

This press pack accompanied the UK launch of the revised second generation LS in September 1998. Some changes were made to the model range during its time on sale, which can be tracked using the Timeline feature available on the LS archive web page. Additional assets and information relating to the LS range may be obtained from the Lexus press office if required.

September 1998

NEW LEXUS LS400 IMPROVES ON EXCELLENCE

- New look for flagship
- Improved performance and economy
- New five-speed automatic transmission
- First car to have GPS Navigation as standard
- Even more comfortable
- Quietest car in class

The new Lexus LS400, which made its UK debut at last year's London Motor Show, is more than just a facelift. Every aspect of this flagship luxury saloon has been examined in the relentless pursuit of perfection. The new Lexus LS400 offers a fresh look, more performance, and, remarkably, more comfort and more luxury.

To claim that the new Lexus LS400 is the best car in the world would be hard to prove, impossible to deny, but also typical of claims made by luxury car makers. Certainly, the LS400 was acclaimed as such when it was first launched seven years ago and has undergone many improvements since, so it is a likely contender for the crown now.

However, the true judge of such things is the owner, the person who chooses from all that is available to have this car. These individual decisions can be added up to sales volumes, and if one adds in the many thousands of LS400 sold in the USA Lexus would again be holding a place at the top of the charts.

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Yet perhaps the true test is loyalty. We know Lexus owners have usually come to the brand from one of the other luxury makes. We also know very few ever leave. The new LS400 fulfils the company's claim to be engaged in the relentless pursuit of perfection with many improvements and enhancements over what has gone before and so Lexus owners, loyal or convert, can be sure they are driving the best Lexus in the world.

The new face of the LS400 is more rounded with a look which builds on the heritage of the past. There is a new bonnet line, new front wings and new bumpers. The rear of the car has been redesigned too.

Inside the Lexus LS400 driver and passengers will find more luxury and comfort. There is an increase in wood trim and a softer feel to the leather seats and also roof lining. On the open road noise levels, which are already among the best in the class, have been lowered still further by minute attention to detail (such as underfloor airflow) and changes to soundproofing material.

Fine tuning of both front and rear suspension settings, minor revisions to shock absorbers and spring rates have improved ride and handling, making the LS400 more stable and more comfortable at speed.

The introduction of Vehicle Stability Control (VSC) makes the new Lexus LS400 among the safest cars on the road today. This innovative system monitors the vehicle's behaviour during cornering and maintains vehicle stability by correcting oversteer or understeer before it occurs. The VSC and the traction control complement the anti-lock braking systems already standard on LS400.

Passive safety is improved too with force limiters on front seats belts and the fitting of a head rest to the central rear seat.

The four-litre V8 engine remains at the heart of the Lexus LS400 but performance is improved thanks to intelligent Variable Valve Timing (VVT-i). The car is even easier to drive, thanks to better low speed torque, and also accelerates faster, thanks to more power.

The engine delivers 280bhp at 5,900rpm, 20bhp more than the previous engine, and has a maximum torque of 293lb ft (398Nm) at 4,100rpm. Engine performance, per litre, is easily the best in the class.

These developments have been achieved by fitting Variable Valve Timing, a two stage air intake and Electronic Throttle Control. The variable valve timing, which is hydraulically controlled, allows continuously variable timing over a range of 50 degrees maximum and is more precise and effective than other less sophisticated systems fitted to some other competitors.

In order to take advantage of the extra performance the Lexus LS400 is now equipped with a compact, five speed automatic transmission which has been engineered to give fast, smooth, unobtrusive shifts.

Interior equipment is equally advanced. A new multi-function trip computer is added to the instrumentation famed for its clarity and pollution sensing air-conditioning ensures maximum comfort for driver and passengers at all times.

The digital audio system includes an auto sound leveller which compensates the pre-set tonal range for external noise and the Lexus LS400 will be equipped with the Lexus Navigator, a touch-screen, voice-assisted, satellite navigation system. This screen will also control audio, air conditioning and vehicle trip functions.

