

THE LEXUS RX AND RX L

INTRODUCTION

The RX is one of the most significant models in Lexus's history. The original RX, launched in 1998*, was a unique proposition in its day: an SUV that was luxurious, comfortable and easy to drive, particularly in urban environments where conventional 4x4s proved unwieldy. It was an instant success and inspired a new and vital market segment in which today almost every premium manufacturer is represented.

Across two decades, Lexus has constantly improved the RX, which quickly became its worldwide best-selling model. Cumulative global sales to date have reached three million units. Its importance to the brand is witnessed by the fact it became Lexus's – and the world's – first luxury self-charging hybrid vehicle, with the market introduction of the RX 400h in 2005.

The current, fourth generation RX pushed the boundaries of the luxury SUV concept even further on its launch in 2015, as it acquired more emotional design and more engaging driving dynamics. It increased its market appeal with the addition of the seven-seat RX L model in 2018.

In 2020 the RX benefited from further improvements in a series of design, technical and dynamic upgrades that go well beyond the usual level of changes implemented in a product's mid-lifecycle, in line with Lexus's determination to exceed customers' expectations.

Chief Engineer Takeaki Kato said: "In developing the new model I was determined to keep and further refine the 'one-of-a-kind' value that only the RX could create, something which has been cultivated since the first generation."

The changes he and his team have delivered are led by new, evolutionary styling that maintains the RX's powerful and sporty appearance, while introducing more elegant elements and creating a coherent flow from front to rear, giving the vehicle a stronger, unified look. Details of the frontal treatment include a new rendition of the signature Lexus grille, with a mesh pattern of radiating "L" shapes that forms a design link to the UX urban crossover; slimmer headlight units; more rounded edges to the front bumper; and an

extended line from the rocker panel that connects with the bottom of the grille, projecting strength and stability. At the rear, a more elegant and powerful look has been created with a redesigned lower bumper that links smoothly to the rear wings. Elements such as the lights, reflectors, underguard and exhaust outlets are arranged on a strong horizontal axis to emphasise the vehicle's width and sense of purpose, while new LED combination lights feature a series of L motifs for the brake and tail lights and turn indicators.

The human-machine interface in the cabin has been improved with the availability of a new 12.3-inch central display that has a touchscreen function. To accommodate this new feature, the screen has been moved further forward on the centre console, giving a wider viewing angle and within easy reach of the driver and front passenger. The multimedia functions can also be operated using a new trackpad version of Lexus's Remote Touch Interface, or with voice control.

The RX also provides seamless smartphone connectivity via Apple CarPlay and Android Auto. Voice control can also be enabled via smartphones to Apple Siri or the Google Assistant.

The third-row seats in the RX L now feature two different seating positions, being electronically adjustable, they add even more leg space (+94mm) when the situation demands.

Dynamic improvements have been achieved by giving the RX a more rigid body, using laser screw welding, additional spot welds and high-strength adhesive at key points around the chassis. The suspension has been improved with a new, stiffer rear anti-roll bar, more rigid hubs and the use of a new Friction Control Device in the shock absorbers to further reduce high-frequency vibrations from small imperfections in the road surface.

The Adaptive Variable Suspension fitted to the RX F Sport provides almost constantly variable damping control at each wheel. The vehicle stability control gains Active Cornering Assist, which automatically suppresses understeer if the driver steps on the throttle in mid-corner. The electric power steering has been re-tuned for a more linear steering feel and better line-tracing faithful to the driver's intentions.

The latest version of Lexus Safety System+ provides additional protection to help prevent an accident happening, or lessen the consequence if the vehicle is involved in an impact. The Pre-Collision System's functionality has been increased, with pedestrian detection by day and night and daytime detection of bicyclists in the car's path.

In a world-first, the new RX is available with a BladeScan Adaptive High-beam System (AHS), which uses a rapidly rotating blade-shaped mirror to direct light from the LED

headlamps. It provides finer and deeper automatic forward illumination, making it easier to see pedestrians on the road margins. It also operates with no risk of dazzling drivers of vehicles ahead.

* UK launch 2000

DESIGN

The Lexus design team listened to feedback from current RX drivers around the world when developing ideas for how they could refine the vehicle's styling and make the new RX a car that would exceed customers' expectations.

The development and production teams collaborated closely on the project, with the aim of creating the kind of Brave Design that is central to today's Lexus models. The design theme was "seductive strength," expressed in a more captivating exterior and maximised interior packaging – a quality of the RX that historically has proved particularly attractive to customers. The challenge to the design team was to add elegance, but without diminishing the powerful SUV image.

Particular attention was paid to surface quality, incorporating more rounded, elegant surfaces at the front and rear. Finer details included changes to the shape, size and mesh pattern of the spindle grille, a new, narrow-aperture shape for the headlights and a distinctive new illumination signature for the rear combination lights.

Exterior design

In revising the exterior design, Lexus focused on the vehicle's overall form and silhouette, taking into account the balance between the front and rear and aiming to create a powerful, solid look that generates a greater sense of unity from one end of the vehicle to the other. This can be seen in the body line that flows directly from the front bumper to the sides of the doors, while the shape of the rocker panel now extends from below the doors, flowing into the bottom edge of the front grille, generating a powerful and stable appearance.

The front bumper itself has been changed from a straight and sharp form to being slightly rounded. The surface quality appears tauter, while still being in harmony with the overall design. The shape of the underguard has been changed too, so that it wraps around to the sides, emphasising the width and subtle ruggedness of an urban SUV.

The spindle grille is a central design element for all Lexus models and for the RX a designer was assigned to work solely on this element of the vehicle. It took almost six months to hand-craft a new mesh pattern, comprising thousands of individual lines.

The bottom edge of the spindle grille frame has been raised, changing the frame's proportions to harmonise with the sides of the vehicle bodywork. The grille features a new, L-shaped block mesh that changes in size as it radiates away from the central Lexus emblem. This design was introduced on the UX urban crossover, and its application on the new RX creates a new unity within Lexus's SUV line-up.

