This is a translation to English for reference purpose of JNCAP test method which is originally prescribed in Japanese language.
Please be sure to refer to the Japanese test method if you need to be precisely correct.

LANE DEPARTURE PREVENTION SYSTEM, ETC. PERFORMANCE TESTING METHODS

Created: April 1, 2017
Revised: March 23, 2022
March 15, 2019

1. Effective Dates:

This testing method went into effect April 1, 2017. However, the revisions made on March 23, 2022 went into effect starting April 1, 2022.

2. Scope of Application:

This test procedure applies exclusively to the "Lane Departure Prevention Systems" and "Lane Departure Warning Systems" (referred to hereinafter as, "Lane Departure Prevention Systems, etc.") of passenger vehicles with 9 occupants or less and commercial vehicles with a gross vehicle mass of 2.8 tons or less conducted by the National Agency for Automotive Safety and Victims' Aid (hereinafter referred to as "NASVA") in the new car, etc. assessment program information supply project.

3. Definition of Terms:

The terms used in this testing method are defined as follows.

(1) **"Lane Departure Prevention Device"**: A device which performs one or more of the following two functions: "Lane Departure Prevention" (LDP), and "Lane Keep Assist" (LKA) by controlling vehicle behavior with the goal of preventing the vehicle from veering off its lane.

(2) **"Lane Departure Prevention System (LDP)"**: If there is a danger of the vehicle deviating off course, or if the vehicle has deviated off lane, this device automatically takes control of the vehicle's brake system, steering system, etc. to bring the vehicle back on lane.

(3) **"Lane Keep Assist System (LKA)"**: A device which automatically takes control of the vehicle's steering system, brake system, etc. to keep the car centered in its lane.

(4) **"Lane Departure Warning System (LDWS)"**: (Excluding manual reset type devices.) A system which warns the driver of vehicle departure (or danger of it) by auditory warning, haptic warning, and auditory as well as visual warning, or haptic and visual warning.

(5) **"Manual Reset Device"**: When a device automatically shuts itself off during driving (excluding failsafe functions like malfunction diagnosis and accident avoidance devices like ABS and ESC), the manual reset device must be activated by the driver to restore the device's functions.

(6) **"Lane Markers"**: Paint on the road which marks lane divisions so the device in question can gauge

where to drive and control/warn.

(7) **"Test Lane"**: A testing surface comprised of two parallel lane markers so the device to be tested can be controlled or warned.

(8) **"Left Departure Test"**: A test in which the test vehicle deviates off the lane marker on its left side.

(9) **"Right Departure Test"**: A test in which the test vehicle deviates off the lane marker on its right side.

(10) **"Lane Marker Inside Edge"**: A straight line connecting the side edge of each lane maker on the side closest to the test vehicle just before the vehicle crosses over the lane marker.

(11) **"Lane Marker Distance"**: The shortest distance between the intersection of the road surface and a vertical line passing through the outermost point of the intersection of a vertical plane passing through the center of the axle of the front wheel closest to the lane maker (the left-front wheel for the left departure test, the right-front wheel for the right departure test) and the tire, and the lane marker inside edge (fig. 1). Furthermore, with the lane marker inside edge as a standard, the distance on the test vehicle's side before the lane marker is crossed is negative.

