

**PHILIPS**

Automotive

LED Retrofit



## FAQs

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# General – LED retrofit

**Question** What is LED retrofit? For which applications?

**Answer** LED retrofit is a way for drivers to upgrade their old halogen/conventional bulbs to more modern LED lights. In terms of which upgradable applications this applies to, it's helpful to separate interior and exterior lights:

Interior:

-  Roof and reading lights
-  Dashboard light
-  Glove compartment light
-  Trunk light

Exterior:

-  Headlights
-  Front / rear fog lights
-  Front position / parking lights (front and rear)
-  Front / rear indicators
-  License plate lights
-  3rd stop lights
-  Stop lights

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**Question** How do I know if the Philips LED Retrofit is compatible with my headlamp?

**Answer** Philips LED Retrofit lights are compatible with a wide range of vehicle models. But to check your specific car, take the following steps:

1. Measure the diameter of your headlamp and the space that you have behind the headlight fixture (i.e. the space behind the secured bulb). To be able to install the LED retrofit you need a minimum 60mm headlamp diameter and 70mm space behind the fixture.
2. Check if the connector is also used as a bulb holder. If this is the case, you won't be able to mount the LED Retrofit.

If in doubt, please check with your dealer/installer and they'll be able to help.

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**Question** How do I know which LED I should use to replace my old bulb?

**Answer** Simply match up the LED with the corresponding ECE name. To make it easy, here is a table matching halogen bulbs with the compatible LED version.

Halogen type	LED name
H4	LED-HL[-H4]
H7	LED-HL[-H7]
H8/H11/H16	LED-FOG[-H8/H11/H16]
Festoon T10,5x30mm	LED-FEST[30mm]
Festoon T10,5x38mm	LED-FEST[38mm]
Festoon T10,5x43mm	LED-FEST[43mm]
W5W	LED-T10[-W5W]
W16W	LED-T16[-W16W]
W21W	LED-T20[-W21W]
W21/5W	LED-T20[-W21/5W]
WY21W	LED-T20[-WY21W]
P21W	LED-S25[-P21W]
PY21W	LED-S25[-PY21W]
P21/5W	LED-S25[-P21/5W]
-	LED-CANbus[-5W]
-	LED-CANbus[-21W]

# Product features – LED Retrofit

**Question** [Why do some Philips LED-HL have a heat sink, while others have a fan?](#)

**Answer** How well you manage the heat generated by a bulb is key to how that bulb performs and how long it lasts. As an automotive original equipment manufacturer (OEM), Philips understands the different thermal requirements of car headlamps. And has designed three advanced thermal management systems: Airflux, AirCool, and ThermaCool.

Depending on the power of the LED, the amount of heat to dissipate, the type and size of the headlamp, Philips LED retrofit bulbs will use the most appropriate thermal management system – whether that cooling is active (fan) or passive (heat sink).

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**Question** [Is the Philips LED range environmentally friendly?](#)

**Answer** Yes, the Philips LED Retrofit range is an eco-friendlier choice for three main reasons:

1. There is a significant energy saving, consuming less overall resources and emitting less CO<sub>2</sub>.
  2. The range is fully compliant with RoHS / REACH, which means no hazardous materials that harm the environment are used.
  3. Because the bulbs last much longer than conventional lights, they need to be replaced less frequently. This reduces waste generated and overall resource consumption.
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**Question** [What causes the polarity issue with LED lights?](#)

**Answer** Regular incandescent bulbs can draw current in either direction, there are no “positive” or “negative” sides on the bulb. The bulb will work regardless of which direction it is inserted.

LED bulbs, however, only draw current in one direction – it’s like a battery with a positive and negative side. If the LEDs are incorrectly inserted they will not work. And like a battery, the solution is to simply flip the LED so the connections are the other way round.

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**Question** [For vehicles that have the progressive on/off function for exterior lamps, does this feature continue to work after installing LEDs?](#)

**Answer** Philips LED Retrofit range has been designed to perfectly replace the current light setup in your car. This means that the progressive shutting on or off feature will continue to function after you upgrade to LED lights.

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**Question** [On the driver box of the LED lamp it says: “Caution: Do not touch – Hot surface”. How hot will this become? And can it damage cables or other car parts?](#)

**Answer** It’s important to ensure the LED lamp is installed correctly. We strongly recommend that the driver box is attached safely to a metal surface, with the plastic ties provided. This prevents the box from moving while the vehicle is in motion. And by attaching to metal, there is no risk of heat damaging other car parts.

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# Installation – LED retrofit

**Question** How do I replace the incandescent bulb with an LED bulb? Is it difficult?

**Answer** The entire Philips LED Retrofit range is designed to be a retrofit of halogen and conventional bulbs, so they are easy to replace without any specialist knowledge.

Before purchase, make sure there is enough space in the lamp to house the new LED bulb (the compact design ensures this LED range is compatible with most car models, see question 2 for further information). To install, simply follow the guidance on or in the packaging.