The headlight units present a strong and deeper Lexus signature, with even illumination across the entire surface of the daytime running lights. The same compact headlight unit as Lexus's LC flagship coupe is adopted, with three projector bi-LEDs. In addition, F Sport and Takumi grades use the world's first BladeScan Adaptive High-beam System, a technology breakthrough that provides deeper and more even illumination (details below).

At the side, the continuity between the front overhang and the doors has been accentuated, with the peak of the cross-section running straight along the side of the vehicle, strengthening the dynamic impression.

At the rear, the "seductive strength" theme can be seen in a new character line which runs from the side of the bumper to the lower reflector, shaped to echo the flow of the rear window graphic. The profile of the bumper matches the form that flows rearwards from the quarter panel, creating a sleeker look.

The bottom edge of the rear bumper has been lowered and all the rear design elements have been set on a horizontal axis, including the combination lights, reflectors, exhaust outlets and the underguard, giving a stronger impression of width and a more powerful stance.

The combination lights have a new design of four overlapping L motifs. This distinctive pattern is inverted for the sequential turn indicators, which are set parallel to the upper brake/tail lights.

The exterior styling changes are completed by 20-inch alloy wheels with silver multi-spoke design for the RX Takumi.

Seven-seat RX L

True to Lexus's principles of superior craftsmanship and *omotenashi* hospitality, the RX L has been designed for purpose, with an extended rear body that ensures there is no compromise in comfort or quality for everyone on board.

In its commitment to producing a comfortable and practical seven-seat version of its successful RX crossover, Lexus decided to create what is effectively a bespoke new body style, rather than try to work within the confines of the established five-seat model. Its solution was to design a new rear end for the vehicle, extending the length behind the rear axle. Although only 110mm longer overall, the RX L makes excellent use of the additional space to ensure that everyone on board can travel comfortably and that the third row seats have easy access and generous head and leg room.

Rear-seat headroom has been further helped by making the angle of the tailgate window slightly steeper, so the interior roofline is higher towards the back of the car. At the same time, the designers were careful not to detract from the RX's distinctive, coupe-like profile and the floating roof effect created by the blacked-out rear pillars.

The close attention to detail extends to the motor for the tailgate wiper being moved from the top to the bottom of the screen, to maximise the potential headroom.

The two rearmost seats can be moved forward and backward electronically depending on the customer's needs, providing additional legroom (+94mm) for people sitting in the third row. The seats can be adjusted using button controls accessible from the second row or the boot. Fine leather upholstery is also provided as standard, together with a triple-zone air conditioning system with independent controls for third row occupants.

Although the RX L retains the coupe-like profile of the five-seat RX, suitable headroom for the third row occupants has been secured by making the angle of the tailgate window slightly steeper. The second row bench seat has been set higher, so that there is good foot space for the third row passengers, too. The seats are ideal for children on any journey, and comfortable for adult users on shorter trips.

Accessing the third row has been made easy with a one-touch lever control on the outer second row seats which tips the seatback forward and slides the bench smoothly away. A step on the floor guides you in and the seat design has no exposed catches or mechanisms that can snag clothing or trip you up as you enter or exit the vehicle.

There is no compromise in the high-quality finish of the two rearmost seats, which are upholstered (as standard) in the same fine leather as the rest of the cabin and are fitted with a console with two cupholders and air conditioning controls.

When the seats are folded, the load space has a flat floor that extends to 1,067mm in length. A retracting tonneau cover keeps luggage out of sight; when not required, the cover unit can be stored in a dedicated space beneath the boot floor.

The RX L Takumi can be specified with two individual captain's-style chairs in the second row in place of the three-seat bench. This six-seat arrangement frees up more leg room for the third row passengers. It is also included in the Tech and Safety option pack and includes a heating function in the second row seats.

Aerodynamic features

A number of aerodynamic elements are incorporated in the bodywork, which help achieve a 0.33 drag coefficient and also contribute to vehicle stability and low cabin noise levels.

They include:

- A front under spoiler which directs airflow to the underbody, reduces aerodynamic drag and supports driving stability
- Fin-shaped corner sections beneath the headlights which improve airflow along the sides of the vehicle
- Front pillars designed to create less wind noise during high-speed driving
- Aero-stabilising fins on the tail-light covers, which wrap into the rear wings to give extra aerodynamic stability at the rear of the vehicle
- A rear spoiler across the width of the roof/tailgate window, which reduces lift and adds rear downforce
- A diffuser beneath the rear bumper, which smoothly draws airflow from beneath the vehicle, reducing drag and giving extra stability

Interior design

The cabin design strikes a balance between functionality and luxury, finished with refined materials that exude quality construction and craftsmanship. The ambience is spacious yet intimate, with high levels of comfort for driver and passengers.

To accommodate the new human-machine interface, the central 12.3-inch multimedia screen has been moved further forward on the centre console, giving a wider field of vision and within easy reach of the driver and front passenger. The console's central column has been redesigned to accommodate an improved trackpad version of Lexus's Remote Touch Interface control.

The RX's seats deliver both support and comfort with an ergonomic design and quality detailing that includes a vertical stitching pattern that is both good-looking and durable. The quilting pattern on the front seat seatbacks matches that on the door panel trims.

The driver and front passenger seats are low-set, allowing for excellent headroom. The position of the steering wheel closer to the driver and a lowered angle for the steering column create a more involving driving position.

A black finish for the instrument panel and doors can be combined with Black (RX grade), Rich Cream (Takumi) or new Ochre (all grades) trim. The RX Takumi offers greater choice of interior design, with a new Bamboo inlay can be specified with the Ivory trim; with the Black and Ivory options, the choices are Open Pore Walnut and Dark Brown Shimamoku.

The RX F Sport has two new interior trims – Flare Red and Black and White – and comes with a brushed aluminium inlay.

Dimensions and packaging

The current generation RX was designed with a more spacious interior, particularly for rear seat passengers. By using a new frame construction for the front seats, more legroom was obtained for the rear passengers, adding an extra 20mm of knee clearance compared to the previous model. And to help front seat occupants find the ideal seat position, the seat height adjustment range was increased by 15mm.

The RX is both longer and wider than the previous generation model: width grew by 10mm to 1,895mm and length by 120mm to 4,890mm; the height was unchanged at 1,720mm.