NEW LEXUS LS400

KEY POINTS

- First car to have satellite navigation as standard
- Variable valve timing gives more power (280bhp) and torque
- Engine has new combustion chamber design, enlarged valves and two-stage variable length intake system
- Rigidity of cylinder block, crankcase and oil pan increased to reduce noise
- More interior trimmed with wood
- Softer leather upholstery
- Lower noise levels
- Vehicle Stability Control for greater safety
- Fast, smooth changing intelligent five-speed automatic gearbox
- Pollution sensing air conditioning
- Digital audio system compensates for background noise
- High intensity discharge (HID) headlights for better night vision
- HID bulbs draw 30 per cent less power from battery
- Headlamps turned on and off automatically
- Seatbelt pre-tensioners faster acting for greater safety
- Very flat torque curve with 258lb ft available from 2,400rpm to 5,650rpm
- Accelerates from 0-62mph in 6.9 seconds, 0.5 seconds faster than previous models
- Top speed limited to 155mph
- Combined fuel consumption figure unchanged at 23mpg
- Intelligent throttle system varies throttle response when gearbox in "snow" mode
- Intelligent transmission sets optimum shift pattern according to driving style and road conditions. Uphill/downhill shift controls upshift into fifth when on undulating roads
- Time lag for downshift reduced by 20 per cent and shift time reduced by 25 per cent for faster, smoother shifts giving increased driver pleasure
- To cut external noise the glass thickness on the windscreen, rear screen and rear doors has been increased
- Bodyshell strengthened to reduce noise transmission

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- Wind noise cut by adding engine bay seal and two aerodynamic undertrays, one around the front suspension, the second around the exhaust downpipe
- Interior noise level reduced by 1.5dB to a class leading 67.5dB at 60km/h(37.2mph)
- Differential mount now has four instead of three mountings to reduce noise and vibration
- Revised power steering pump improves feel and reduced fuel consumption by one per cent
- One-touch on all windows and sunroof with safety cut-out
- Drag coefficient just 0.27
- Only options are colours, wood trim steering wheel/gear shift lever and Dynamic Handling Pack
- On the road price £49,999 - just 4.5% more than old model

SAFETY AND SECURITY

- **Class leading active & passive safety**
- **Switchable Vehicle Stability Control**
- **High intensity headlamps**
- **Safety-cell body structure**
- **Force limited front seat belts**

Lexus drivers demand and receive the very highest standards of safety equipment and side airbags have been standard on the LS400 since the start of the 1997 model year. Even so, the Lexus LS400 now receives additional standard equipment which maintains its class leading position in both active and passive safety.

These systems are designed to work as a whole, helping the driver avoid accidents in the first instance and then, should a collision be unavoidable, ensuring that injuries to occupants, other drivers and pedestrians are minimised.

Vehicle Stability Control

The Vehicle Stability Control (VSC) system which is standard equipment on all Lexus LS400 models represents a major step forward in active safety. While the anti-lock braking maintains stability during rapid deceleration and the traction control applies during rapid acceleration, VSC is designed to maintain the stability of the car while turning.

VSC reacts quickly to both vehicle oversteer and understeer and is designed to return the car to a stable state leaving the driver in full control.

The VSC systems takes its inputs from a number of performance sensors placed throughout the car. These include a steering angle sensor, G-sensor, yaw rate sensor, brake pressure sensor and wheel speed sensor.

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Information from these sensors is fed to the central computer which activates the VSC, anti-lock braking and traction control. The computer can influence both throttle position and brake pressure circuits on each of the four wheels individually.

If the VSC senses that the car is about to oversteer it reduces engine power and applies brake pressure to the front wheel on the outer side of the corner. This generates a correcting force on the outer side of the car and brings the car back into line.

If the system senses that understeer is about to occur it reduces engine power and brakes both rear wheels individually according to the degree of understeer. This generates a correcting force on the inner side of the car and brings it back into line.

The VSC system warns the driver that it is about to operate by flashing a slip indicator and sounding a warning buzzer. There is also a VSC warning lamp which indicates if there is a fault in the system. VSC is designed as a safety system and is not installed to improve the cornering performance of the car. On the Lexus LS400 the VSC is switchable, giving the driver the choice to activate or deactivate the system.

High intensity headlamps

High intensity discharge (HID) headlamps are standard on the Lexus LS400 to improve night vision and visibility in poor driving conditions. The HID lamps emit about three times the quantity of light of conventional halogen bulbs and also have a colour temperature closer to sunlight. They also draw less power from the batteries, consuming about 30 per cent less than that of a halogen bulb.

