

Lexus Reveals Unique Full Hybrid LS 600h L Landaulet

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A unique Lexus full hybrid LS 600h L Landaulet* featuring a one-piece, transparent polycarbonate roof will serve as the official Royal Wedding car on the occasion of the marriage of His Serene Highness Prince Albert II of Monaco to Ms. Charlene Wittstock on Saturday 2nd July 2011.

Equipped with Lexus Hybrid Drive, Prince Albert's LS 600h L offers all the performance and comfort expected from a Lexus flagship, and generates significantly lower CO₂, NO_x and particulate emissions than any comparable car.

'Lexus is very proud to present this exceptional full hybrid vehicle to H.S.H. the Sovereign Prince of Monaco', said Andy Pfeiffenberger, Vice President of Lexus Europe. 'Our commitment to innovation and sustainable mobility at Lexus matches well with His Serene Highness' keen interest in promoting sustainable development and environmental protection.'

The state-of-the-art conversion was undertaken by renowned Belgian coachbuilders Carat Duchatelet in close collaboration with Lexus engineers based in Brussels. It took over 2000 hours to complete. The fundamental

objective of the project was to ensure that the finished car maintained the levels of quality and technological sophistication inherent in every Lexus, whilst preserving all the performance, safety and dynamic attributes of the original LS 600h L.

‘We have 40 years experience in making armoured and extended vehicles for Heads of State, Royal Families and VVIPs around the world’, explained Benoit Ceulemans, Executive Director Corporate Development, Carat Duchatelet. ‘However, this will be a milestone project for us. It is the first time we are publicly associated to such a prestigious project and memorable event.’

The conversion process began with extensive computer-aided design calculations, simulations and 3-D modelling. The reinforcement of the bodyshell required extensive applications of the very latest in honeycomb structures, Kevlar and carbon fibre technology, in order to maintain the vehicle’s chassis stiffness and torsional rigidity following the removal of the roof and pillars.

Parts fabricated from composites require very high temperatures for curing. These components were literally ‘cooked’ onto the bare chassis in a specially prepared oven. As a result, much of the vehicle first had to be completely dismantled, involving the stripping out of some 20,000 mechanical parts, electronic components and interior features and upholstery. Re-assembly occurred under the close supervision of the Lexus engineering team, to ensure consistency with the original vehicle specifications and performance.

Painting and polishing was a key phase before re-assembly. The Royal Wedding LS 600h L is finished in a particularly elegant Midnight Blue livery, which was applied manually using several coats of a bespoke, environmentally-friendly water-based paint.

The transparent roof was a challenge both in its design, as a large single piece with no reinforcements and no pillars, and in its manufacturing, for which Lexus sought the cooperation of a supplier specialising in similar elements for the aerospace industry. The demountable roof has been built in France by one of the world’s leading transparent component-production companies. This highly specialised company mainly supplies complex components of an exceptionally high specification such as helicopter windshields and jet fighter canopies.

The roof is a single, lightweight polycarbonate shell, just 8 mm thick and weighing only 26 kg. Fixed to the body of the Lexus through two intermediary parts, it will allow perfect visibility from both inside and outside the vehicle.

Before production of the transparent roof itself, a template in honeycomb structure and carbon fibre was used to validate shape, structural integrity and a perfect fit to the body of the vehicle within tolerances of less than 1 mm. With the design complete, the extreme precision of production was carried out by robotic tools, which machined the final canopy in a completely automated process.

The final conversion stage of this unique LS 600h L, re-assembly and finishing, involved a team of 10 people in conjunction with Lexus engineers, working full time for over two weeks to ensure that every aspect of the vehicle meets the highest levels of quality and sophistication.

On the day of the wedding, the Landaulet LS 600h L will be used by the royal couple to tour the Principality after the ceremony. The tour will bring them from the Palace on the Rocher down to the harbour, and then along Boulevard Albert I up to the Sainte-Devote Church where, as is the tradition, the princess will leave her bridal bouquet to the waiting Monegasques. For most of this tour, the vehicle will operate in full zero-emission mode, driving under electric-motor power alone, hereby reaffirming Lexus Hybrid Drive’s environmental credentials.

With the end of the celebrations, the unique Lexus Landaulet will be displayed first at the Media Centre and subsequently at the Oceanographic Museum, where visitors will be able to view a remarkable reminder of an exceptional occasion.

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**A Landaulet is a car body style with a convertible top for the back seat, with the front seat either roofed or open.*