AEROSPACE

Ultra-Thin Microphones for Aeroacoustic Testing

AIRBUS

✓ **CUSTOMER**
Airbus

✓ **PRODUCT**
GRAS 48LX1
Ultra-Thin Precision (UTP) microphone.



About Airbus

Airbus is one of the world's leading aerospace manufacturers, designing and producing advanced commercial aircraft, helicopters, and defense systems.

With a strong focus on innovation, efficiency, and noise reduction, Airbus continuously pushes the boundaries of aeroacoustic research to improve aircraft performance and passenger comfort.

Accurate measurement of airflow noise and turbulence is critical in this process.

The Challenge

Measuring sound directly on aircraft surfaces is highly complex.

Traditional microphones disturb airflow, leading to inaccurate results.
Airbus needed a solution that could:

- Be mounted directly on the surface
- Have minimal impact on airflow
- Deliver highly accurate acoustic data

The requirement was clear:
A microphone no thicker than 1 mm.



GRAS
An Axiometrix Solutions Brand

The Solution

GRAS developed the Ultra-Thin Precision (UTP) microphone.

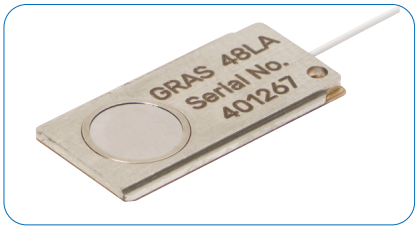
- Ultra-low profile (<1 mm)
- Surface-mounted design
- Minimal aerodynamic disturbance
- High precision and repeatability

This enabled accurate measurements directly in the boundary layer – without influencing the test conditions.

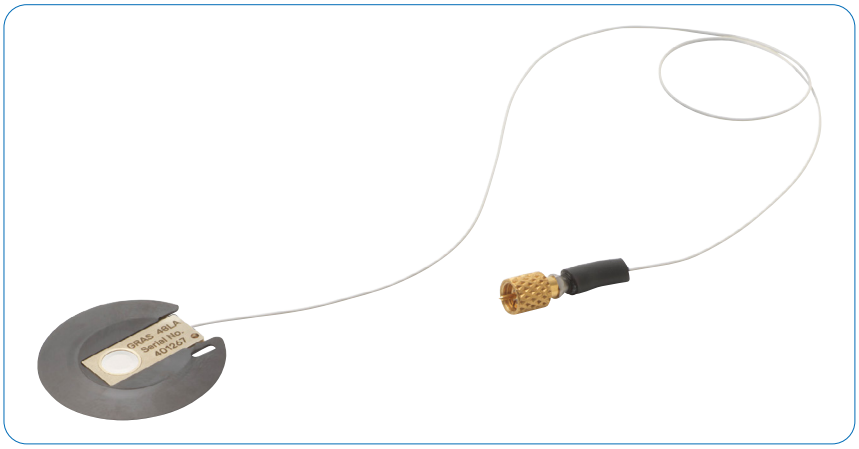
GRAS 48LA UTP Microphone, High Pressure

Freq range: 20 Hz to 20 kHz (±1 dB)
16 Hz to 31.5 kHz (±3 dB)
Dyn range: 64 dB(A) to 184 dB
Sensitivity: 0.12 mV/Pa (±2 dB)
Use: For aeroacoustic measurements

GRAS 48LA UTP >







The Result

The solution allows Airbus to:

- Capture accurate aeroacoustic data
- Validate simulations with real measurements
- Optimize aircraft design and noise performance
- Conduct reliable wind tunnel and on-surface testing



About GRAS

GRAS Sound & Vibration is a global leader in acoustic measurement solutions.

With decades of expertise in precision microphones and sensor technology, GRAS supports industries such as aerospace, automotive, defense, and consumer electronics.

GRAS solutions are known for:

- High accuracy and repeatability
- Robust performance in demanding environments
- Long-term stability and traceability
- Close collaboration with OEMs and research teams

From standard sensors to fully customized OEM solutions, GRAS helps engineers measure what matters.

Why It Matters

Aeroacoustics testing is essential for designing quieter, more efficient aircraft.

With the UTP microphone, GRAS enables measurements that were previously difficult or impossible — supporting better engineering decisions and improved aircraft performance.

Conclusion

Through close collaboration with Airbus, GRAS developed an innovative solution that meets extreme aerodynamic and acoustic requirements.

The result is a new standard in aeroacoustic measurement — combining precision, minimal intrusion, and real-world usability.



For more information,
please contact marketing@grasacoustics.com

About GRAS Sound & Vibration

GRAS is a worldwide leader in the sound and vibration industry. We develop and manufacture state-of-the-art measurement microphones to industries where acoustic measuring accuracy and repeatability is of the utmost importance in R&D, QA and production. This includes applications and solutions for customers within the fields of aerospace, automotive, audiology, and consumer electronics. GRAS microphones are designed to live up to the high quality, durability and accuracy that our customers have come to expect and trust.
GRAS Sound & Vibration is represented through subsidiaries and distributors in more than 40 countries and is part of Axiometrix Solutions, a leading test solutions provider comprised of globally recognized measurement brands.