The new headlamps are controlled by a luminance sensing system which switches them on automatically at dusk or when entering a tunnel. The system then switches the lamps off again when encountering daylight.

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Pre-tensioners and force limiting seatbelts

The strength of the Lexus LS400 in an accident is well established and the car passes all existing European and USA crash test standards. However, this latest version of the car also features some improved passive safety mechanisms.

The reaction time of the front seat belt pre-tensioners has been reduced in order to hold the driver and passenger more tightly into the seat at the moment of impact. In addition the belts are now fitted with force limiters which gradually allow the belt to lengthen as the force on the upper body builds up, keeping the restraining load at a predetermined level.

These two mechanisms act together to minimise the movement and force applied to the torso during an accident, reducing the chance of secondary injuries to the ribs and lungs.

As further improvements to passive safety, a headrest has been incorporated into the centre rear seat and energy absorbing material added to all interior pillars to reduce injury during secondary impacts.

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ENGINE

- Improved performance
- More torque and power
- Continuously variable valve timing
- Electronic throttle control
- Compact, five speed 'intelligent' automatic transmission

Smooth, powerful performance has always been a fundamental quality of the Lexus LS400 and the latest developments to the engine and transmission have been engineered to improve these qualities still further.

The well proven, four-litre, V8 engine now delivers more power and more torque over a wider range to give more driving pleasure and more outright performance.

Engine power output is up 20bhp to 280bhp at 5,900rpm and the maximum torque available is now 293lb ft at 4,100rpm. The older version of the engine developed 269 lb ft at 4,600rpm.

From the driver's point of view the improvements in low speed torque are perhaps more significant as they enable quieter, smoother acceleration than ever before. At 2,000rpm engine torque available is now 245lb ft, up on the old figure of 236lb ft.

In fact, the torque curve is remarkably flat for such a powerful engine with more than 258lb ft of pulling power available continuously between 2,400rpm and 5,650rpm.

As a result of these improvements the Lexus LS400 now accelerates from rest to 62mph in 6.9 seconds, half a second better than the previous car's best of 7.4 seconds. Top speed is limited at 155mph. Fuel is automatically cut when the Lexus LS400 reaches this speed.

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The fundamental design of the engine has not changed. Still 3969cc in capacity and with a bore and stroke of 87.5mm x 82.5mm, the V8 unit has a slightly higher compression ratio of 10.5:1.

The improvements have been achieved by adding a sophisticated variable valve timing mechanism, a two-stage variable length air intake and electric throttle control.

Variable valve timing

The Intelligent Variable Valve Timing (VVT-i) works by varying the engine intake valve open and close timing according to driving conditions and engine loading. Using VVT-i results in improved power and torque output plus optimised fuel economy and cleaner emissions due to more efficient fuel burning.

The VVT-i system operates by changing the position of the camshaft drive pulley relative to the camshaft. This system has the benefit of offering continuously variable valve timing and allowing the engine management computer to specify the optimum position for the full range of driving conditions.

Under high load and high engine speeds, when maximum power output is required, the valves open late to create intake inertia. Under high load and low engine speeds, when maximum torque is required, the valves open early to increase valve overlap.

Electronic Throttle Control system

The intelligent electronic throttle control system (ETCS-i) gives improved acceleration control under all driving conditions. It provides excellent response and stable vehicle control, especially when the road is slippery.

Using ETCS-i the throttle valve opening is controlled by a throttle actuator which is a small electric motor. Under normal road conditions the throttle opens in direct proportion to the accelerator providing maximum response and performance.

However, with the "snow" mode selected, the actuator slows the throttle opening relative to the accelerator to suppress sudden engine output and provide improved acceleration control.

Detailed engine modifications

Further torque improvements come from a series of engineering changes including new combustion chamber and valve port shapes, enlarged valve sizes and the two-stage variable length intake system.

Engine idle speed has been reduced and noise transmission levels have been cut by increasing the rigidity of the cylinder block, the crankshaft and the oil pan.

New compact five-speed automatic transmission

The Lexus LS400 is now equipped with a five speed automatic transmission which incorporates some of the world's most advanced transmission technology.

