

## Lane Keep Assist

LKA is an enhancement of the Lane Departure Warning (LDW) system and is available only if LDW is fitted. It helps to keep the vehicle in the current carriageway lane, such as while driving on a highway. When the vehicle drifts too close to lane markings on either side, without the turn signals being used, a gentle rotational force is automatically applied to the steering wheel. This can be felt by the driver and it indicates that a steering correction should be made.

Lane Keep Assist (LKA) is a driving aid only. It remains the driver's responsibility to drive with due care and attention, in a manner which is safe for the vehicle, its occupants and the other road users. The driver should still observe all road markings that are not detected or recognized by LKA.



Drivers should not rely on Lane Keep Assist to do their driving for them. The systems can take corrective action only if the lane marking is being approached very gradually: more rapid departures cannot (and should not) be corrected by Lane Keep Assist systems.

Lane Keep Assist is designed to be completely unobtrusive: it is not active if the indicators are activated, the driver can easily (override) steer against it, and the system can be entirely disengaged if desired. When an override is made, and a lane change is taken without use of the turn signals, LDW alerts will be triggered.

## Driver Drowsiness Detection

Driver Drowsiness Detection works in conjunction with Lane Keep Assist. The software function is integrated in the Image Processing Control Module, and becomes active at roads speeds of 40mph (65km/h).



Extended and long journeys on highways are exhausting and quickly lead to loss of concentration. The driver drowsiness detection continuously analyses the steering behavior of the driver. Using steering angle data, phases during which the driver does not steer for a brief period and then makes an abrupt correction are identified. This is often a sign of failing concentration and arising tiredness.

If driver drowsiness is detected, the vehicle displays the warning (Take a break) in the Instrument panel for 30 seconds along with an audible chime. If driving continues, a further warning displays in the Instrument panel, again with an audible chime, until the OK button on the steering wheel menu control is pressed.

The function combines the frequency and strength of these reactions with other data, such as vehicle speed, time of day and use of other indicators to calculate a tiredness index.

Detection parameters:

- Camera and Lane Assist function
- Steering angle speed of movement
- Steering angle position
- Vehicle road speed
- Yaw rate
- Indicator switch operation
- Tiredness index