

*The Lilium Jet is the first fully-electric vertical takeoff and landing (eVTOL) aircraft. At the base of its development lies the belief in a future where people should be able to travel anywhere at any given time. Given its VTOL nature, the operation of the aircraft will easily be integrated into the urban area, where traffic is most congested. The fully electric propulsion system ensures not just zero CO2 emissions, but low noise levels as well. In designing the jet, the core idea was simplicity and functionality. On an engineering level, this translates into efficiency, the jet can cover up to 300 km with a maximum ground speed of 300km/h; and safety, an innovative ultra-redundancy principle governs the architecture of the aircraft. To put it into perspective, the Lilium Jet will shorten the travel time from Manhattan to JFK airport from more than one hour to 10 minutes.*

## **SAFETY**

Our passengers should feel safe at all times. This is the first and foremost concern at Lilium.

We have built the Lilium Jet based on the principle of ultra-redundancy. This means that the safety and stability of the aircraft will not be affected by the failure of one or more of its components. For example, the failure of multiple engines will not jeopardize a safe vertical landing.

Another aspect of safety is the fly-by-wire system. The flight envelope protection enables computer corrections to an otherwise catastrophic input from the pilot.

Several thousand individually packed lithium-ion cells ensure a fail-safe operating mode for the batteries.

Additionally, the Lilium Jet is equipped with a parachute that will deploy in case of an emergency and safely bring everyone on board to the ground.

## **ECOLOGY**

At Lilium, we think sustainability plays an important role in the economy of the future. In a world that still depends on petroleum-based fuel, we are committed to green energy.

We drive down Lilium's impact on the environment by using electric propulsion. An airplane engine works by compressing the incoming air with the help of a compressor and pushing it through the back to generate thrust. Conventional kerosene-powered engines use a gas turbine to turn the compressor. Instead, the Lilium Jet uses a high-performance electric motor for this task.

Electric propulsion has a few perks for the environment. First, zero CO2 emissions; Second, Very low noise levels, especially in cruise flight (this needs expanding with new noise data that covers cruise, takeoff and landing and transitional regime);

In a very congested urban landscape, making room for new transportation infrastructure is quite the challenge. However, given its vertical takeoff and landing nature, the Lilium Jet can use any already available flat surfaces for performing these maneuvers (top of a skyscraper,

existing helipads, larger terraces or fields, etc), keeping the impact on the infrastructure and, ultimately, the environment, to a minimum.

## **SIMPLICITY & EFFICIENCY**

We are committed to change the way people experience distance. We designed the Lilium Jet to be an efficient and elegantly simple aircraft, that will be easy to fly and inexpensive to maintain.

The Lilium Jet has the same energy consumption per seat and kilometer as an electric car, but one can reach the destination five times quicker. The aircraft can cover up to 300 km at a cruise speed of 300 km/h. The high efficiency is due to the lightweight carbon fiber structure, but also to the overall simple configuration: A single moving high-lift surface, the flap, and a single rotating part of the engine. No gearboxes, no foldable or variable pitch propellers, no water-cooling, and no aerodynamic steering flaps. Just tiltable electric engines.

## **SEAMLESSNESS**

Air travel usually equates with hassle: noise, vibrations, tight spaces. There doesn't seem to be enough room for enjoyment. We want to change that. With Lilium Jet we offer people more than air transportation, we give them an enjoyable air experience.

An aerodynamic slick, yet ergonomic design makes boarding or exiting more practical for the five passengers of the aircraft. The electric engines make a serene journey possible. The panoramic windows offer breathtaking views. No more loud noise, no uncomfortable vibrations, no obstructed views that usually come with conventional airplanes or helicopters. Just flying.