

Avoid false bulb failure warnings by installing the Philips LED CANbus Adapter.

**CANbus Adapter.** 

Some cars use the vehicle's computer network (CANbus) system to verify the functioning of the vehicle's lights. Because LED bulbs have a lower wattage and draw much less power than conventional bulbs, when the system runs a check, the electrical resistance of an LED may be too low to be detected.

This creates a false warning that one of the bulbs has failed. Philips LED CANbus Adapters help prevent false bulb failure warnings. Installation of the adapters takes just minutes.

In addition, a lot of auto manufacturers use PWM (or pulse width modulation) to precisely control the voltage to a bulb. One of the benefits of doing this is to improve bulb life.



These quick, voltage pulses (PWM) do not give a bulb filament time to cool down and dim, so for halogen bulbs the pulses are not noticeable.

However, with an LED bulb, these pulses are enough to turn the LEDs off and on very quickly, which results in a flashing of the light. The CANbus adapters we have for interior and exterior bulbs eliminate any issues introduced when installing an LED in place of a halogen bulb.

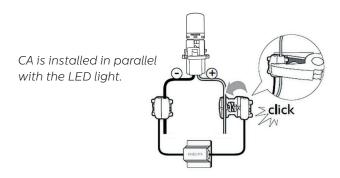


# Philips CANbus Adapter (CA) Frequently Asked Questions

## How do I install a CANbus Adapter?

If your car has a dashboard error message, experiences fast flash, or goes in limp home mode after installing an LED bulb, you may need to install a Philips Ultinon LED CANbus Adapter (CA).

See the image below for installation instructions:



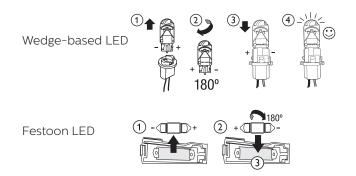
#### Why is there a polarity issue with LED bulbs?

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. So if the LEDs are inserted incorrectly, they will not work. The solution is to simply flip the LED.

If your Ultinon LED bulb doesn't light up when you first install it, take it out, flip it 180°, and reinstall it.

- 1. Remove the LED from the socket
- 2. Flip the LED 180°
- 3. Insert the LED back into the socket
- 4. Check to ensure the LED lights up

Do not force the LED or alter the socket. Be sure that you have the right LED for your application.



**Note:** in rare cases, vehicles may not adapt to a CANbus Adapter.

## Which Philips CANbus Adapter do I need: 5W or 21W?

Find your Philips LED part number below to check whether you'll need a CANbus 5W or CANbus 21W adapter.

# 6000k White

Philips Part No.	Industry Part No.	Also Fits	CANbus Adapter
168ULWX2	168WLED	158, 194, 12961	CANbus 5W
194ULWX2	194WLED	158, 168, 12961	CANbus 5W
578ULWX1	578WLED	212-2, 211-2, 6411, 12866	CANbus 5W
921ULWX2	921WLED	904, 906, 912, 916	CANbus 21W
1156ULWX2	1156WLED	1141, P21W	CANbus 21W
1157ULWX2	1157WLED	2057, 2357, P21/5W	CANbus 21W
12961ULWX2	12961WLED	158, 168, 194	CANbus 5W
3156ULWX2	3156WLED	3155, 3456, 4156	CANbus 21W
3157ULWX2	3157WLED	3047, 3057, 3457, 4057, 4114, 4157	CANbus 21W
6411ULWX1	6411WLED	212-2, 211-2, 578, 6411, 12866	CANbus 5W
6418ULWX1	6418WLED	12844, 12854, DE3423, DE3425	CANbus 5W
7440ULWX2	7440WLED		CANbus 21W
7443ULWX2	7443WLED	7444	CANbus 21W
DE3175ULWX1	DE3175WLED	12818, DE3021, DE3022	CANbus 5W

Intense Red					
Philips Part No.	Industry Part No.	Also Fits	CANbus Adapter		
1156RULRX2	1156RLED	1141, P21W	CANbus 21W		
1157RULRX2	1157RLED	2057, 2357, P21/5W	CANbus 21W		
194RULRX2	194RLED	158, 168, 2825, 12961	CANbus 5W		
921RULRX2	921RLED	904, 906, 912, 916	CANbus 21W		
3157RULRX2	3157RLED	3047, 3057, 3457, 4057, 4114, 4157	CANbus 21W		
7440RULRX2	7440RLED		CANbus 21W		
7443RULRX2	7443RLED	7444	CANbus 21W		

Intense Amber					
Philips Part No.	Industry Part No.	Also Fits	CANbus Adapter		
1156AULAX2	1156ALED	1141, P21W	CANbus 21W		
1157AULAX2	1157ALED	2057, 2357, P21/5W	CANbus 21W		
194AULAX2	194ALED	158, 168, 2825, 12961	CANbus 5W		
3157AULAX2	3157ALED	3047, 3057, 3457, 4057, 4114, 4157	CANbus 21W		
7443AULAX2	7443ALED	7444	CANbus 21W		

X1 = 1 bulb per pack / X2 = 2 bulbs per pack

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