The extra length crucially saw 50mm added to the wheelbase (2,790mm), allowing for a more spacious and comfortable interior.

Lexus has comfortably accommodated an extra, third row of seats in the RX L model by adding 110mm to the rear overhang, taking the vehicle's overall length to 5,000mm, and by giving the tailgate window a steeper angle to secure generous headroom for the rearmost passengers.

RX F SPORT

The RX F Sport raises the sporty image to a higher level with a series of special visual and performance features that distinguish it from other RX grades.

Exterior details include a jet black finish to the F Sport-exclusive spindle grille mesh and a new black frame that blends into the side of the front bumpers to create a unified profile. An aluminium-look lower bumper, edged in black, and underguard complete the redesign.

The 20-inch F Sport wheels have a multi-spoke design and are fitted with 235/55R20 tyres.

The interior is styled to suit the F Sport's character with exclusive details such as highly supportive seats with quilted upholstery, new F brushed aluminium trim inserts and the choice of Black, Black with white accents and Flare Red with black accents colour-ways. The shift lever and three-spoke steering wheel are also specific to the F Sport and are covered in a tactile perforated leather. There are also drilled, non-slip aluminium sports pedals.

The instrument cluster is different, too, with an eight-inch display dominated by a larger, circular gauge that cleverly combines the functions of a tachometer and speedometer.

POWERTRAIN

The RX 450h's self-charging full hybrid system features a 3.5-litre direct injection V6 petrol engine, which has a maximum output of 259bhp/262 DIN hp/193kW at 6,000rpm with 335Nm of torque at 4,600rpm. The total system output (engine and electric motor combined) amounts to 308bhp/313 DIN hp/230kW.

The engine's combustion chamber design generates a high degree of tumble inside the cylinders, improving combustion performance. The combined cycle fuel consumption is from 35.3 to 36.2mpg (34.4mpg for the RX L). Combined cycle CO₂ emissions are from 178g/km (185g/km for the RX L).

The powertrain is unchanged but benefits from the significant improvements introduced at the launch of the fourth generation model. The key components and control systems in the Lexus Hybrid Drive System were improved and re-engineered to deliver class-leading fuel economy, minimal emissions and excellent on-road performance. The front transaxle gained a new water-cooled transmission oil cooler for the electric motor and a pre-loaded differential to improve performance and straight-line stability.

The rear transaxle featured in the E-Four all-wheel drive system was redesigned with a three-shaft configuration, creating a more compact unit in which the input shaft can be moved as close as possible to the output shaft. The design also saves weight by using aluminium for the case and cover.

The shape of the intake ports and combustion chambers generates a high degree of tumble inside the cylinders, improving combustion efficiency.

Other updates to the system included a design evolution of the Power Control Unit (PCU), and HV Engine Control Unit (ECU) that delivers better energy efficiency, more driver-friendly operation and more refined performance. A lighter, more efficient electric water pump was introduced and the hybrid battery was repackaged, making it more compact and improving space efficiency. The E-Four electric all-wheel drive system's control functions were improved to give better response when accelerating through bends.

E-Four all-wheel drive

The RX 450h uses Lexus's proactive E-Four system, which locates an additional motor/generator on the rear axle. Fuel and energy use are reduced, as AWD operation is limited to only when necessary, allowing the rear-mounted motor to act as a generator to charge the battery when the vehicle's regenerative braking system is operating.

CHASSIS AND DRIVING DYNAMICS

Lexus targeted better driving performance, particularly handling stability, and also sought to improve ride comfort and give the driver a greater sense of being at one with the vehicle. An increase in body rigidity has been central to achieving these goals, through an increase in the number of spot welds and the application of a greater amount of structural adhesive in the vehicle's construction. Detailed adjustments and changes have also been made to the suspension and damping system.

Body rigidity

Lexus engineers identified key areas in the rocker panels, rear wheelhouses and the underbody where additional spot welds and the use of structural adhesive could deliver a more rigid body. In all, an extra 4.2 metres of adhesive and 14 weld points have been added in these areas, accomplished using the existing tooling on the production line at the Kyushu plant. This increases the integrity of the panel joints, benefiting both stability and ride comfort.

Laser screw welding is also used in the RX's construction and high-tensile strength steel is applied in key areas such as the underbody cross members and the front and centre pillar sections. A ring-frame construction technique adds strength to the frame sections around the front and rear doors, while areas around the rear body frame have numerous spot welds to give more strength and handling stability. These measures contribute to handling quality and cabin quietness, as well as the overall structural rigidity of the vehicle platform.

The RX F Sport is equipped with front and rear performance dampers, which further increase chassis rigidity and the vehicle's responsiveness.

Suspension

The RX offers more agile handling and driving pleasure, whether driving on urban streets or open, winding roads thanks to changes to its suspension and damping.

The key was to increase suspension rigidity, focusing on the hub bearings to gain improved responsiveness. At the same time, a thicker rear anti-roll bar has been added with a hollow rather than solid form. This decreases the roll angle, reduces understeer and also saves weight.

The thickness of the anti-roll bar allows for a reduction in coil spring rates, ensuring a high level of overall ride quality. The spring rates and bushing rigidity of the rear suspension are calibrated to complement the sturdiness of the car's front end.

MacPherson struts are used for the front suspension, with trailing arms/double wishbones at the rear – a set-up designed to give extra stability through corners and excellent handling overall.

Friction Control Device

A friction control device has been introduced in the front and rear shock absorbers to help give a flat ride on roads with slightly uneven surfaces, and to improve steering responsiveness.

The device is located inside the shock absorbers and has a rubber lip that helps reduce the high frequency vibrations that are generated by minor unevenness in the road surface and can't be controlled using hydraulic pressure.

Adaptive Variable Suspension

The RX F Sport and Takumi models adopt the latest Adaptive Variable Suspension technology (first introduced on the Lexus LC flagship coupe), which allows for much finer control of damping force on each wheel to reduce shock and maintain a flat, comfortable

ride even on very rough roads and surfaces. Damping force is reduced at low speeds and increased at high speeds, reducing body roll and enhancing steering response.

The actuator uses a linear solenoid, located on the lower side of each shock absorber, below the spring. This design contributes to a lower bonnet line and less intrusion in the rear load space.