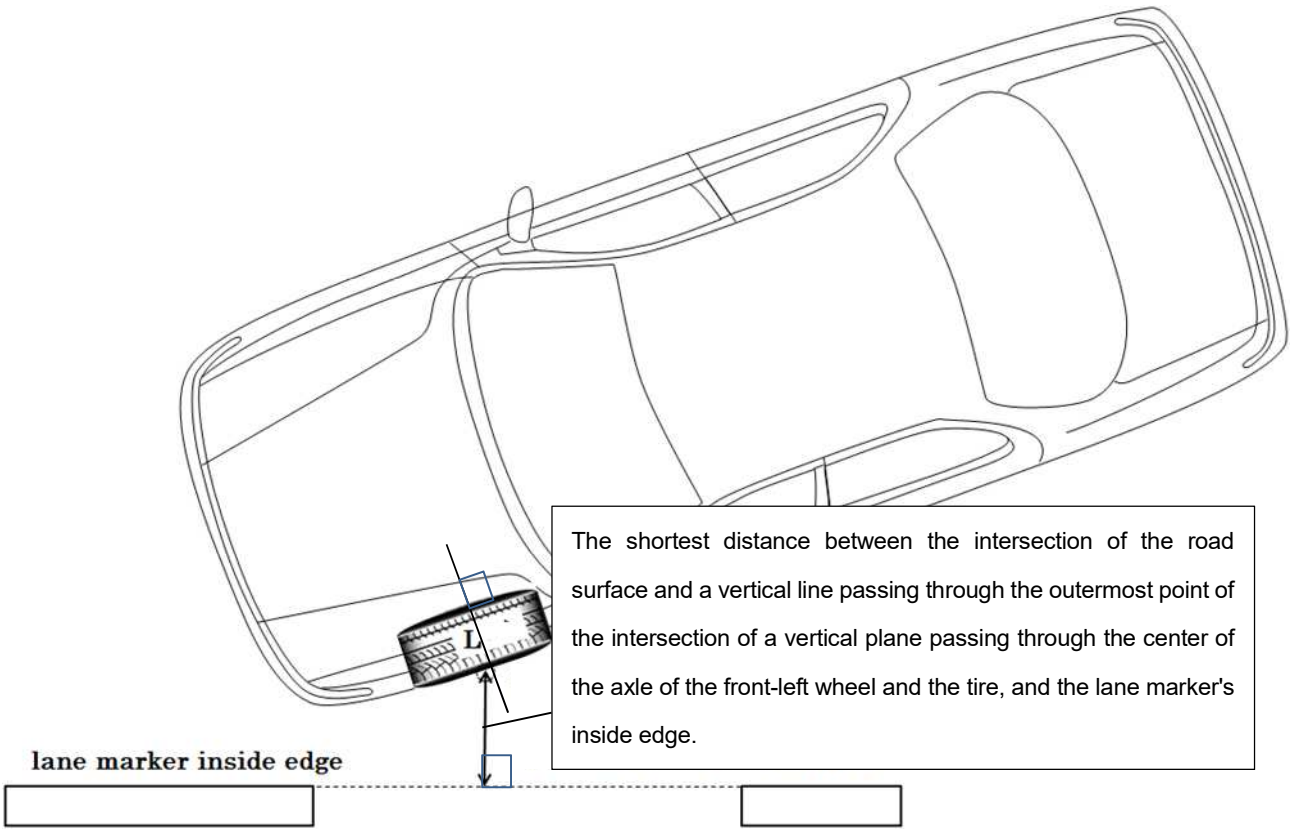


Fig. 1: Lane Marker Distance (Left Departure Test)

(12) **"Departure Speed"**: The speed of change in lane marker distance.

(13) **"Test Departure Speed"**: A Departure speed specified value in regards to simulation runs in a test.

(14) **"Test Vehicle Speed"**: A specified running speed to simulate runs in a test.

(15) **"Mass at Vehicle Delivery"**: The condition of the test vehicle when fully loaded with fuel, lubricants, coolants, etc. in the engine and fueling system, and equipped with onboard tools, spare

tire, and standard accessories.

(16) **"Pre-Braking Brake Temperature"**: The higher of the temperatures of left and right wheels of each axle when the temperature of brake lining or pad of each wheel is measured immediately before the start of each running for braking with the vehicle in fixed position pursuant to the procedures of JIS D 0210.

4. Testing Conditions:

4.1 Data from Vehicle Manufacturer

The vehicle manufacturer shall provide NASVA with the necessary data (Appendix 1).

4.2 Test Vehicle Conditions

The test vehicle shall be in the following condition:

(1) Load Condition: The mass of the test vehicle with one driver and including the measurement equipment shall be the Mass at Vehicle Delivery + 200kg or less. Front axle/rear axle weight distribution (%) shall be on a par (±5% or less) with that of the Mass at Vehicle Delivery.