The new transmission gives good acceleration feel thanks to highly responsive shift control and the adoption of five speeds and a wider range of gear ratios results in better performance and better fuel economy.

The transmission incorporates an AI (Artificial Intelligence)-shift system which sets the optimum shift pattern according to driving style and road conditions. The AI-shift also has an uphill/downhill shift control which ensures smooth travelling by controlling the upshift to the fifth, overdrive ratio when driving on undulating roads.

A manual switch allows the driver to select 'snow' driving conditions when the road is especially slippery or 'power' mode when wanting to enjoy the car's performance to the full.

The time lag to the start of a downshift has been cut by about 20 per cent and the shift time itself is down by about 25 per cent. Because the gear change takes place faster - and backlash in gear splines has been reduced - the shift shock is also reduced making for smoother, more comfortable driving.

COMFORT AND LUXURY

- Further advances in ride and comfort
- Improvements in stability and handling
- Remote control multi-information display
- Digital audio sound system
- Pollution sensing air-conditioning
- Lexus Navigator touch-screen satellite system

When the Lexus LS400 was first launched in 1989 it set new standards in ride, comfort and quietness for luxury saloon cars. The second generation LS400, launched three years later, saw those standards improved still further and this latest version of the car moves forward again. The result of Lexus living the relentless pursuit of perfection ideal.

Every detail of the previous model was studied in an attempt to eliminate any remaining sources of noise, vibration or harshness. At the same time, extra attention was focused on stability and handling to ensure that the ride comfort matched and surpassed the best in the world.

Glass thickness of front window, back window and back door windows has been increased in order to cut out more external noise. Vibration damping material has been added to the underfloor and bulkheads to reduce vibration transmission while increased use of glass wool in key areas and the addition of sound absorbing roof lining and foamed underbody coating provides better sound absorption and insulation.

The bodyshell structure has been strengthened in several places to reduce noise transmission through vibration. The sheet thickness of the toe board cross member has been increased and the front suspension members reinforced to cut vibration from tyres and engine.

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Wind noise has been reduced by fitting a bonnet seal inside the engine compartment and by adding two aerodynamic undertrays, one around the front suspension and one below the exhaust downpipe.

Together these modifications have resulted in a reduction of interior noise level by 1.5dB to a class leading 67.5dB at 60km/h.

Improved ride and handling

Detailed work to tune the spring rates of the front and rear suspension, the suspension bushes and the shock absorbers has resulted in yet more improvement to the legendary ride and handling of the LS400.

The differential has now been mounted to the rear subframe at four points, rather than three, which further reduces vibration and noise. The power steering pump has a revised hydraulic circuit which improves the steering feel and also helps reduce fuel consumption by about one per cent.

Dynamic Handling Pack

The Dynamic Handling Pack consists of:

- Larger alloy wheels of a new 17X8inch design
- Wider, lower profile Pirelli P zero 245/50 ZR17 tyres
- Ride height lowered by 15mm
- Re-tuned springs, dampers and anti-roll bars
- Price: £2,424

The Lexus Dynamic Handling Pack has been developed for the LS400 driver looking for a higher level of driver involvement, without compromising the vehicle's class-leading comfort and refinement.

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The spring rates have been increased while the shock absorbers have been recalibrated to improve body control over large bump movements. Larger wheels, tyres, anti-roll bars and a ride height lowered by 15mm also achieve a more direct steering response while grip is increased with larger Pirelli P zero 245/50 ZR17 tyres.

Multi-information display

The information provided to the driver is enhanced by the fitting of a multi-information display which is remotely controlled by a switch conveniently mounted on the steering wheel pad.

The display can provide information on average vehicle speed, fuel economy, trip distances, driving time and range to next refuelling.

Power windows

Standard equipment on the LS400 now includes one-touch power windows for all seats and a one-touch power sunroof. Both are equipped with a safety cut-out system in the event of a jam or some object coming between the window frame and the glass. The windows and sunroof can also be closed and opened using the remote central locking transmitter or by holding the key turned in the driver's door lock.

Digital audio system

The new digital audio system features a digital pre-amplifier which delivers much better sound quality than conventional analogue systems. The six disc CD cartridge is conveniently located in the front passenger glove box, making changing discs speedy and simple.