The number of damping force levels has been increased to 650 to provide near-seamless, constantly variable damping. The result is smoother, quicker and more precise control in response to changes in road surface quality and the driving conditions.

The system has a number of integrated functions, including Roll Posture Control, Anti-Pitch Control, Repercussion Control and Roughness Sensing Control, to adapt AVS performance to all road surfaces and driving dynamics.

On models equipped with AVS, the Drive Mode Select system gains Sport S, Sport S+ and Customise selectable drive modes, raising performance and driver rewards (further details below).

Active stabiliser suspension

The RX F Sport offers the option of an active stabiliser suspension system, operating in a world first with Roll Skyhook Control. This suppresses roll without detracting from ride comfort and maintains stability when turning.

There are two control modes, operating in line with the Drive Mode selected by the driver. In Eco, Normal and Sport S modes, the focus is a composed, natural and comfortable vehicle posture, with initial turning response. With Sport S+ mode, the turning posture is more stable with more agile turning response.

When driving on uneven road surfaces, the Roll Skyhook Control helps maintain comfort by suppressing vehicle movement in the direction of body roll. The system detects the direction of vehicle roll from data from the vertical G sensor, then activates the appropriate stabiliser actuator to suppress the movement.

Steering

The RX's electric power steering is calibrated to communicate excellent road feel to the driver. The rigidity of the intermediate shaft and the instrument panel also contribute to good steering feel, with refinement details such as a slowing of steering wheel movement as it returns to centre, adding to the overall controllability, smoothness and responsiveness. The

steering wheel is set at an angle that makes it easy to hold the desired turning angle when driving deep into a bend.

Extended reach and rake adjustment makes it easy for the driver to set an ideal position, while the low-set steering column helps provide a sportier driving position.

Vehicle Stability Control with Active Cornering Assist

Active Cornering Assist maintains comfort while working to faithfully trace the driver's desired line on winding roads or through bends, by suppressing the tendency to understeer that commonly occurs when the driver presses the throttle during high-G cornering.

The vehicle stability control (VSC) applies brake control to help prevent the car skidding when speed is too high during cornering. If the driver presses the throttle while the car is understeering in a high-G turn, the VSC will apply braking control to the inner wheels, generating a yaw moment and suppressing the understeer.

Brakes

The RX's powerful braking system uses front and rear ventilated discs to obtain exceptional stopping power and fade resistance. An electric parking brake is fitted as standard.

Drive Mode Select

The RX's Drive Mode Select system lets the driver choose from different settings to suit their preferences, or the driving conditions. Each setting adjusts the suspension damping force, engine output, throttle response and other chassis and engine parameters.

The standard system provides Normal, Eco and Sport modes, while versions of the RX fitted with Adaptive Variable Suspension additionally feature Sport S, Sport S+ and – an established Lexus first – Customise modes.

Eco mode moderates throttle response and engine power output and adjusts climate control operation to support fuel economy.

Normal mode provides an even balance between engine performance and fuel economy. Together with Eco mode, it provides a suspension setting that prioritises comfort.

Sport mode ramps up performance with sharper throttle response and acceleration and adds weight to the steering.

Sport S sets an even higher performance level, with revised throttle mapping and quicker powertrain response. The hybrid system allows for enhanced accelerator response and a feeling of more powerful acceleration.

Sport S+ combines the powertrain enhancements of Sport S mode, while sharpening the feel of the electric power steering and initiating stiffer suspension for flatter cornering.

The Customise mode lets the driver combine their preferred settings for the engine/hybrid system, chassis and air conditioning to suit their preference. This can be accomplished in an easy-to-follow process using the RX's central display screen.

The driver can also make use of an EV mode which switches the vehicle to all-electric operation, shutting down the petrol engine until the limit of battery charge or speed is reached.

Noise and vibration measures

Lexus engineers scrutinised the smallest details to identify measures that might reduce noise and vibration levels to a minimum in the fourth generation RX.

For example, a cowl silencer was deployed and holes and gaps in the dashboard silencer were minimised to improve sound absorption and insulation. The surface area of the cowl insulator was enlarged and the bonnet insulator made thicker. The apron silencer was made 10 to 20 per cent larger, reducing the penetration of engine noise, while even the material used for the wheelhouse liner was changed to a non-woven type, cutting road and gravel spatter noise.

To reduce wind noise around the front pillars, the shape of the cowl louvre, the triangular "patch" ahead of the quarterlight and the shape of the door mirror were adjusted. The door mirror units were moved further back to avoid wind turbulence, and a regulating lip was added to the cowl louvre, redirecting the airflow away from the mirror.

In addition, the dynamic damper installation and the left front suspension member mount were adjusted to reduce any booming noise.

Other measures in the body include acoustic glass in the side windows, sound-damping coatings for the vehicle floor, careful positioning of the rear body frame to reduce lateral vibration and strategic use of foam/sponge vibration damping material around the door apertures and front header. Sound-absorbing materials are featured in key areas of the cabin, ceiling and floor to prevent the intrusion of noise from the engine compartment and from outside the vehicle, and the doors feature full-edge double seals.

ADVANCED SAFETY FEATURES

Lexus Safety System+

The RX comes equipped with the latest version of Lexus Safety System+, an integrated safety package that delivers even higher levels of active safety and driver assistance to help prevent accidents happening, or reduce their severity should an impact be unavoidable.

The **Pre-Collision System (PCS)** uses a front-mounted camera and millimetre-wave radar to detect vehicles and pedestrians on the road ahead. If it calculates a risk of a collision, it automatically warns the driver and provides extra braking force the moment the brake pedal is pressed. If the driver fails to react and the system judges a collision to be imminent, the brakes are automatically applied to reduce vehicle speed and the force of any impact, and the seatbelts are tensioned.

The functionality of the PCS has been increased so that it is now capable of detecting pedestrians in the vehicle's path in both day and night-time driving, and bicycle riders during daylight hours.

The same radar unit is used to provide all-speed **Dynamic Radar Cruise Control (DRCC)**, which helps the driver maintain a safe distance from the vehicle in front. Once the way ahead is clear, the RX automatically accelerates to its pre-set cruising speed. The system is able to provide low-speed following, making driving more relaxing as well as safer in stop-start traffic.

