



Up Close and Personal – Auto Futures Meets Lucid Motors' Team of Visionaries

By Lynn Walford - September 10, 2020



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On the 9th of September, otherwise known as *International Electric Vehicle Day*, and the 170th anniversary of the founding of the State of California, Lucid Motors revealed the production models of its Lucid Air sedans. I was privileged to see a sneak preview of the vehicles and interview many of the people instrumental in the design, engineering, sales and service processes at the Beverly Hills Studio of Lucid Motors.

The company previously announced over a 500-mile range, super-fast DC charging with 300 miles in 20 minutes, a drag coefficient of 0.21, the Wunderbox with bi-directional vehicle-to-home capabilities and blazing fast race car speeds. The Lucid Air Dream Edition is the first production car with 1080 horsepower that can complete a quarter-mile in 9.9 seconds.

The company started as Atieva making batteries and later expanded to Lucid Motors with plans to produce electric vehicles.

What will the Lucid Air Studio, Sales and Service be Like?

The Lucid Air will be sold online and through studios which look more like art galleries than car dealerships.

“It’s important to the customer experience to build a deep connection with our customers to understand how the vehicle fits in their lives and to help to build a solution to what is important to them. When you think of our brand, it is rooted in the ideals of energy space and time utilizing the heart and the mind to build a passion-driven product, inspired by the state of California and its locals,” says Matthew Grieci, Studio Manager, Lucid Motors, Beverly Hills, “We want all of that to reflect not only in our products and in our behaviour, but in the environment in which we showcase it.”

Grieci showed me the different interior samples that are named according to areas in the golden state of California and recited what seemed like poetry about each of the different colour schemes based on different times of day, speaking of places in Californian that inspired some of the designs.

“It is not the type of experience where there is any push or any pressure. We’re here to understand their needs. This will not be like a traditional dealership that keeps cars out in the back. The sales experience for us is more about education about the products and the new brand,” says Grieci.

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To help imagine the experience, customers can test different designs through a virtual reality experience. The VR goggles will have removable disposable liners and be disinfected.

"It's crucially important to have our brand technology on display. This is where we take pride in the fact that there are hundreds and hundreds of people who spent years and years of early mornings and late nights. We get to be the ones who speak to it," Greici says with a sense of immense pride.

The service bays look like they can hold a few cars with some chargers and a few lifts. Lucid Motors will offer service at the studio or mobile service to customers' homes or places of business. Lucid will also have the ability to deliver, fix and service tyres. The Lucid Motors service vans are outfitted with everything needed to service the vehicles.



What Are the Unique Design Features of the Lucid Air?

Derek Jenkins, VP of Design, Lucid Motors, who formerly designed vehicles at Mazda and Audi, gave me a tour of the design features of the Lucid Air Premiere Dream Edition.

"The Lucid Air is the first electric sedan and designed purposely optimized for space storage performance range; it's a whole new standard. I think in many ways this will be the template for electric sedans going forward," says Jenkins.

Jenkins detailed the design of the Lucid Air. The efficient smart micro-lensed lighting follows the curve of the road. The radar, high-resolution LiDAR front-facing cameras are hidden in the nose of the vehicle. The 32 sensors can't be easily seen until you are very close. The double-decker frunk and trunk are the largest in the industry.

"All the openings in the front of the car have a function. When we minimize the openings, we keep it as slim as possible. The philosophy that is going forward is that in the future cars with big openings in the front are low-tech," says Jenkins while walking around the Eureka Gold Dream Edition model.

Jenkins displayed the Lucid Air mobile app that opens the car door and offers the ability to send destinations to the vehicle's navigation. The system is Amazon Alexa enabled and drivers can ask Alexa about charging status, use it to open the trunk or unlock certain things through facial recognition via a driver monitoring camera inside the vehicle.

The curved 34-inch cockpit 5K monitor hugs the driver with easy access to features while allowing drivers to see the view. It's no ordinary flat computer-style monitor like those found in Tesla models. [Privacy & Cookies Policy](#)

developed curved low-temperature polycrystalline silicon display (LTPS) engineered for optimal performance and safety. There is an 800 watt sound system with 21 speakers.

A smartphone holder in the centre console enables wireless charging. The centre tablet retracts to reveal storage space for valise or a nice size purse. The rear luxurious cream seats are made of sustainable Nappa leather, which can be heated and air-cooled. The back doors open 90 degrees which make them accessible to people with disabilities or for parents who need to put children in child seats. Passenger can use the Wi-Fi hub. There are airbags all around for safety and expected 5-Star safety rating.



What Design Feature is Jenkins Most Proud of?

"My favourite part is the metal roof and the AeroDream wheels," says Jenkins. The shiny silvery metal shines glossed by a clear coat for protection. The roof is aluminium with a satin titanium finish. The 21-inch wheels are gloss jet black with a special diamond-turned pattern on them.

By making the engines and batteries compact, Jenkins had much more room for designing.

"It allowed us to make the car lower, more compact and sporty and still keep a ton of space in the interior," says Jenkins. "Normally this is the biggest problem for an engineer; consumers want more space inside, so the car gets big, bulky and tall like most luxury sedans. In this case, the batteries and the engine motors are so small we could lower the cabin, shrink the car on the outside but still keep the large interior. We were able to make a midsize sedan a full-size luxury sedan on the inside. That's what's groundbreaking about the Lucid Air and why it's the first of its kind."

What are the Main Technology Features of the Lucid Air?

After talking to Jenkins, I was escorted past the display of batteries to meet Peter Rawlinson, CEO and CTO, Lucid Motors.