The system is equipped with Auto Sound Leveller which adjusts pre-set tonal ranges to compensate for external sound during driving. Speaker locations are two at door mirror level, two in the front doors, two in the rear doors and one base speaker in the rear parcel shelf.

Pollution sensing air conditioning

The air conditioning system for the Lexus LS400 reflects the luxury environment demanded by the driver and passengers. Temperatures can be set individually by either driver or front seat passenger and, in the auto mode, the air is distributed automatically to the correct area of the passenger cabin.

A new feature is the Automatic Recirculation System which helps prevent pollution from other traffic entering the car. An exhaust emission sensor monitors the concentration of exhaust gases in the atmosphere and automatically switches the inlet flow between ambient and recirculated air.

The sensor does not react to small particles such as industrial dust and smoke but it will switch to automatic recirculation mode when working for maximum cooling and to ambient air mode for defogging or dehumidifying.

Lexus Navigator multivision navigation system

The Lexus LS400 will come equipped with the sophisticated Lexus Navigator GPS system. This navigation system has a unique touch-screen control which also operates the air conditioning and in-car entertainment systems.

The Navigator screen can be used to select GPS voice navigation, audio, air-conditioning or trip computer functions and can also be used for system diagnostics and vehicle warning indications.

The navigation function uses both Global Positioning Satellites (GPS) and dead reckoning to provide highly accurate route planning. Map data is supplied on a country by country basis on CD-Rom and instructions are both on-screen and by voice simulation. Initial UK customers will receive free CD updates until the whole of mainland UK is mapped.

The navigation functions include present position and direction of travel, setting of destination on the basis of address, name, phone number, previous destination or other instruction and a total road and route search.

The display also indicates the remaining distance and expected time of arrival at the destination, street names and sign boards, and head-up direction. It will automatically re-search when off-route and offer alternative routes in case of a diversion.

In audio mode the Navigator screen will control volume, FM radio settings and CD player settings, including disc and track. The trip computer mode can provide running distance, running time, average speed and average fuel economy readings between a pre-selected range of start and finish points.

COMPETITOR PRICE/SPECIFICATION COMPARISON

- First car to have satellite navigation as standard
- Very full standard specification
- Only options are pearlescent paint, wood trim steering wheel and gearshift lever, and Dynamic Handling Pack
- All competitors more expensive once specification matched

The new LS400 continues Lexus' philosophy of making everything you might want plus all the luxuries standard. This is highlighted when the competitors are loaded with the options needed to bring their standard specification up to the level of the Lexus.

The table below shows that even the initially cheaper Jaguar is in fact slightly more expensive than the Lexus when the options required are added.

Compared to the Mercedes the Lexus saves £11,665. That is enough to buy a top of the range Toyota Starlet for the nanny and still afford a skiing holiday, or even a Corolla 1.3 Sportif for your eldest daughter.

New Lexus LS400 Standard Specifications and Competitor Option Pricing

	Lexus LS400	BMW 740i	Mercedes S420	Jaguar Sovereign 4.0	Audi A8 4.2
On The Road Price	£49,999	£50,595	£60,540	£46,705	£51,925
Automatic Transmission	✓	✓	✓	✓	✓
Alloy Wheels	✓	✓	✓	✓	✓
Full Leather Upholstery	✓	✓	✓	✓	✓
Climate Control A/C	✓	✓	✓	✓	✓
CD Autochanger	✓	✓	£600	£380	✓
Cruise Control	✓	✓	✓	✓	£387
Electric Sunroof	✓	✓	✓	£920	✓
Electric Front Seats(with driver memory)	✓	✓	✓	✓	✓
Heated Front Seats/Rear Seats	✓	£330*	£524	£830	£650
Electric Steering Column	✓	£465	✓	✓	✓
Headlamp Washers	✓	✓	✓	£370	£360
Side Airbags	✓	✓	✓	✓	✓
Satellite Navigation	✓	£3,355	x	£2,100	£1,686
Traction Control	✓	✓	✓	x	✓
3 Year Warranty	✓	✓	x	✓	✓
Spec Adjusted Price	£49,999	£54,745	£61,664	£51,305	£55,008

* Front seats only

Wood trimmed steering wheel and gear shift lever are available as a special option.