Lane Tracing Assist (LTA) detect when the RX deviates from its correct traffic lane, without the turn indicators being used. The system will automatically provide a warning and steering inputs to help keep the vehicle centred in its lane, detecting markings on the road surface or the road margin. These features operate when the Dynamic Radar Cruise Control is being used and can be switched off, if desired.

The driver also gains a "second set of eyes" when it comes to important road signs on motorways and major routes. The **Road Sign Assist** system uses a front camera to recognise principal warning and command signs, which are then replicated on the multi-information and head-up displays, reducing the risk of the driver not being aware of speed limits, lane closures and other important information.

Lexus Safety System+ further includes **Automatic High Beam (AHB)**, which detects oncoming traffic and vehicles ahead and automatically switches the headlights between high and low beam.

Advanced Driver Assist Features

World-first BladeScan Adaptive High-beam System

RX F Sport and Takumi models feature an **Adaptive High-beam System (AHS)** with a world-first BladeScan technology. This provides even better illumination by adjusting light distribution to avoid dazzling other road users, instead of switching the headlights to low beam.

It gives the driver a wider field of illumination than conventional LED array-type headlights, with smooth and fine light distribution. The technology addresses the fact that many pedestrian accidents happen during night-time driving, making it easier for the driver to see pedestrians on the road margin further ahead.

In simple terms, light from the LEDs in the headlamp unit is projected onto a blade-shaped mirror that rotates at 6,000rpm. The light reflected from the mirror passes rapidly through a lens to give forward illumination. Because of the residual image effect, there is no sense of the light moving, but in fact the light is turned on and off, timed in perfect synchronisation with the rotation of the mirror, enabling fine control of light distribution. The system allows the range of high beam illumination to be broadened naturally. As a result, road margins and other areas ahead that are particularly difficult for the driver to see become brighter and more visible. Pedestrians and road signs can be discerned earlier, without the risk of oncoming or preceding vehicles being dazzled.

A lamp ECU in the left side headlight checks environmental information from the front camera, such as the presence of vehicles ahead and ambient brightness, together with vehicle speed and yaw rate information. Using this data, it operates the LEDs and adjusts brightness for optimum light distribution.

An array-type AHS changes light distribution in increments of one to two degrees. This can make the light appear to flicker, which can be uncomfortable for the driver. The BladeScan™ Adaptive High-beam System has been developed with 0.1-degree increments in light distribution to give sufficiently bright light without appearing unnatural.

With a switched array-type system, pedestrians can be detected up to 32m ahead; with the BladeScan™ Adaptive High-beam System this distance is extended to 56m.

The technology has been developed during the past 13 years by Lexus and Koito Manufacturing. Their research determined the optimum design for a fan-shaped blade, durable enough to endure constant high-speed rotation. This involved using a high-performance ball bearing in the small motor that rotates the mirror and fine adjustments to the position and balance.

Durability has been proven in running tests lasting more than 10,000 hours. Testing took into account whether operation might affect safety systems that use cameras, the impact of

different weather conditions, such as fog, snow and rain on performance, and whether the strobing of light could cause health problems

As well as meeting performance targets, the system also had to be accommodated in the RX's new, narrower headlight units. Thanks to the close co-operation between Lexus and Koito Manufacturing, this was achieved so that each unit contains three projector bi-LEDs and an independent BladeScan™ Adaptive High-beam System unit.

Sway Warning

The cameras used in the RX's Lane Tracing Assist also provide a **Sway Warning** function. This monitors the car's position in its lane and the driver's steering inputs. If it detects degrees of vehicle swaying caused by driver distraction or drowsiness, it will sound an alert and display a warning on the multi-information display, recommending the driver takes a break.

Adaptive Variable Suspension (AVS) control

When the Pre-Collision System determines that there is a high likelihood of a collision, the RX F Sport's Adaptive Variable Suspension Control system instantaneously adjusts shock absorber damping within the suspension to enhance the vehicle's responsiveness as an additional driver aid.

Panoramic View Monitor

Negotiating a tight parking space or making your way over rough and unmade surfaces are made easier and safer in the Lexus RX with a 360-degree Panoramic View Monitor – standard on the RX Takumi and available with the Takumi Pack option for the F Sport. This uses an array of cameras that give the driver an all-round view of the vehicle's location, plus a bird's eye view for even better sight of the vehicle's immediate surroundings.

The Panoramic View Monitor can reveal obstacles, hazards and other vehicles that may be hidden from view from the driver's seat, eliminating any blind spots. When steering the car into parallel or series parking spaces, the Parking Assist Monitor can add guidelines to the real-time camera images to help the driver steer precisely, while front and rear sensors will sound an alert as the vehicle moves closer to another car or obstacle.

Blind Spot Monitor and Rear Cross Traffic Alert with auto brake

A Blind Spot Monitor uses rear-mounted radars to detect vehicles in adjacent lanes, or objects behind the RX when reversing. The same radars provide a Rear Cross Traffic Alert function, which warns the driver of traffic or people approaching from either side when

reversing out of or into a parking space, and has an Auto Brake function if the manoeuvre cannot be made safely. It works in conjunction with a Blind Spot Monitor, using the same rear-mounted radar. These functions are standard on the RX Takumi and available in the Tech and Safety and Takumi Pack options.

Parking Support Brake

The Parking Support Brake system provides safer parking and low-speed manoeuvres. If it detects a risk of the vehicle making contact with a static object in front or behind, or with another vehicle approaching from either side at the rear, it will automatically apply drive and brake control to help avoid a collision and reduce damage risk.

The system includes the functions of the Intelligent Clearance Sonar and the Rear Cross Traffic Auto Brake, enhancing visibility and making operation easier for the driver.

MULTIMEDIA AND AUDIO SYSTEMS

Lexus multimedia systems

For easier operation of the 12.3-inch Lexus multimedia system, the Remote Touch Interface has been changed to a touchpad. This responds to gesture controls – swipe, pinch, flick – like those used on tablets and smartphones.

At the same time, the display itself has a new touchscreen function, as an alternative to using the touchpad. To make operation easier when using touch controls, the screen has been moved forward so that it sits closer to the driver and front passenger.

