

Liebherr-Aerospace Toulouse SAS

**Support Solutions for Development
and Qualification Tests**



LIEBHERR

Advanced Original Equipment Manufacturer (OEM) Testing Capabilities at Liebherr-Aerospace in Toulouse

Direct access to OEM expertise and experience

- Dedicated Center of Excellence hosting comprehensive test facilities to address the highest acoustics, altitude and vibration international standards
- Skilled and experienced staff guaranteeing highest levels of expertise to support R&T, development or qualification phases
- Tests according to state-of-the-art civil and military aviation, automotive, railway vehicles industry and industrial regulation standards

Development and qualification test rigs on 9 000 m²

Long experience in the performance of combined tests reproducing engine or fuselage conditions (mechanical, pneumatic, climatic, electrical)

- Comprehensive tests capabilities and state-of-the-art measurement accuracy for equipment or systems
- Vibration shakers
- Anechoic chamber
- Altitude chambers

Innovative approach to anticipate the system behavior in operation

- Combination of air, temperature, pressure, hygrometry and electrical supply for the most realistic conditions
- Latest measurement technologies
- Wide range of tailored tests to simulate the system operational performance and reliability

Tailored approach to stay one step ahead

- Optimal test conditions guaranteeing test confidentiality
- Standard to specific package support and services along with tailored recommendations
- Expertise to reduce development costs and time to market



Acoustics

The anechoic chamber provides 450 m³ with full and hemi-anechoic configuration combining, if required, air supply/extraction and cooling capability to address latest regulations.

Adapt the anechoic chamber to your needs

- Dimensions: 7.5 x 7.5 x 8.0 m
- Cut off frequency: 90 Hz
- Background noise: <20 dB(A); <50 dB(A) (with air)
- Air extraction: 9 kg/s at 160 °C
- Air supply: 7 bar
- Air supply temperature: -55 °C to +300 °C
- Air supply pressure: 6 and 24 bar
- Flow: up to 3 kg/s
- Electrical power supply: 100 kW

Altitude

Two altitude chambers are equipped to run the most rigorous testing procedures matching the highest required standards in the most realistic conditions.

- Volume: from 2 m³ to 190 m³
- Pressure: up to 60 000 ft.
- Vacuum: up to 8.5 kg/s on ground
- Ambient temperature range: -55 °C to +250 °C
- Air supply temperature: -55 °C to +250 °C
- Air supply pressure: 6 and 24 bar
- Flow: up to 2 kg/s
- Electrical power supply: 100 kW

Vibration

Unique vibration benches perform the most representative development and qualification tests.

- Force: 90 kN to 180 kN
- Maximum acceleration: 140G peak (market standard: 100G peak) and 135G RMS
- Frequency range: 5 to 2 500 Hz
- Slip table dimensions: 600 mm to 1 500 mm
- Air supply temperature: -55 °C to +600 °C
- Air supply pressure: 6 and 24 bar
- Flow: up to 2 kg/s
- Electrical power supply: 100 kW

Customized support and solutions

- Delivery of adjusted offers sized to testing needs
- Modulated support from testing capabilities to complete management of the test campaign by Liebherr test engineering teams