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TECHNICAL SPECIFICATIONS LEXUS LS400

DIMENSIONS	
Exterior Dimensions	
Length	5005mm
Width	1830mm
Height	1435mm
Wheelbase	2850mm
Track (front)	1570mm
(rear)	1570mm
Interior Room Dimensions	
Length	2095mm
Width	1540mm
Height	1150mm
Boot Space	
Luggage Capacity	463 litres
Overhang	
Front	910mm
Rear	1245mm

WEIGHTS	
Kerb Weight (min-max.)	1815kg
Gross Vehicle Weight	2245kg
Towing Capacity (Braked) kg	2000kg
Towing Capacity (Unbraked) kg	750kg
Fuel Tank Capacity	85 litres
Drag Coefficient (Cd)	0.27

ENGINE	
Engine Type	1UZ-FE-90° V8
Valve Mechanism	32-Valves, DOHC (with VVT-i)
Block Material	Aluminium
Head Material	Aluminium
Displacement/Capacity	3969cc
Bore x Stroke	87.5 x 82.5mm
Compression Ratio	10.5
Fuel Injection Type	Electronic Fuel Injection
Ignition System	Transistorised
Octane Rating	95 RON, unleaded
Max. Output	280bhp (209 kW) @ 5,900 rpm
Max. Torque	293lb ft (398 Nm) @ 4,100 rpm

TRANSMISSION	
Type	Front engine installation, rear-wheel drive
Gearbox Type	5-speed automatic
Gear Ratios automatic	
1st	3.357
2nd	2.180
3rd	1.424
4th	1.000
5th	0.753
Reverse	3.431
Differential	3.266

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SUSPENSION	
Front	Double wishbone type, coil springs, gas-filled shock absorbers, stabiliser bar
Rear	Double wishbone type, coil springs, gas-filled shock absorbers, stabiliser bar

STEERING	
Steering Gear Type	Rack and pinion
Power Steering Type	Vehicle speed sensitive variable power assist
Turns lock-to-lock	3.5
Min. Turning Circle (radius)	5.3m (tyre)

BRAKES		
Type	Front	315mm - Ventilated discs with 4-piston aluminium calipers
	Rear	307mm - Ventilated discs with aluminium calipers
Parking Brake Type	Foot pedal operation	
Brake Booster Type & Size	8 + 9 (tandem)	
Anti-Lock Braking (ABS)	Standard	

WHEELS & TYRES	
Wheels	Aluminium, 7JJ
Tyres	225 / 60R16 97W

PERFORMANCE	
Max. speed	155mph
0-62 mph	6.9 sec

FUEL CONSUMPTION	
CO ₂ mass emission (g/km)	292
Fuel consumption - urban (mpg/l/100km)	16.1 / 17.5
Fuel consumption - extra urban (mpg/l/100km)	30.4 / 9.3
Fuel consumption - combined (mpg/l/100km)	23.0 / 12.3

EQUIPMENT LIST	
16-inch aluminium wheels	S
Integrated front fog lamps	S
Electrically adjustable, electrochromic, power-heated outside rear wide view mirrors	S
Remote entry system for doors and boot	S
Pole auto antenna linked by radio	S
Cruise control	S
Power/memory tilt and telescopic steering column	S
5-speed automatic transmission	S
Power windows with auto-up function (with jam protection)	S
Microprocessed automatic air conditioning with dual control system for driver and passenger	S
Rear window demister with timer	S
Illumination entry system	S
Electrochromic inside rear view mirror	S
Power adjustable front seats (memory function for driver seat)	S
LW/AM/FM radio with cassette and 7 speakers	S
CD auto changer in the glove box	S
Vehicle stability control system	S
Traction control system	S
ABS	S
Front airbag & side airbag for driver and passenger	S
Front seatbelt pre-tensioner with force limiter	S
Power adjustable seatbelt anchor memory for driver seat	S
Discharge headlamp with dynamic automatic levelling system	S
Head lamp cleaner	S
Leather upholstery	S
Power tilt and side sunroof (with jam protection)	S
Lexus Navigator route guidance system	S
Leather and wooden wrapped steering wheel and shift knob	O
Dynamic Handling Pack	O

S = Standard equipment O = Optional equipment

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