To further improve connectivity and on-board personal entertainment options, the two USB ports have been moved to the front of the centre console and two more have been located on the rear of the unit, within easy reach of rear-seat passengers.

The standard Lexus multimedia system features an eight-inch TFT display on the centre console, operated by the Remote Touch Interface. The screen can be set to display a single panel (full map), two-panel (half map, half information), or three-panel (half map, two info screens) view. The driver can set their own information preferences, including navigation, fuel consumption, audio details and air conditioning settings.

LexusLink

LexusLink gives the RX excellent connectivity, accessed via a dedicated app. It's introduced with a range of useful functions, including: -

- Find my Car, including the option to share locations with friends
- Share to Car, to send navigation destinations to the car
- Last mile guidance
- Driving Analytics, including speed, distance travelled, time in vehicle, idle time, top speed, severity of braking and acceleration and percentage of time spent in motorway driving
- Online service bookings and reminders
- Active Safety Plan to automatically notify a chosen contact via SMS in the event of an accident

The RX comes with a WiFi hotspot as standard, including a complimentary three-month/24GB data plan. Customers can subscribe to data plans via the Lexus portal.

Smartphone connectivity with Apple CarPlay^T and Android Auto

Lexus has made smartphone integration easier by providing connectivity to Apple CarPlay and Android Auto in the RX.

With Android Auto, drivers can seamlessly access and use their phone on the car multimedia display. With larger on-screen targets, a simplified interface, and easy-to-use voice actions through the Google Assistant, it's designed to minimise distraction, so the driver can stay focused on the road. Once connected, audio can be enjoyed from apps and messages through commonly used services such as WhatsApp. The interface also allows preferred navigation apps to be used. With the Google Assistant in Android Auto, drivers can use voice commands.

For Apple CarPlay integration, vehicle occupants can use their iPhone via the car's multimedia display. When their phone is connected, commands for driving directions, phone calls, and sending and receiving messages via Siri are enabled. They can also gain access to apps such as Apple Music, Apple Maps, podcasts and audiobooks, as well as third party apps.

The centre console features a new smartphone holder and additional USB ports, including a port suitable for video play-back.

Other information and entertainment features include DAB Seamless Link, with seamless switching between broadcast channels to maintain signal quality; Miracast, which displays smartphone screen images on the central display and relays phone audio through the car's speakers; Smartphone Linking to display compatible apps on the central display; and Smart

Device Link, which allows phones to be connected and interacted with, via the new Smartphone Linking function.

Pioneer 12-speaker audio

Pioneer's 12-speaker system, featured as a standard on the RX and F Sport grades, comes with a single DVD player and benefits from Coherent Source Transducer (CST) technology that gives extremely realistic and high-quality sound reproduction in the mid to high range and adds boost to low tones. The speaker array includes 200mm subwoofers and 180mm woofers in the front doors.

Mark Levinson Premium Surround System

The Mark Levinson Premium Surround System in the Takumi grade model was designed specifically to work within the interior architecture of the vehicle to ensure the best possible listening experience throughout the cabin. It comprises 15 speakers: front and centre Unity 9cm tweeters, a front elliptical woofer, two rear 2.5cm tweeters, two rear 17cm full range speakers, two 9cm satellite mid-range units and a 20cm rear sub-woofer.

The Unity 9cm speakers feature high and mid-range cones with a single magnetic circuit. Bringing the cones as close together as possible helps achieve a smooth connection between the mid and high ranges, similar to a full-range speaker. The design is also more compact than coaxial speakers.

The Mark Levinson system uses ClariFi technology to restore the quality of compressed digital music files, producing rich low tones and crisp mid-to-high tones that envelop the listener, whatever the sound source. Quantum Logic Surround analyses the vocal, instrumental and musical atmosphere qualities of the music being played and allocates them to the appropriate speakers to build an accurate acoustic stage. This creates audio playback that faithfully reproduces the sound intended by the performer and the recording engineers.

UK MODEL RANGE

The new RX is available in the UK in three equipment grades: RX, F Sport and Takumi. The seven-seat RX L is offered in RX L and Takumi trims.

Features introduced across the board in the 2020 upgrade included: -

- Latest generation of Lexus Safety System+
- 12.3-inch multimedia touchscreen display

- Apple CarPlay and Android Auto smartphone integration
- Heated steering wheel
- Paddle shifts
- Additional (+2) front USB ports

Key features

RX/RX L

Apple CarPlay/Android Auto

12.3-inch multimedia display with touchscreen functions

Steering wheel-mounted paddle shifts

Power tailgate with (RX L only) kick sensor

Front and rear USB charging ports (total 6)

Wireless device charger

New-generation Lexus Safety System+

Triple-eye LED headlights with Automatic High Beam

Intelligent Clearance Sonar

12-speaker audio

Lexus Navigation

Tahara synthetic leather upholstery

Lexus Link connected services (via app)

Heated, eight-way power-adjustable front seats

Heated front seats (RX only)

RX F Sport

Front and rear performance dampers

Adaptive Variable Suspension with 650 variable damping settings

Active stabilisers (option)

Sunroof (option)

Triple-eye LED headlights with BladeScan™ Adaptive High-beam System

20-inch F Sport alloy wheels

F Sport smooth leather seats

F Sport exterior styling details

Illuminated entry system

RX/RX L Takumi

20-inch alloy wheels

Blind Spot Monitor

Rear Cross Traffic Alert

Card Key

Head-up display

360-degree panoramic view monitor

Semi-aniline leather upholstery

10-way power-adjustable front seats with memory setting

Four-way lumbar support on front seats

Heated, power-adjustable second row seats

Mark Levinson 15-speaker surround sound audio

Panoramic roof (RX)/Sunroof (RX L)

Full equipment data is provided in the specification table in this press kit, including option pack availability and contents.

LEXUS RX/RX L TIMELINE AND UK SALES

YEAR	MONTH	EVENT
1999		The first generation RX 300 is launched in North America and quickly becomes the best-selling model in its class.
2000	October	RX 300 goes on sale in the UK.

