



Reward 2012

Ford Lane Keeping Alert



Ford Lane Keeping Alert is designed to warn the driver by vibration of the steering wheel when the front view camera detects that an unintentional lane departure event is likely to happen. A camera mounted at the top of the windscreen monitors the road ahead and the images are processed to identify lane markings. At speeds above 65km/h, the system will warn the driver that the car is departing from the intended lane by vibrating the steering wheel. The system will not automatically return the vehicle to its lane but is intended to alert the driver to take appropriate action. No warning is given if the direction indicators are used, as the system identifies that the driver is intending to depart from the lane of travel. Similarly, if the system detects lateral accelerations above a certain level, the lane departure is assumed to be a deliberate manoeuvre by the driver.

The system is designed to work on highways and motorways where the majority of lane departure accidents occur. At speeds less than 65km/h, typical of urban driving, the warnings are suppressed in order not to annoy the driver with continual signals in an urban environment.

The system works with lines on one or both sides, so long as they are sufficiently distinct to be recognised by the camera.

What is the safety benefit?

Lane Keeping Alert is a technology designed to assist the driver in avoiding accidents caused by unintended lane departure. These types of accidents are quite frequent, especially on highways and on rural roads. Impact speeds in these sorts of accidents can be high and the injuries sustained by the vehicle occupants can be severe.

It is estimated that, if a system like Lane Keeping Aid were fitted to every van/minibus like the Transit Connect, it could provide a useful benefit in over a hundred serious injuries and some 750 slight injuries every year.

How has the system been assessed?

The test procedures were developed jointly between Ford and one of Euro NCAP's independent test laboratories, and covered repeatability, warning generation in curves, false alarm and functionality in threshold range. The test runs were based on test procedures defined in the ISO specification for Lane Departure Warning Systems.

Existing research material and additional studies were used to establish the extent to which drivers would turn on the system and to which they would react appropriately to the warnings. These studies were used in the calculation of the safety benefit for Lane Keeping Alert.

What are the limitations?

Lane Keeping Alert can be switched off by the driver and, if it is, it does not switch back on automatically at the start of the next journey.

The system needs lane marking that are sufficiently distinct in order to work properly and may not be able to detect lines if there is mud or snow on the ground. Similarly, the camera is situated at the top of the windscreen and needs a clear view of the road. The camera is deliberately sited within the area cleared by the windscreen wipers but, if its view of the road is obscured by mud or fog, the system will not be able to detect lane markings. The system will automatically turn on the electrically heated windscreen demister if it senses that its view of the road is impaired. One lane marking is sufficient for the system to work. This has a significant impact on availability.



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