If the preceding requirement is not met, parts may be installed the minimum to increase the weight.

(2) Tires: The tires installed at the time of purchase of the test vehicle shall be used. The tire air pressure shall be set before running (normal temperature) on a level surface, at the value for ordinary run as described in the specification sheet.

(3) Protection Devices: When passenger protection devices are installed, disable them.

(4) Device Setup: If the driver can choose the device and function(LDP, LKA, LDWS) and adjust the control intensity, warning timing, and lane marker detector sensitivity, these should be set at the recommended values reported by the vehicle manufacturer.

4.3 Test Track

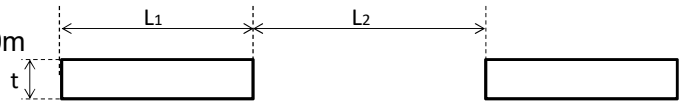
The test track shall meet the following requirements.

(1) The test lane shall constitute of lane markers painted with visible white lines (center-to-center distance: 3.5m parallel lines), it shall be over 300m in length, and it shall also comply with ① to ③.

① Marker Length (L_1): 5.00m

② Space Between Markers (L_2): 5.00m

③ Marker Width (t): 0.15m



(2) There shall be no paint or markings on the road within a range of 5m of the lane marker's outside.

(3) The test track shall be a flat, dry, and clean paved road surface without any leaves, dirt, etc., and the coloring of the road (excluding the color used for the lane markers) shall be uniform.

4.4 Weather Conditions

The weather conditions during testing shall be as follows:

(1) The temperature during testing shall be -5°C~40°C.

(2) The average wind speed (1 min. average) during testing shall be 5m/s or less

(3) Visibility during testing shall be at least 1km.

(4) A declaration by a vehicle manufacturer might allow the following tests under sunlight conditions to be avoided:

① Illumination during testing is 2000lx or less

② There are shadows from trees and/or buildings on the test track.

③ Direct sunlight on the test vehicle from the front

④ Testing temperature is lower than 5°C.

4.5 Measurement Items

The measurement items as well as measurement accuracy/resolution shall be as follows:

(1) Measurement Time: at 10ms resolution.

(2) Running Speed: For a measuring range of 1km/h～100km/h, it shall be at ±0.25%(% of full scale) accuracy as well as 0.2km/h resolution.

(3) Lane Marker Distance: For a measuring range of -0.75m～1.00m, it shall be at 0.05m accuracy as well as 0.01m resolution.

(4) Departure Speed: Within a measurement range of ±0.40m/s, and within an accuracy of 0.05m/s RMS and also at a resolution of 0.01m/s.

(5) Yaw Rate: For a measuring range of ±10deg/s, it shall be at ±2.5%(% of full scale) accuracy as well as 0.01deg/s resolution.

(6) Steering Angle: Shall be at 0.02deg resolution.

(7) Steering State: The measuring time delay whether or not the driver is touching the steering wheel shall be 10ms or less.

(8) Accelerator Stroke Amount: When at full stroke, it shall be at 100%. When at 5% accuracy, it shall be at 1% resolution.

(9) Warning System Condition: The measuring time delay for LDWS warnings (auditory warning, haptic warning , and visual warning) shall be 10ms or less. However, with visual warning systems, or when the measuring the warning system is difficult, this can be omitted from the measured items.

(10) Pre-Braking Brake Temperature: It shall be within ±3% accuracy. Furthermore, this only applies to devices where vehicle brake system are controlled automatically.

(11) Test Images: A video camera shall be placed in the test vehicle's interior, recording the front of the test vehicle as well as the driver's seat and the condition of the vehicle devices.

5. Testing Procedure

5.1 Test Setup

(1) Initialization: If the vehicle manufacturer wishes it, for lane marker cognition initialization, the test vehicle may be run on a normal road up to 100km.

