

**EURO NCAP Requirements**

**Submitted by**

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# Requirements/Important information:

# LKA should detect unintentional lane change towards/across the edge of the lane.

(source : EURO NCAP: section1)

1. LKA (can) shall use the lateral support system to restore control of the vehicle while countering the unintentional lane change.

(source : EURO NCAP: section1)

1. LKA shall automatically warn driver (e.g. audible signal, vibrating steering wheel etc.) when car gets closer to the lane marking.

(source : EURO NCAP: section1 and definition of LDW)

1. LKA may function while only one distinct marking on either side (no/ non distinct marking on other).

(source : EURO NCAP: section1)

1. LKA shall make sure the driver remains in control at all times (as long as LKA active).

(source : EURO NCAP: section1)

1. Care shall be taken that the Driver shall not get distracted by LKA warning.

(source : EURO NCAP: section1)

1. LKA system shall be available only if vehicle possess Electronic Stability Control system in compliance with regulatory requirments.

(source : EURO NCAP: section1)

1. LKA shall be detect the drift from the delineated edge line of the current travel lane and support for automatic heading correction.

(source : EURO NCAP: section2 -definition of LKA)

1. LKA shall determine the lateral deviation from path which is distance between current center of vehicle and center of intended path.

(source : EURO NCAP: section 3.2)

1. The effectiveness of the LDWS shall not be adversely affected by magnetic

or electrical fields.

(source : Regulation: 130 UNECE)

1. Whenever the system is active, LDWS shall warn the driver if the vehicle crosses over a visible lane marking for the lane in which it is running, on a road with a directional form that varies between straight and a curve having an inner lane marking with a minimum radius of 250m, when here has been no purposeful demand to do so.

(source : Regulation: 130 UNECE)

1. The warning above shall be noticeable by the driver and be provided by:

1. Atleast two warning means out of optical, acoustic and haptic, or

2. One warning means out of haptic and acoustic, with spatial indication

about the direction of unintended drift of the vehicle\

(source : Regulation: 130 UNECE)

1. The warning mentioned above may be suppressed when there is a driver action which indicates an intention to depart from the lane

(source : Regulation: 130 UNECE)

1. LDWS shall also provide the driver a warning as an yellow optical warning signal to detect failure.

The failure warning signal shall be activated and remain activated

while the vehicle is being driven and be reactivated after a subsequent ignition off – ignition on cycle as long as the failure exists

Failure must be detected when:

the power source to any LDWS component or any electrical connection between LDWS components disconnected.

(source : Regulation: 130 UNECE)

1. The LDWS shall be active at least at vehicle speeds above 60 km/h, unless manually deactivated.

(source : Regulation: 130 UNECE)

1. Where an optical signal is used for the lane departure warning, it may use the failure warning signal.

(source : Regulation: 130 UNECE)

1. The LDWS optical warning signals shall be activated either when the ignition (start) switch is turned to the on (run) position or when the ignition (start)

switch is in a position between the on (run) and start that is designated by

the manufacturer as a check position (initial system (power-on). This

requirement does not apply to warning signals shown in a common spaces.

(source : Regulation: 130 UNECE)

1. The optical warning signals shall be visible even by daylight; the satisfactory

condition of the signals must be easily verifiable by the driver from the driver's seat.

(source : Regulation: 130 UNECE)

1. When the driver is provided with an optical warning signal to indicate that the LDWS is temporarily not available, for example due to inclement weather conditions, the signal shall be constant. It may use failure warning signal for the same.

(source : Regulation: 130 UNECE)

1. At a periodic technical inspection it shall be possible to confirm the correct operational status of the LDWS by a visible observation of the failure warning signal status, following a power ON (off system OK, on

system fault present.

(source : Regulation: 130 UNECE)

1. If a vehicle is equipped with a means to deactivate the LDWS function, the following conditions shall apply as appropriate:

1. The LDWS function shall be automatically reinstated at the initiation of each new ignition on (run) cycle.

2. A constant optical warning signal shall inform the driver that the LDWS function has been deactivated. The same yellow warning failure signal can be used.

(source : Regulation: 130 UNECE).

1. LKA shall function at least under below conditions while performing unintended lane change

1. lane width betwee 3.5 to 3.7 m

2. Dashed line on one side having width of 0.1 to 0.25

3. Solid line on other side with 0.1 to 0.25

4. dry conditions

5. no precipitation

6. horizontal visibility till 1km

7. ambient temperature between 5 to 40 deg.

8. Natural ambient illumination excess of 2000 lux for day light with no strong shadow

9. uniform solid paved surface with consistent slope and no irregularity within a lateral distance of 3.0 m to either side. The minimum peak braking coefficient shall be 0.9.

10. test ready vehicle (correct tire pressure, aligned wheels etc).

(source : EURO NCAP: section 5)

1. The steering to counter lateral deviation, shall be smooth controlled manner and with minimal overshoot.

(source : EURO NCAP: section 6.4)

1. LKA shall ensure that it maintains the permitted (?) lane departure distance.

(source : EURO NCAP: section 6.4)

1. LKA shall intervene to maintain the vehicle within permissible lane departure distance such that maximum lateral position (Value ?) is achieved.

(source : EURO NCAP: section 6.4)

1. Minimum lateral and longitudinal position accuracy of the vehicle from the lae marking must be 0.03m atleast.(does that mean the line crossing by euro ncap is when the distance with marking is less than 0.03 m?)

(source : EURO NCAP section 4)