2003	January	New RX 300 revealed at the Detroit motor show. Lexus also announces it will build a hybrid version of its luxury SUV.
	May	New generation RX goes on sale in the UK.
2004	May	The full hybrid RX 400h makes its UK debut at the British motor show.
2005	June	UK sales of the RX 400h begin.
2006	April	Power is increased with the introduction of the RX 350, fitted with a new 3.5-litre V6 petrol engine. RX 300 is discontinued.
2007	January	The RX 350 Limited Edition is launched.
	August	Introduction of the RX 400h SR
2008	November	Third-generation RX, the RX 450h, is unveiled at the Los Angeles motor show.
2009	June	The RX is the top-ranked model in the 2009 J.D. Power and Associates UK customer satisfaction survey.
	July	The RX 450h is launched in the UK, and the RX 350 and 400h are discontinued.
2010	June	The RX is the top-ranked model in the 2010 J.D. Power and Associates UK customer satisfaction survey.
2011	January	The RX SE-I Lifestyle is introduced, with additional features designed for winter weather driving.
	October	The Advance grade is added to the RX line-up.
2012	May	Revised RX range introduced with new F Sport grade and revised styling, including new spindle-shaped front grille
2013	November	Introduction of the RX 450h Advance
2014	August	A new-specification Advance model is introduced to the range.
2015	September	UK prices and specifications are announced for the all-new RX. The range includes both full hybrid RX 450h and turbocharged petrol-powered RX 200t.
	December	The RX achieves the highest score yet for a large SUV in Euro NCAP safety testing .
2016	January	First RX deliveries to UK customers.
2017	September	RX 200t is deleted from the range
2018	May	Addition of the RX Sport model to the UK range. The seven-seat RX L is introduced.
	December	Introduction of the 2019 RX with new three-grade model range.

2019	November	Significant updates announced for the 2020 RX and RX L, including first use of BladeScan Adaptive High-beam System.
2020	January	Start of UK sales of the updated RX and RX L.

RX L sales in UK markets in 2020: 362

Cumulative RX and RX L UK sales since launch (2000, all versions): 54,847

LEXUS RX L TECHNICAL SPECIFICATIONS

ENGINE	
Engine code	2GR-FXS
Engine type	V6
Valve mechanism	24-valve DOHC, VVT-iW
Displacement (cc)	3,456
Bore x stroke (mm)	94.0 x 83.0
Compression ratio	13.0:1
Full system power – petrol engine & electric motor (bhp/DIN hp/kW)	308/313/230
Max. engine power (bhp/DIN hp/kW @ rpm)	259/262/193 @ 6,000
Max. engine torque (Nm @ rpm)	335 @ 4,600
HYBRID SYSTEM – RX 450h	
Electric motor (front)	
Type	AC permanent magnet, synchronous motor
Max. power (bhp/kW)	165/123
Max. torque (Nm)	335
Electric motor (rear)	
Type	AC permanent magnet, synchronous motor
Max. power (bhp/kW)	67/50
Max. torque (Nm)	139
Hybrid battery	
Type	Nickel metal-hydride
Nominal voltage	288
Number of cells	240
System voltage	650
PERFORMANCE	
0-62mph (sec)	8.0
Max. speed (mph)	112
DIMENSIONS	
Overall length (mm)	5,000
Overall width – without mirrors (mm)	1,895
Overall height (mm)	1,700
Wheelbase (mm)	2,790
Track front (mm)	1,640
Track rear (mm)	1,630
Overhang front (mm)	1,080
Overhang rear (mm)	1,130
Coefficient of Drag (Cd)	0.33
Fuel tank capacity (litres)	65

INTERIOR DIMENSIONS		
Interior length (mm)		2,773
Interior width (mm)		1,623
Interior height (mm)		1,203 1,131 (with sunroof)
Load capacity (VDA, litres)	All rear seats up, floor to top of 3 rd row seats	176
	All rear seats up, floor to roof	211
	3 rd row seats folded (floor to tonneau cover)	432
	3 rd row seats folded (floor to roof)	652
	2 nd and 3 rd row seats folded (floor to top of front seats)	966
	2 nd and 3 rd row seats folded (floor to roof)	1,656
WEIGHTS (kg)		
Kerb weight (kg)		2,205 – 2,270
Gross vehicle weight (kg)		2,840
Towing capacity – braked (kg)		n/a
Towing capacity – unbraked (kg)		n/a
TRANSMISSION		
Type		E-CVT
Gear ratios	Forward	3.137
	Reverse	n/a
Differential Gear Ratio (front/rear)		3.137/6.859
FUEL CONSUMPTION (WLTP), EMISSIONS (WLTP), INSURANCE, SERVICING & WARRANTY		
Combined (mpg)		34.4

CO ₂ emissions – combined (g/km)	RX L	185 186 with sunroof
	RX L Premium Pack	185 186 with sunroof
	RX L Premium & Tech & Safety Pack	186
	Takumi	185
Insurance groups	RX L	41E
	Takumi	42E
Service intervals		10,000 miles/annually
Comprehensive warranty		3 years/60,000 miles
Hybrid warranty		5 years/60,000 miles (whichever first)
Corrosion & perforation		12 years/unlimited mileage
Surface rust & paintwork		3 years/unlimited mileage
SUSPENSION		
Front		MacPherson strut
Rear		Double wishbones
BRAKES		
Front (diameter x thickness, mm)		Ventilated discs 328 x 34
Rear (diameter x thickness, mm)		Ventilated discs 338 x 18
Parking brake		Electric
STEERING		
Type		Rack and pinion, electric power steering
Ratio		14.7:1
Turns (lock to lock)		2.7
Min. turning radius (m)	Tyre	5.9
	Body	6.9
TYRES & WHEELS		
Wheel & tyre size		20x8J, 235/55R20 102V
Spare wheel		Temporary spare