(2) Brake Conditioning: In a device where vehicle brake system are controlled automatically, if the vehicle manufacturer wishes it, to condition the brake discs, drums and linings of the test vehicle (excluding similar conditioning performed in other tests), the process of accelerating to 64km/h and braking to result in deceleration of 3.7m/s^2 and vehicle stop shall be repeated 200 times. The interval between the initial and second braking shall be either the time required to reduce the brake temperature to 110°C~132°C or the distance of 1.6km, whichever occurs earlier. After every stop, the vehicle shall be accelerated to 64km/h and keep that speed until the next braking. (Brake Conditioning

is equivalent to that provided in FMVSS105 S7.4.1.1.) Furthermore, as long as the conditions required for initialization are met, the initialization work may be performed in conjunction with the above conditioning run item 5.1(1).

(3) Testing Condition Selection: Carry out the six condition setup tests in Table 1: test speed, test Departure Speed, departure direction, and whether or not each of these three has a manual reset device. However, do not carry out tests where the recommended value setup described in item 4.2(4) has devices which are nonoperational (if when setup at the recommended value, LDP, LKA, or LDWS functions are switched off).

Table 1: Test Conditions Setup

Condition Setup		Test Speed	Test Departure Speed	Departure Direction
Standard Test	BL60	60km/h	0.25m/s	Left
	BR60	60km/h	0.25m/s	Right
	BL70	70km/h	0.25m/s	Left
	BR70	70km/h	0.25m/s	Right
Manual Reset Device Test	EL70	70km/h	0.25m/s	Left
	ER70	70km/h	0.25m/s	Right

(4) Test Track Setup: Setup pylons that will be a yardstick for the test run. In left departure tests, the test track's lane markers will be set up as shown in Fig. 2 below. Furthermore, in right departure tests, it will be set up to mirror the left departure test in relation to the steering area entry position's pylon.
Additionally, the pylon's position can be widened to accommodate vehicle size, behavior, etc. (The degree to which it can be widened will be determined by the vehicle manufacturer.)

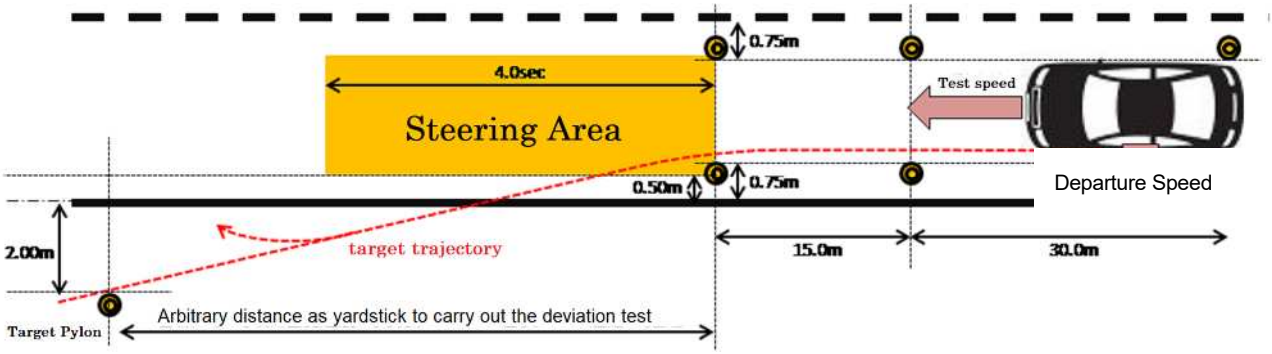


Fig. 2: Test Track Setup (Left departure test)

5.2 Testing

(1) Re-brake conditioning: In the case of the first braking system test for the test car (generic term of the test carrying out brake conditioning of Section 5.1), before starting the test, repeat the process of Item 5.1 (2) 35 times in principle for re-conditioning. Further, when the period from the conditioning run of Section 5.1 to the test exceeded two weeks, the process may be repeated up to 50 times.

In the case of second or more braking system test (same when it takes multiple days in the same test), 35 times if one week or more has passed since the previous test date , and 50 times at most if two weeks or more have passed, it is possible to carry out re-brake conditioning. If re-brake conditioning test is not carried out on the day of test, warm up run should be carried out until the brake temperature exceed 100°C by the procedure of the item 5.1(2).