**Question** Why after installing an LED light do I get an error message on the dashboard?

**Answer** Some cars are equipped with a system to warn the driver when one of the lights fails. This warning system sends electrical impulses to check the lights are functioning.

However, LEDs draw much lower wattage than conventional lights (consuming less power). So when the system makes its check, the power emission is too low to be detected. Therefore, it erroneously thinks the light has malfunctioned, when in fact it's working correctly. In such cases, we have developed a CANbus adapter which converts the power and prevents this incorrect error message issue.



LED bulb  
Canbus Not compliant

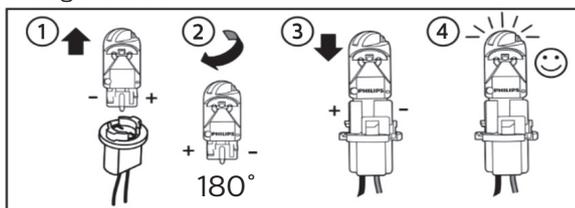
LED bulb + CEA5W  
Canbus compliant

**Question** I've installed the LED but it does not light up, how do I resolve this?

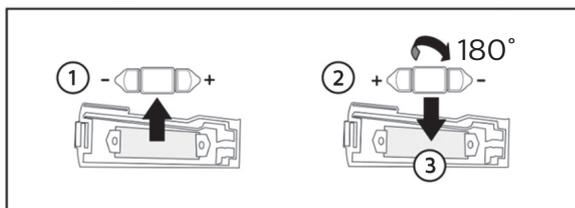
**Answer** If your Philips LED Retrofit doesn't light up, you probably need to "reverse the polarity" by flipping the LED. Philips LED Retrofit bulbs work like batteries with a positive and negative polarity. If this issue arises, simply follow these steps:

1. Remove the Philips LED from the socket.
2. Flip the LED over, so the connectors are reversed.
3. Re-insert the LED back into the socket.
4. Then check the LED lights up correctly.

Wedge-based LED



Festoon LED



# Installation – LED retrofit

**Question** [After installation of the LED, my car shows a fast flash error, as if my light is out or broken. Why is this?](#)

**Answer** Error messages appear because the LED bulb wattage is much lower than conventional bulbs, which can make an outage warning system unable to detect a correctly functioning bulb.

If your car shows a fast flash upon installation of an LED bulb, it might be wise to purchase and install a Philips CANbus, which will remove these false warnings from your dashboard.

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**Question** [After installing the LED, my car does not start. What should I do?](#)

**Answer** After installing an LED bulb, some cars go into a limp mode. This is because the LED has a different resistor value than an incandescent bulb, and the car's computer is looking for the resistor value of the incandescent bulb. The car goes into limp mode to notify the driver that something is not working. Thankfully this happens rarely and the issue can be easily resolved.

Firstly, verify that the limp mode is being caused by the LEDs by replacing them again with the incandescent bulbs. If the car now starts ok, the LED bulbs were the likely cause of the limp mode. In this case, you will need to install a load resistor i.e. a CANbus adapter.

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**Question** [When I installed an LED signalling light, the indicator started blinking more rapidly. How do I stop this?](#)

**Answer** To prevent the blinking rhythm speeding up, a CANbus adapter needs to be installed (for signalling products, these adapters are provided in the box when you purchase). Installing the adapter will ensure the LED light blinks at the same speed as the original conventional lamp. If you don't install the adapter, the LED will blink rapidly, as if one of the bulbs is broken.

To install the CANbus adapter please follow the instructions provided. Remember: always attach the CANbus to metal, to avoid any heat damage to other parts of your vehicle.

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# General – CANbus

Question [What does CANbus stand for?](#)

Answer It stands for Control Area Network Bus, and it monitors your vehicle's conditions during operation. Most of the newest European models are equipped with CANbus, therefore we strongly advise you to check with your dealer which system your car has, prior to purchase.

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Question [Which CANbus adapter do I need?](#)

Answer Philips provide a range of CANbus adapters for the different car lighting applications:  
The 5W CANbus is used when replacing 5W conventional bulbs, typically for interior applications, license plate lighting, and position lights. The 21W CANbus is used to replace 20W conventional bulbs, for exterior signalling applications such as stop, reverse and signalling lights.

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# Product feature – CANbus

Question Does the CANbus remove the residual current when the LED lamp is off?

Answer The Philips CANbus are designed to regulate the amount of wattage within the electrical system before it reaches the LED. When the LED is off, the remaining power is drawn by the CANbus, so the LED stays off.

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# Installation – CANbus

**Question**    [How do I install a CANbus adapter?](#)

**Answer**    If your car has a dashboard error message, experiences fast flash or goes into limp mode upon installation of an LED bulb, you'll likely need to purchase and install a Philips CANbus adapter.

To install the Philips CANbus adapter, please refer to the diagram below and follow the instructions provided in the box.

