

IVISTA

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Intelligent Safety Index
Safety Assist
Lane Support System Rating Protocol

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Lane Support System Rating Protocol

1 Scope

This document specifies the rating methods of IVISTA China Intelligent Vehicle Index - Intelligent Safety Index - Safety Assist - Lane Support System.

2 Normative References

The following normative documents contain provisions which, through reference in this text, constitute indispensable provisions of this document. For dated references, only the dated edition applies to this protocol. For undated references, the latest edition (including all amendments) applies to this protocol.

GB/T 26773-2011 Intelligent Transport Systems - Lane Departure Warning Systems - Performance Requirements and Test Procedures

GB/T 39263-2020 Road Vehicles - Advanced Driver Assistance Systems - Terms and Definitions

GB/T 39323-2020 Performance Requirement and Testing Method for Lane Keeping Assist (LKA) System of Passenger Cars

Euro NCAP TEST PROTOCOL-Lane Support Systems

ISO 11270-2014 Intelligent transport systems - Lane keeping assistance systems (LKAS) - Performance requirements and test procedures

3 Rating Methods

3.1 General

The lane support system test has a full score of 21 points, including 9 points for LDP function test, 6 points for LDW function test and 6 points for ELK function test, as shown in Table 1.

Table 1 Overall Rating of Lane Support System

Item	Test Scenario	Direction of Departure	Rating Index	Score	Total Score
LDP function test	Straight LDP	Departure to the left	The actual crossing distance from the ground contact point on the outer edge of the front wheel on the departure side to the inner side of the lane boundary does not exceed the maximum allowable distance.	4.5	9
		Departure to the right		4.5	
LDW function test	Straight LDW	Departure to the left	At the warning moment, the actual crossing distance from the ground contact point on the outer edge of the front wheel on the departure side to the inner side of the lane boundary does not exceed the maximum allowable distance.	1.5	6
		Departure to the right		1.5	
	Curved LDW	Outward departure from left curve	Timely warning after departure	1.5	
		Outward departure from right curve		1.5	
ELK function test	ELK for departure from lane line	Departure to the left	The actual crossing distance from the ground contact point on the outer edge of the front wheel on the departure side to the inner side of the lane boundary does not exceed the maximum allowable distance.	3	6

ELK for heading to curb	Departure to the right	The actual crossing distance from the ground contact point on the outer edge of the front wheel on the departure side to the boundary between the road and the lawn does not exceed the maximum allowable distance.	3	
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3.2 LDP function rating

- a) For the straight LDP test, the maximum allowable crossing distance from the ground contact point on the outer edge of the front wheel of the SV on the departure side to the inner side of the lane boundary is 0.3 m;
- b) A total of 2 tests shall be carried out under each test cycle. If the results of both tests meet the corresponding requirements, 4.5 points will be given; otherwise, no point will be given.

3.3 LDW function rating

- a) The LDW warning mode shall include at least one perceptible audible or tactile warning (tactile warning refers to a warning that can stimulate the driver through touch, vibration, pressure or motion, such as steering wheel movement, steering wheel vibration and seat and pedal vibration); otherwise, no point will be given for LDW;
- b) If the straight LDP test scores full points, the straight LDW test will directly score full points. Otherwise, the straight LDW test shall be carried out;
- c) For the straight LDW test, at the warning moment, the maximum allowable crossing distance from the ground contact point on the outer edge of the front wheel of the SV on the departure side to the inner side of the lane boundary is 0.3 m, and 2 tests shall be carried out under each test cycle. If the results of both tests meet the corresponding requirements, 1.5 points will be given; otherwise, no point will be given;
- d) For the curved LDW test, 2 tests shall be carried out under each test cycle. If a warning is given in time when the vehicle departs from the lane in both tests, 1.5 points will be given; otherwise, no point will be given.

3.4 ELK function rating

- a) For the ELK test for departure from lane line, 2 tests shall be carried out under each test cycle, and the maximum allowable crossing distance from the ground contact point on the outer edge of the front wheel of the SV on the departure side to the inner side of the lane boundary is 0.3 m. If the results of both tests meet the corresponding requirements, 3 points will be given; otherwise, no point will be given;
- b) For the ELK test for heading to curb, 2 tests shall be carried out under each test cycle. The maximum allowable crossing distance from the ground contact point on the outer edge of the front wheel of the SV on the departure side to the boundary between the road and the lawn is 0.2 m. If the results of both tests meet the corresponding requirements, 3 points will be given; otherwise, no point will be given.