(2) Systems On: Start the ignition, and switch on or set up item 4.2(4) the various systems while the car is parked. If the ignition turns off during the test, perform this systems on start procedure again before running the test. Additionally, when testing the manual reset device, operate this test after the vehicle has crossed its test speed.

(3) Brake Temperature: When dealing with brake systems that automatically control vehicle functions, measure the brake temperature before the test run, and confirm that it's within a range of 65°c～100°c.

(4) Test Run: Set up the test track as per item 5.1(4), the driver runs the test vehicle at the test speed, steers the vehicle so that the trajectory is a straight line between the pylons in the test lane and toward the target pylon. When in the steering area, return the steering wheel in its neutral position before letting go. However, in tests where the vehicle is controlled only by the braking system or in LDWS tests, the driver need not release the steering wheel. Furthermore, while driving, without using turn signals, accelerating or decelerating suddenly, or swerving suddenly, and at the same time, after entering the steering area, accelerator pedal must be kept constant and the brake pedal must not be used.

(5) Transmissions: For test vehicles with automatic transmissions, select D-range. For vehicles with manual transmissions, select the highest gear where the RPM will be at least 1500 at the test speed.

(6) Number of Tests: For each test condition, three effective test results shall be obtained. However, the test shall be ended if any of the following conditions occur:

① The biggest departure was lower than 0.50m twice continuously.

② The biggest departure was between 0.50-1.00m twice continuously(for vehicles equipped with LDWS, this is limited to the warning system activating less than -0.75m, more than 0.30mor the warning system failed to activate at least once in 2 of the tests in ②.).

③ The biggest departure was over 1.00m or it failed to activate twice continuously. (For vehicles equipped with LDWS, this is limited to the warning system activating less than -0.75m, more than 0.30m, or the warning system failed to activate at least once in 2 of the tests in ③.)

④ The only device is LDWS and the warning system activated less than 0.75m, more than 0.30m, or it failed to activate. Furthermore, tests determined as failed (foul) according to item 5.3(3) will not be included in the valid test results.

5.3 Confirming Test Results

(1) Measurement Range Setup: Using the steering area entry time as a standard, the measuring range for the items in Section 4.5 shall be set at 5.0 sec. before the test begins and shall finish 13.0 sec. after. However, the moment the driver releases the steering wheel (for tests where the vehicle behavior is controlled only by the braking system or in an LDWS test, the moment when the vehicle

enters the steering area), when the distance between the test vehicle and the lane marker surpasses 1.00m (or for vehicles where LDWS is the only system, when distance surpasses 0.30m), or when the departure speed falls below zero (for vehicles only equipped with LDWS, when the warning system outlined in item 5.3(2)⑪ activates), use the faster value to finish setting up the measurement range.

(2) Organizing the Data

The test results shall be organized as outlined in ① through ⑪ below. In addition, the measured value etc. shall be rounded off to the nearest unit in each item. (Hereafter, this test procedure will be the same unless otherwise specified).

① Accelerator Stroke Amount: The highest and lowest values for the accelerator stroke amount shall be rounded to the nearest 1%.

② Running Speed: The running speed from the time measurements commence to the moment the vehicle enters the steering area shall be rounded to the nearest 0.1km/h for both highest and lowest values.

③ Maximum Yaw Rate: From the time measurements begin to the moment the driver releases the steering wheel (for tests where the vehicle behavior is controlled only by the braking system or in an LDWS test, the moment when the vehicle enters the steering area), the yaw rate's maximum value (an absolute value, where direction does not matter), shall be rounded to the nearest 0.01 deg/s. Furthermore, the high-frequency component shall be eliminated at cutoff frequency of 10Hz.

④ End Steering Timing: The time between the moment the vehicle enters the steering area and the moment the driver releases the steering wheel (for tests where the vehicle behavior is controlled only by the braking system or in an LDWS test, the moment when the vehicle enters the steering area), values shall be rounded to the nearest 0.01 sec.

⑤ End Steering Position: The distance between the test vehicle and the lane marker when the driver releases the steering wheel shall be rounded to the nearest 0.01m.

