

electric cat

FOUR-WHEEL-DRIVE ELECTRIC SUPERCAR CONCEPT
0-TO-60 IN 3.4 SECONDS • 1180 LB-FT OF TORQUE
68 MILES ELECTRIC-ONLY • 205 MPH TOP SPEED
560 MILE RANGE WITH TWO MICRO-GAS TURBINES

The stunning Jaguar C-X75 range-extended electric supercar concept is further evidence that alternative powertrains are not to be feared and in many cases deserve high anticipation. The C-X75 was revealed at the Paris Motor Show, to celebrate 75 years of the marque and provide a glimpse into Jaguar's future and its commitment to beautiful, fast cars powered by sustainable means.

HERITAGE : The flowing lines and elegant forms of the Jetstream Silver C-X75 are inspired by the 1950s Jaguar C-Type and D-Type racers and 1966 XJ13 Le Mans prototype—described by Design Director Ian Callum as “arguably the most beautiful Jaguar ever made.”

Shorter and lower than current supercars, the car has a simple central fuselage and prominent wheel arches. In the absence of a conventional engine, designers and engineers had freedom in placement of components.

PROPULSION : The 205-mph four-wheel drive supercar is capable of running in purely electric (zero tailpipe emissions) mode for 68 miles on a six-hour domestic plug-in charge. Innovative, lightweight micro gas-turbines can

also very quickly and efficiently recharge its lithium-ion batteries, for a theoretical range of 560 miles. Developed with Bladon Jets, the miniaturized turbine blade—the first viable axial-flow micro-turbine—increases compression and efficiency to the point at which these can be a realistic power source. Each weighs just 77 lbs and produces 94 bhp (70kW) at a constant 80,000 rpm.

POWER : Energy is transmitted to the road by four independent electric motors, giving advantages in weight, distribution, packaging and efficiency. Each weighs just 110 lbs but produces 195bhp (145kW) and astonishing combined total torque of 1,180 lb-ft. The C-X75 is therefore four-wheel-drive without the weight of a purely mechanical set-up and with the ability to vector torque to each wheel across the full speed range, for improved stability, control and infinitely adjustable traction.

DRIVER-FOCUSED CABIN : The steering wheel, controls, main binnacle and pedal box all adjust towards the driver. The seats are attached to the bulkhead as in a single-seater racing car, and air to feed the turbines passes smoothly around them via channels in the body structure. A new driver interface uses high-resolution TFT touch-screens. Needles float on the periphery of twin cowls and sweep round the outer edge to display the status and rpm of the two turbines. The design team combined instrumentation ideas from the new XJ with

those from fighter aircraft to create virtual 3D “gimbals” the gauges wrap and rotate around for status updates.

ALUMINUM : Jaguar’s expertise in aluminum goes back more than 50 years through the first XK120s, lightweight E-Types, the XK and all-new 2010 XJ. In the XJ, Jaguar fully realized aluminum’s benefits to performance, agility, economy and sustainability in a luxury car. The C-X75 follows the same construction with an extruded and bonded aerospace-inspired aluminum chassis and body panels. Not only does this save weight, but aluminum is one of the most easily recyclable metals available.

AERODYNAMICS : Late Jaguar designer Malcolm Sayer elevated aerodynamics into an art form in cars such as the XJ13, the prototype from which the C-X75 draws inspiration. Jaguar has increased the design’s aerodynamic efficiency dramatically by opening the front grille and brake cooling vents only when necessary. At the rear corners, vertical control surfaces engage at higher speeds to direct airflow aft of the rear wheels for increased stability and efficiency. The carbon-fiber rear diffuser includes an active aerofoil, lowered automatically as speed increases. Vanes in the exhaust ports then alter the directional flow of the gases to further increase the effectiveness of the Venturi tunnel. The car’s elegantly simple fuselage section remains stable at very high speeds. And that, we’d like to try. ■

