

LEXUS SAFETY SYSTEM+ A

A COMPREHENSIVE SUITE OF
ADVANCED TECHNOLOGIES



Offered for the first time on the 2018 LS 500 and LS 500h, Lexus Safety System+ A is comprised of advanced safety features that enhance the standard Lexus Safety System+ suite. The package adds a Head-Up Display (HUD) linked Pedestrian Alert to the Pre-Collision System, which is designed to alert the driver of a pedestrian that may be in the vehicle's path. Pre-Collision System with Active Steering Assist adds a limited amount of automated steering to the Pre-Collision System. Under certain circumstances, Active Steering Assist has the potential to reduce the severity of, or prevent, collisions with a preceding pedestrian that cannot be avoided through automatic emergency braking alone.

Lexus CoDrive includes All-Speed Dynamic Radar Cruise Control and Lane Tracing Assist. All-Speed Dynamic Radar Cruise Control enhances accuracy for recognizing a vehicle ahead, while maintaining a preset cruising distance. Lane Tracing Assist is designed to provide better lane detection to help center the Lexus in its lane when lane marker visibility is poor or unavailable.

Additional Lexus Safety System+ A features include Front Cross-Traffic Alert, which, under certain circumstances, is designed to warn the driver of vehicles approaching from the left or right at intersections, and Road Sign Assist, which for the first-time fuses camera data with navigation data to display certain road sign information in the multi-information display and on the available HUD. Together, these features represent the highest level of active safety support ever offered on a Lexus.

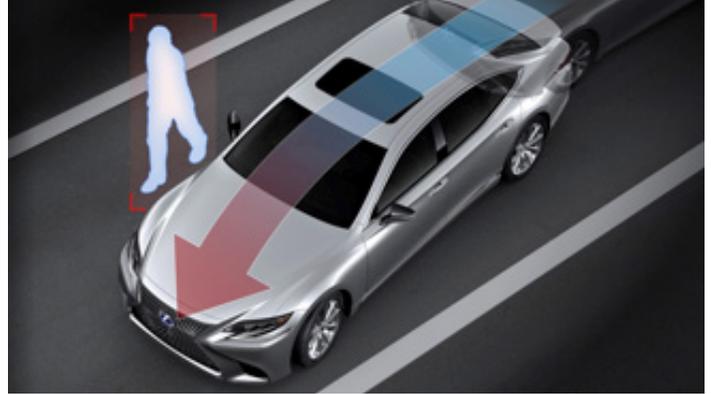


PRE-COLLISION SYSTEM WITH AUTOMATIC BRAKING AND PEDESTRIAN ALERT WITH ACTIVE STEERING ASSIST

In addition to Pre-Collision System with Pedestrian Detection, the new HUD-linked Pedestrian Alert is designed to detect a stationary or moving pedestrian in front of the vehicle and integrate with the available large color HUD to intuitively notify the driver of the pedestrian ahead. If Pedestrian Alert determines there is the possibility of a collision with a pedestrian ahead, the system animates arrows towards the direction of the pedestrian via the available HUD, intuitively notifying the driver.

This system links the enhanced Pedestrian Alert function (pedestrian location/direction) to an available Head-Up Display (HUD). To help alert the driver, an animated indicator showing continuous movement toward the pedestrian is superimposed over whatever graphics are currently displayed by the HUD.

Pre-Collision System with Active Steering Assist has the potential to help reduce the severity of, or prevent collisions with a preceding pedestrian that may not be avoided through automatic emergency braking alone. The system is designed to detect certain situations where there is a high probability of a collision with a pedestrian in the vehicle's lane of travel or with a continuous structure, such as a guardrail. If the system is able to recognize the lane markers on both sides of the vehicle, and the system determines that avoiding or mitigating a collision through brake control alone may not be likely, but that it might be avoided or mitigated with steering assist, the system assists in collision mitigation or prevention by providing a limited amount of automatic steering assist within the lane in addition to activating an alert and applying the brakes.



FRONT LATERAL SIDE PRE-COLLISION SYSTEM

Enhancing the capability of the standard Pre-Collision system, lateral side radar is designed to detect vehicles approaching diagonally in front of the Lexus. If the system determines a collision may occur, it warns the driver to perform evasive maneuvers. Additionally, if the system determines there is a high probability for a collision, Brake Assist is applied, which can help the driver avoid a collision or mitigate the impact force to occupants and the vehicle.



LEXUS CODRIVE

Lexus CoDrive incorporates two key driver assistance systems to facilitate more confident highway driving.:

ALL-SPEED DYNAMIC RADAR CRUISE CONTROL

All-Speed Dynamic Radar Cruise Control (DRCC) uses a new radar sensor exclusively for Lexus Safety System+ A, a stereo camera sensor, and a steering sensor to enable following while maintaining a preset distance from the preceding vehicle. Enhancing the forward-detection capabilities of the standard DRCC system, the millimeter wave radar sensor has a wider detection angle and the camera sensor captures additional information. As a result, the system provides greater accuracy in recognizing a preceding vehicle, detecting its current path, and recognizing if a vehicle has cut in front of the Lexus.

LANE TRACING ASSIST

Lane Tracing Assist (LTA) is the next generation of Lane Keeping Assist, assisting drivers to stay in the center of a lane. LTA recognizes white or yellow lane markings to provide steering input to help keep the vehicle in the center of the lane. In addition to clearly marked, relatively straight lanes, LTA is designed to operate through certain gentle curves and, under some circumstances, even when lane markers are not clearly visible. LTA adds a preceding vehicle tracing ability in certain conditions that uses the path of the preceding vehicle as a guide when lane marker visibility is poor or not available. The system then provides steering assistance to help them follow the traffic pattern of the preceding vehicle.



FRONT CROSS-TRAFFIC ALERT

Among the first of its kind in the world, Front Cross-Traffic Alert is designed to warn the driver of the presence of crossing vehicles at intersections, thereby potentially reducing the severity of, or preventing some intersection collisions. FCTA uses the front lateral side radar sensors to detect and alert the driver of approaching vehicles that may cross the vehicle's path. If the approaching vehicle or bicycle continues its trajectory, the system is designed to quickly alert the driver in two stages via the available HUD and Panoramic View Monitor before the vehicle/bicycle enters the path of the Lexus.



ROAD SIGN ASSIST

Road Sign Assist (RSA) uses camera and navigation data to display road sign information in the multi-information display and available Head Up Display, helping to increase driver awareness. RSA is designed to display two types of signs: stop signs, and "Do Not Enter" signs. Speed limits are based on a fusion of camera and navigation data, while stop and Do Not Enter signs are camera-based. Speed limit signs are represented based on navigation system data, and excess speed notification is displayed based on local speed limits.



COMPARISON: LEXUS SAFETY SYSTEM+ AND LEXUS SAFETY SYSTEM+ A

		Lexus Safety System+ A	Lexus Safety System+
Pre-Collision System (PCS)	HUD-Linked Pedestrian Alert	✓	-
	Active Steering Assist	✓	-
	Front PCS w/Pedestrian Detection	✓	✓
	Front Lateral Side PCS	✓	-
Lexus CoDrive	All-Speed Dynamic Radar Cruise Control (DRCC)	✓	✓
	Lane Tracing Assist (LTA)	✓	-
Front Cross-Traffic Alert (FCTA)		✓	-
Road Sign Assist (RSA)		✓	-
Intelligent High Beams		✓	✓
Lane Keep Assist (LKA) (LKA not standard on all models with Lexus Safety System+)		-	✓
Lane Departure Alert with Steering Assist (LDA)		✓	✓