⑥ Departure Speed at End of Steering: The Departure Speed when the driver releases the steering wheel (for tests where the vehicle behavior is controlled only by the braking system or in an LDWS test, the moment when the vehicle enters the steering area), shall be rounded to the nearest 0.01m/s.

⑦ Departure Speed Post-End of Steering: The time between the moment the driver releases the steering wheel (for tests where the vehicle behavior is controlled only by the braking system or in an LDWS test, the moment when the vehicle enters the steering area) and the moment the test vehicle is within 0.10m of the lane marker, the Departure speed shall be rounded to the nearest 0.01m/s.

⑧ Maximum Departure Speed: From the moment the driver releases the steering wheel (for tests where the vehicle behavior is controlled only by the braking system or in an LDWS test, the moment when the vehicle enters the steering area) to the end of the measurement period, round the Departure speed's highest value to the nearest 0.01m/s.

⑨ Steering Angle Rate: For the measured steering angle, the high-frequency component shall be

eliminated at cutoff frequency of 10Hz when adjusting the steering angle rate. The time between the start of measurements and the moment the driver releases the steering wheel (for tests where the vehicle behavior is controlled only by the braking system or in an LDWS test, the moment when the vehicle enters the steering area), steering angle rate maximum values shall be rounded to the nearest 0.1 deg/s (absolute value, regardless of direction.). Additionally, the time between the moment the driver releases the steering wheel (for tests where the vehicle behavior is controlled only by the braking system or in an LDWS test, the moment when the vehicle enters the steering area) and the moment the test vehicle is at a distance greater than 0.10m of the lane marker, the steering angle rate maximum values shall be rounded to the nearest 0.1 deg/s. (absolute value, regardless of direction.)

⑩ Maximum Departure Amount: For LDP and LKA tests, the maximum value of the distance between the test vehicle and the lane marker during the measurement period shall be rounded to the nearest 0.01m. Furthermore, when the distance surpasses 1.00m, it shall be recorded as ">1m."

⑪ Warning System Position: For LDWS tests, the moment the warning system activates once the test vehicle has entered the steering area (if there are more than 2 warning systems, the moment when both systems activate), round the distance between the test vehicle and the lane marker to the nearest 0.01m. If the warning system didn't activate, record this as "no warning."

(3) Determining a Test's Effective/ Not Effective

For the measurement period in item 5.3(1), if any of the following ① through ⑫ occurs, the test shall be deemed a failure (foul).

① The difference between the accelerator stroke amount's maximum and minimum values was 10% or more

② The test vehicle's minimum running speed was lower than the test vehicle speed, or the maximum speed exceeds the test speed +3.0km/h.

③ The maximum yaw rate exceeded 1.2 deg/s.

④ The end steering timing exceeded 4.0 sec after the test vehicle entered the steering area.

⑤ The end steering position exceeds -0.50m. (Excluding tests where the vehicle behavior is controlled only by the braking system, or LDWS tests).

⑥ The highest Departure Speed was not in the test Departure Speed range of ±0.05m/s.

⑦ The Departure Speed Post-End of Steering minus The Departure Speed at End of Steering was under -0.01 m/s. (Excluding cases where vehicle Departure suppression devices were confirmed immediately after the steering was ended, as confirmed by measurements in the video recordings, etc.)

⑧ When the maximum Departure Speed minus the Departure Speed at End of Steering exceeds 0.10 m/s.

⑨ When the steering angle rate exceeded 15.0 deg/s. (In cases where the driver released the steering wheel and it was discovered that Departure suppression controls were activated, do not include the steering rate from that point to the point when the distance between the test vehicle

and the lane marker reaches +0.10m.)

⑩ When the maximum Departure amount was less than 1.00m, despite the test vehicle's devices and functions are not found to being operational in accordance with the measurement items from the video footage, etc.

⑪ When the measurement devices are faulty or broken and the necessary data could not be measured, or when there was obviously an error.