LEXUS RX L EQUIPMENT SPECIFICATIONS

SAFETY & DRIVER ASSISTANCE	RX L	TAKUMI
Lexus Safety System+ with Pre-Collision System, Dynamic Radar Cruise Control, Lane Tracing Assist, Sway Warning System, Road Sign Assist & Automatic High Beam/BladeScan Adaptive High-beam System	✓ (with Automatic High Beam)	✓ (with BladeScan Adaptive High-beam System)
Driver & front passenger airbags	✓	✓
Driver & front passenger side airbags	✓	✓
Driver's knee airbag	✓	✓
Front passenger cushion airbag	✓	✓
Rear passenger side airbags	✓	✓
Curtain Shield airbags	✓	✓
Front passenger airbag cut-off switch	✓	✓
Child proof locks on rear doors	✓	✓
ABS	✓	✓
Electronic Brakeforce Distribution (EBD) with Brake Assist System (BAS)	✓	✓
Vehicle Stability Control (VSC+)	✓	✓
Traction Control (TRC)	✓	✓
Vehicle Dynamics Integrated Management	✓	✓
Hill-start Assist Control (HAC)	✓	✓
Blind Spot Monitor and Rear Cross Traffic Alert with automatic braking	Opt pack ²	✓
Tyre Pressure Warning System	✓	✓
Electronic front and rear seatbelt pretensioners with force limiters	✓	✓
Five three-point seatbelts	✓	✓
High mounted rear stop light	✓	✓
Emergency brake signal	✓	✓
Seatbelt warning system	✓	✓
ISOFIX child seat anchor points on outer rear seats	✓	✓
Adaptive Variable Suspension	x	✓
INSTRUMENTS & CONTROLS	RX L	TAKUMI
Drive Mode Select – 4 modes	✓	x
Drive Mode Select – 5 modes	x	✓
Speed-sensitive electric power steering	✓	✓
Colour head-up display	Opt Pack ²	✓
AUDIO, NAVIGATION & INFORMATION	RX L	TAKUMI
12.3in Lexus Navigation with 12-speaker audio, DAB, DVD player, Connected Services, Street View, Remote Touch touchpad and reversing camera	✓	✓ (with Mark Levinson audio)
15-speaker Mark Levinson Surround Sound system	x	✓
USB x6 and Aux socket x1 (VTR compatible)	✓	✓
Bluetooth	✓	✓
Apple CarPlay and Android Auto	✓	✓

Lexus Link connected services (with WiFi option)	✓	✓
COMFORT & CONVENIENCE	RX L	TAKUMI
Climate Concierge	✓	✓
Triple-zone climate control with S flow and nanoe technology	✓	✓
Power windows	✓	✓
Rain-sensing wipers	✓	✓
Smart Entry and Start	✓	✓
Intelligent parking assist sensors	✓	✓
Wireless smartphone charger	✓	✓
360-degree panoramic view monitor	x	✓
Adjustable turn indicator flash sequence (3, 5 or 7)	✓	✓
LED interior lighting	✓	✓
Auto-dimming rear-view mirror	✓	✓
Leather-trimmed steering wheel with paddle shifts and multi-function controls	✓	x
Heated leather-trimmed steering wheel with paddle shifts, multi-function controls and auto-away function	Opt pack ^{1,2}	x
Wooden steering wheel with audio, phone, cruise control multi-function controls and auto-away function	x	✓
Rear door sunshades	x	✓
Analogue clock with GPS	✓	✓
12v accessory socket x3	✓	✓
SECURITY	RX L	TAKUMI
Alarm with siren and two sensors	✓	✓
Two-motion double door locking	✓	✓
Speed-sensitive auto door locking	✓	✓
VIN etching	✓	✓
Card key (in addition to standard key)	x	✓
Locking wheel nuts (Thatcham approved)	✓	✓
SEATING, UPHOLSTERY & TRIM	RX L	TAKUMI
Tahara synthetic leather upholstery	✓	x
Smooth leather upholstery	Opt pack ^{1,2}	x
Semi-aniline leather upholstery	x	✓
Heated and ventilated front seats	✓	✓
8-way power front seat adjustment	✓	x
10-way power front seat adjustment	x	✓
Memory function for driver and front passenger seats, steering wheel and door mirrors	x	✓
Driver's seat with auto-away function for easy access/exit	✓	✓
60:40 split-folding/adjustable second row seats	✓	✓
Captain's-style second row seats	Opt ²	Opt

Heated rear seats	Opt ²	✓
Power-folding rear seats	x	✓
Power-folding third row seats	✓	✓
Foldable centre rear seat section	✓	✓
Front and rear armrests with 2 cupholders and front storage	✓	x
Front and rear armrests with 2 cupholders and front and rear storage	x	✓
Black grain trim inlays	✓	x
Laser-cut wood trim inlays	x	✓
Welcome illumination	✓	✓
LED interior illumination	✓	✓
LED instrument panel illumination	x	✓
Leather gear shift trim	✓	✓
Stainless steel scuff plates	✓	x
Aluminium scuff plates with LED detail	x	✓
EXTERIOR	RX L	TAKUMI
Auto-folding, auto-dimming, heated door mirrors with memory setting, reverse tilt function and integrated turn indicators and puddle lights	✓	✓
Rear privacy glass	✓	✓
Hands-free power tailgate	✓	x
Hands-free power tailgate with kick sensor	x	✓
Triple-eye LED headlights with Automatic High Beam	✓	x
Triple-eye LED headlights with BladeScan™ Adaptive High-beam System	x	✓
LED daytime running lights	✓	✓
LED front fog lights	✓	✓
LED low-speed cornering front fog lights	✓	✓
LED rear lights	✓	✓
LED sequential turn indicators	✓	✓
Illuminated door handles with puddle lights	✓	✓
Integrated roof rails	✓	✓
Sunroof	Opt/Opt pack ²	✓
20in alloy wheels	✓	x
20in alloy wheels with optional colour inserts	x	✓
Space saver temporary spare wheel	✓	✓
Metallic/special paint finishes	Opt	Opt

OPTION PACKS	RX L	TAKUMI
¹ Premium Pack: smooth leather upholstery, heated and ventilated front seats, heated steering wheel, power tailgate with kick sensor, driver's seat easy access auto-away function and memory	Opt	x
² Tech and Safety Pack (in addition to Premium Pack): Head-up display, Blind Spot Monitor, Rear Cross Traffic Alert with Intelligent Clearance Sonar and automatic braking, sunroof, heated rear seats (with 6-seat cabin layout)	Opt	x

ENDS

Ref: 211012M