"Everyone talks about the batteries. It is so much more than that," he tells me. "It's the whole system. It's like the saying the human body is about the heart. The key elements to the whole Lucid Air system are the powertrain, battery, motor, transmission, inverter and software, which are all created in house."

Like a little kid showing his friends his latest toys or science project, Rawlinson showed me the 900 Volt Wunderbox. He says that German Eric Bach, the head of engineering, was the reason behind the name.

Then he shows me the race car batteries. "We supply the battery packs to all 24 cars on the world e-racing circuit," adds Rawlinson, who notes that the battery packs are designed like Lego bricks, that are compact and have a battery management system.

At a demonstration model, showing the frame and motors of the Lucid Air, he points out that it is the first car with true dual-redundancy steering, thanks to a special axle design.



"The axle is multi-link independent suspension designed in house. The sway bar reduces the rate at which the car sways," says Rawlinson, also calling the dual-motor "the Beast."

"Separate motors on each wheel that total a full 1,080 horsepower produce better handling and control. You don't lose traction when you go around the corners because of torque vectoring. Effectively, instead of having a mechanical differential, we have an electronic differential with one motor powering each wheel and we have independent torque control of each wheel based on parameters such as lateral acceleration."

He is thrilled about the efficiency. "We're getting over 500 miles without stuffing a big battery pack in. It's only 103 kilowatts and 17% more efficient than the leading competitor, which is the equivalent of 20% cost savings. We can say goodbye to range anxiety," says Rawlinson.

Just as I thought he couldn't get any more excited about the Lucid Air, I asked him what he liked best about it.

"My favourite part about the Lucid Air is that it is truly state-of-the-art in so many ways. It's a fusion between art, science, software and hardware. Look at the display unit in the cabin; isn't that beautiful? It's a beautiful piece of art and that's what I love. I want engineering to look like art. I nearly did art as a career, not engineering. Now I have this beautiful fusion between art and engineering."

In some ways, Lucid Motors is Rawlinson's dream come true.

"I was always really good at Art in school and my art teacher was very upset that I wanted to go to engineering school," says Rawlinson, who grew up in South Wales with an English father.

"I did dream of California when I was a kid. Then I came out here when I was a chief engineer at Lotus for a project that led to engineering the Tesla Model S."

He learned his trade working with Elon Musk.

"I learned a lot about electric cars working for Tesla but I had been doing engineering for some time before that. I don't think it changed anything technically but what I think I learned was how Elon planned for success. He was always planning for success and I realised that this guy is pretty successful. It's a lesson in life, just plan for total success and you can do it."

"I don't think I could have done this without the experience from the Model S because my experience led me to believe that I could engineer something extraordinary and take it to the next level. I was instrumental in Tesla's journey and that gave me the confidence to take Ateiva and make it into a world force in automotive," says Rawlinson.



From Public to Private

Rawlinson explained what keeps him inspired. He also gives a glimpse of the future for Lucid Motors.

"I cannot tell you in the last seven years the number of people who have told me I was crazy. The more they say it, the better the engineering gets. Every time I don't think we could have gotten to 517 miles on a charge with a standard EPA cycle. We've done 235 miles per hour," says Rawlinson.

Negative comments seem to charge Rawlinson up with more energy.

"Some people say this isn't going to change the world. The Lucid Air is a rich man's toy. When you see the technology we've developed here, the real value of this technology is not just for Lucid Air but it is for the cars that will come to use this technology in the future. When we get it into a car in the \$25,000- 30,000 range that the average person in the street could afford, we will change the world for better," envisions Rawlinson.

"With all these environmental issues we can't go on burning gasoline the way we do. People don't get it," says Rawlinson, "This car is going to lead to a cascading effect in automotive. I'd love to license the technology. I want to get the car into production first. I would love it if the next Toyota Corolla or the next Honda Civic would be based upon this technology."

When I asked Rawlinson about the recent swath of deals and electric vehicle companies that are going public and what are the plans for Lucid Motors, he replies, "From the start we have always planned to go public."

More Luxury, Tech Details and Pricing

After my visit, I learned more details. Other features include autonomous parking, advanced safety features and over-the-air updates. The heating and cooling are designed to cool the batteries, electronics and the cabin to enable driving in extreme climates.

I asked about the computer and operating systems. "Our vehicle operating system is an embedded real-time multicore operating system that implements the latest AUTOSAR standard and is designed and developed for safety-related projects up to automotive safety integrity level (ASIL) D/SIL 3," confirms Eric Bach, Vice President of Engineering in an email.

The company announced North America pricing for four Lucid Air model ranges after \$7,500 tax credits the Air (due 2022) will be \$72,500, the Air Touring model, (late 2021), \$87,500, Air Grand Touring, (mid-2021) \$131,500, limited-volume Air Dream Edition (available spring 2021) priced at \$161,500 after US federal tax credit. Included in the Dream Edition are three-years free fast charging on the Electrify American network.

During the premier video and Q&A, it was revealed that Lucid Motors will adapt the battery technology for home and business electric batteries for static energy storage. The factory in Casa Grande Arizona is expandable in a 10-year time frame. There will be 21 studios across America. The Lucid Air online configurator is like a video game. The specs are uploaded and are available to experience at a Lucid Motors studio via virtual reality.

At the end of the video reveal of the first Lucid air there was a quick shot of the next project for Lucid Motors: Project Gravity, a shiny SUV.

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NEXT STORY

GM and Uber to Help Drivers Switch to Electric Vehicles

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General Motors is teaming up with Uber to help accelerate the rideshare industry's transition to an all-electric, zero-emissions future by offering drivers on Uber's platform special pricing on the purchase of a new electric vehicle and charging accessories.

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