⑫ In case test video of item 4.5 (11) cannot be obtained

6. Recording the Test Results

6.1 Recording the Measurement Values

The data measured in item 5.3(2) including the testing date, conditions met, and the effective 3 tests according to item 5.3(3) shall be recorded in Appendix 2.

6.2 Test Results

(1) The median Departure amount's evaluated value from the 3 effective tests shall be recorded in Appendix 2.

Additionally, if two results are achieved from ① through ③ in item 5.2(6), enter the larger of the departure amounts in the table.

(2) If the departure amount's evaluated value is more than 0.5m or if activation failed, or if LDWS was the only device, all of the test conditions' warning system starting position is between -0.75m and 0.30m, enter "compatible," and in all other cases, enter "incompatible" in the LDWS Compatibility Assessment row in Appendix 2. Furthermore, if the Departure’s evaluated value is under 0.5m, do not enter any information in the LDWS Compatibility Assessment row.

(3) If the maximum departure amount is less than 0.3m, the results will be deemed as if the LDWS functioned within -0.75m and 0.30m, and no data will be entered in the Warning System row. Additionally, if LDWS was the only device used, no data will be entered in Appendix 2's End Steering Position row, as well as the Maximum Departure Amount and Departure Amount Evaluation Value rows.

APPENDIX 1: LANE DEPARTURE PREVENTION SYSTEM ETC. TEST CONDITIONS AND TEST VEHICLE SPECIFICATIONS

[To be filled in by the vehicle manufacturer]

1. Test Vehicle Specifications

(1) Model/Type (Model Name):_____/_____(_____)

(2) Installed Tire

	Front	Rear
Size		
Brand/Type		
Air Pressure (kPa)		

2. Report from the Vehicle Manufacturer

(1) Equipped Systems: LDP / LDWS / LKA

(2) LDP System Controls:Steering system Controlled / Brake system Controlled

(3) LKA System Controls: Steering system Controlled / Brake system Controlled

(4) LDP/LKA Manual Reset Device? Y/N: Yes (LDP / LKA) / No

(5) LDWS Prompting Method: Auditory / Haptic / Visual

(6) Departure Direction Alert: Available (Auditory / Haptic) ‧ NA

(7) Testing Condition Selection: Not Available / Available (only 60km/h / only 70km/h)

(8) Recommended Settings: (Selecting systems (LDP、LKA、LDWS), detection sensitivity, strength of controls, warning timing, etc.):

(9) Onboard protection devices: Directions on how to disable protection devices such as airbags shall be attached.

(10) Advance data submission: Yes (Appendix 3 or equivalent) / No

APPENDIX 2: LANE DEPARTURE PREVENTION SYSTEM ETC. TEST CONDITIONS AND TEST VEHICLE SPECIFICATIONS

[To be filled in by the testing institute]

Test date (YYYY/MM/DD):_____ Place:_____

1. Test Vehicle Specifications

(1) Model/Type (Model Name):_____/_____(_____)

(2) Frame number:_____

(3) Installed Tires

	Front	Rear
Size		
Brand/Type		
Air Pressure (kPa)		

(4) Test Vehicle Load Allocation:

		Left wheel	Right wheel	Subtotal	Grand Total
Load distribution at time of delivery (daN)	Front Axle				
	Rear Axle				
Load distribution during test (daN)	Front Axle				
	Rear Axle				

(Note) Indicated as 1daN = 1kgf

2. Setting of Conditions for testing, etc.:

(1) Equipped Systems: LDP / LDWS / LKA

(2) LDP System Controls:Steering system Controlled / Brake system Controlled

(3) LKA System Controls: Steering system Controlled / Brake system Controlled

(4) LDP/LKA Manual Reset Device? Y/N: Yes (LDP / LKA) / No

(5) LDWS Prompting Method: Auditory / Haptic / Visual

(6) Departure Direction Alert: Available (Auditory / Haptic) ‧ NA

(7) Testing Condition Selection: Available (only 60km/h / only 70km/h) / Not Available

