

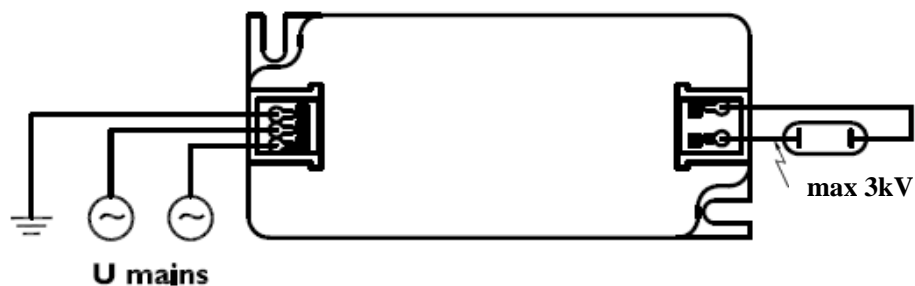
HID-PV m PGJ5 20 /S CDM LPF



HID-PV m PGJ5 20 /S CDM and HID-PV m 35 /S CDM



HID-PV m 20 /S CDM HPF



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Connector type:	WAGO type 250; push in contacts 45 degrees
Wire cross section:	0.5..1.5 mm ² massive or stranded
Strip length	8.5-9.5 mm
Max cable capacitance lamp-wires:	200 pF
Maximum length lamp-wires:	2 meter for cable without earth wire. 1 meter for a cable with earth wire..

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.

Plastic luminaires (Class II)

When a PrimaVision Mini driver is applied in a plastic luminaire, there is no need to pay much attention to EMC. Since there is no metal applied, it is not possible for the high frequency disturbance of the driver to couple interference to the mains-connection.

Metal luminaires without earth-connection (Class II)

When PrimaVision Mini gear is applied in a plastic luminaire with metal parts, the high frequency disturbance generated by the driver can be coupled to these parts. This means that interference is coupled to the metal parts. So in this case it is recommended to measure if the luminaire is EMI compliant.

Metal luminaires with earth-connection (Class I)

In the case of PrimaVision Mini mounted in a metal class-I luminaire, the gear will couple a rather large amount of high frequency disturbance to the luminaire. So a connection between the earth terminal of the gear and the earthed luminaire has always to be made.

Furthermore it is advised to avoid mains wires running over the top of the gear because of coupling distortion directly to the mains wires.

8. Factory handling

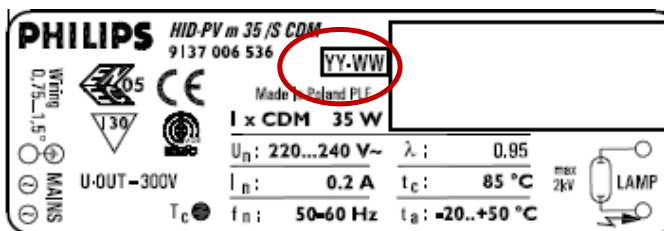
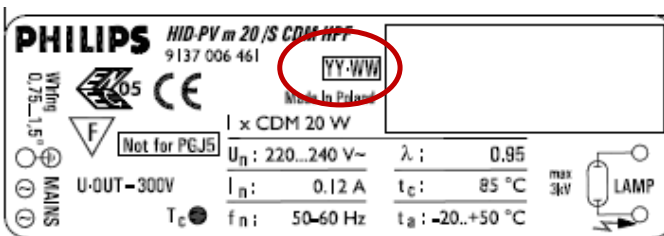
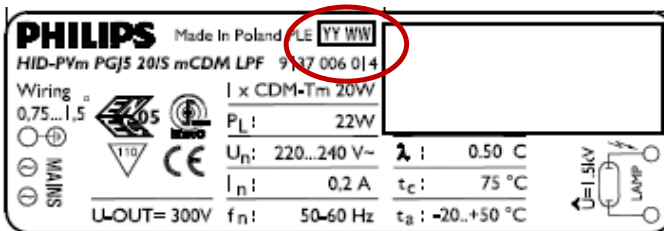
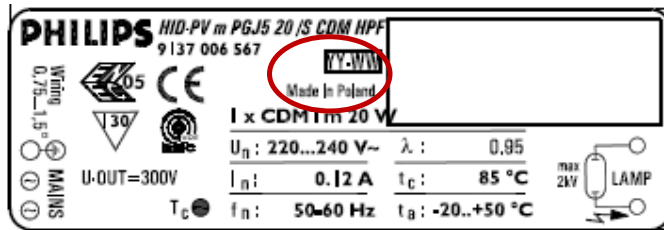
Fixation in luminaire

Permanent force on components and 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.

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Traceability

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



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)

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9. Installation / Mounting

Lamps that can be driven by the gear

Driver	Lamp
HID-PV m PGJ5 20 /S CDM HPF	CDM-Tm PGJ5 20W
HID-PV m PGJ5 20 /S CDM LPF	CDM-Tm PGJ5 20W
HID-PV m 20 /S CDM HPF	All CDM 20W lamps, except Tm PGJ5
HID-PV m 35 /S CDM	All CDM 35W lamps, except Tm PGJ5

Suitable application for this driver

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

The PrimaVision Mini 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 electronic drivers are 4kV protected but the HID-PV mini drivers are 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 MCB, can be found in the table below:

Driver type	Maximum number of drivers per MCB			
	B16A	B10A	C16A	C10A
HID-PV m PGJ5 20 /S CDM LPF	36	23	61	37
HID-PV m PGJ5 20 /S CDM HPF	24	15	41	25
HID-PV m 20 /S CDM HPF				
HID-PV m 35 /S CDM				
Relative number of drivers	100%	63%	170%	104%

DC-operation

This driver is not designed for DC-operation.

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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 of HID-PV m PGJ5 20 /S CDM LPF drivers becomes active at $T_{\text{case}} > 87^{\circ}\text{C}$.

The thermal protection of HID-PV m 20 /S CDM HPF, HID-PV m PGJ5 20 /S CDM and HID-PV m 35 /S CDM drivers becomes active at $T_{\text{case}} > 95^{\circ}\text{C}$.

Mains voltage

The driver is designed to operate within a 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 $\pm 3\%$ of its nominal power.

Under/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. The driver will not start if the mains voltage is lower than 160V.

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 this lamp and switch off. The mains has to be reset 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 after a cooling-down period of approximately 10 minutes.

The driver will try to re-ignite the driver for maximum 30 minutes.

If several mains dips occur in short time, the re-ignite time will be added to this maximum of 30 minutes. After this 30 minutes, the driver will shut-off and the mains 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

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replaced. The PrimaVision gear 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:

- **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**

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/](http://www.lampsandgear.philips.com/)

12. Frequently Asked Questions

Why is the 20W LPF version not potted compared to the other versions?

The dissipation of the 20W LPF is significantly lower and therefore no potting material is needed, to transport the temperature to the outside of the driver.

Is it planned to have a PCB version of this product?

Only the 20W LPF version is available as PCB version. The other products need to be potted, so a PCB version is not possible.

Is it planned to have an Independent version of this product?

Yes, independent drivers of this products are available.

Can I use this driver in a 24hr-7days installation?

No, this driver is not suitable for 24/7 operation.

13. For more information

Please contact your local sales representative.

Check OEM application guide for general information about electronic gear.

Visit our web-site www.Philips.com/eHID