3. Environmental conditions

Day 1 Test Date:_____Day/Month/Year_____ Location:_____

Start time:_____ Weather:_____ Temperature:_____ Wind speed:_____

End time:_____ Weather:_____ Temperature:_____ Wind speed:_____

Remarks:_____

Day 2 Test Date:_____Day/Month/Year_____ Location:_____

Start time:_____ Weather:_____ Temperature:_____ Wind speed:_____

End time:_____ Weather:_____ Temperature:_____ Wind speed:_____

Remarks:_____

4.Test Results

System Functions: Lane Departure Prevention System / LDWS

Conditions Identified: Standard Test (60km/h / 70km/h) / Manual Reset Device Test (70km/h)

Departure Side		Left Departure			Right Departure		
Test #		1	2	3	1	2	3
Pedal Stroke (%)	Max						
	Min						
Running Speed (km/h)	Max						
	Min						
Max. Yaw Rate (deg/s)							
End Steering Timing (sec)							
End Steering Position (m)							
Departure speed (m/s)	End Steering Time						
	Immediately after End Steering Time						
	Maximum						
Steering Angle Rate (deg/s)	Until End Steering Time						
	End Steering Position up to +0.10m						
Maximum Departure Amount (m)							
Warning System Position (m)							
Departure Amount's Evaluation Value (m)							
LDWS Compatibility Assessment (Compatible / Incompatible)							

[Notes]

Appendix 3: Performance test results of Lane Departure Control Devices, Etc.

[For advance data as defined in the detailed regulations of the New Car Assessment Information Provision Project]

***Only the results of tests conducted on the same type of vehicle as the assessment test vehicle (with optional equipment similar to that of the test vehicle) using the test methods specified by NASVA may be submitted.**

Test date (YYYY/MM/DD):_____ Place:_____

1. Test vehicle specifications

(1) Model/Type (Model Name):_____/_____(_____)

(2) Frame number:_____

(3) Installed Tires

	Front	Rear
Size		
Brand/Type		
Air pressure (kPa)		

(4) Test Vehicle Load Distribution

		Left wheel	Right wheel	Subtotal	Grand Total
Load distribution at vehicle delivery (daN)	Front axle				
	Rear axle				
Load distribution at vehicle delivery (daN)	Front axle				
	Rear axle				

(Note) Indicated as 1daN = 1kgf

2. Setting of conditions for testing, etc.

(1) Equipped functions: LDP functions / LDWS / LKA functions

(2) LDP control method: Steering system control / Braking control

(3) LKA control method: Steering system control / Braking control

(4) Availability of LDP/LKA manual return type device: Yes (LDP and LKA) / No

(5) LDWS presentation method: Auditory / Haptic / Visual

(6) Distinction of direction of deviation: With distinction (Auditory / Haptic) / No distinction

(7) Selection of test conditions: None / Yes (60km/h only / 70km/h only)

3. Environmental conditions

Day 1 Test Date:_____Day/Month/Year_____ Location:_____

Start time:_____ Weather:_____ Temperature:_____ Wind speed:_____

End time:_____ Weather:_____ Temperature:_____ Wind speed:_____

Remarks:_____

Day 2 Test Date:_____Day/Month/Year_____ Location:_____

Start time:_____ Weather:_____ Temperature:_____ Wind speed:_____

End time:_____ Weather:_____ Temperature:_____ Wind speed:_____

Remarks:_____

4. Test results

Device function: Lane departure control system / LDWS

Condition identification: Basic test (60km/h / 70km/h) / Manual return device test (70km/h)

Departure Side		Left Departure			Right Departure		
Test #		1	2	3	1	2	3
Pedal Stroke (%)	Max						
	Min						
Running Speed (km/h)	Max						
	Min						
Max. Yaw Rate (deg/s)							
End Steering Timing (sec)							
End Steering Position (m)							
Departure speed (m/s)	End Steering Time						
	Immediately after End Steering Time						
	Maximum						
Steering Angle Rate (deg/s)	Until End Steering Time						
	End Steering Position up to +0.10m						
Maximum Departure Amount (m)							
Warning System Position (m)							
Departure Amount's Evaluation Value (m)							
LDWS Compatibility Assessment (Compatible / Incompatible)							

[Remarks]