# Microphone Calibration Services

Accredited and Traceable Calibration We safeguard your data



G.R.A.S. SOUND & VIBRATION

## Microphone Calibration

At G.R.A.S. we are focused not only on the reliability of our products, but also on the precision and repeatability of your measurements. G.R.A.S. microphones are therefore calibrated and verified according to international standards, and the calibration data are included with the products.

Calibration at regular intervals is a way to safeguard the quality of your measurements

and to eliminate the costs caused by unreliable equipment. Also, it is a way to ensure that historical measurement data are valid and comparable.

Depending on the use, measurement environment and internal quality control programs, we recommend that microphones are calibrated at a dedicated calibration laboratory at least once a year.

We endorse our Accredited Calibration Laboratory in Denmark or the G.R.A.S. Microphone Calibration Centers located in Asia, Europe and North America.

We offer calibration with fast turn-around time. For larger series of equipment, you can make a calibration agreement to minimize the turn-around time.

## **Accredited Calibration or Traceable Calibration?**

#### **Accredited Calibration**

The G.R.A.S. Accredited Calibration Laboratory is accredited by DANAK, the Danish Accreditation Fund. This accreditation is a quality label that proves that our calibration laboratory complies with the ISO 17025 standard for laboratories.

If your quality assurance programs demand it, or if you for other reasons need the enhanced confidence that comes with an internationally recognized quality label, a G.R.A.S. Accredited Calibration is the right choice.





#### Traceable Calibration

A G.R.A.S. Traceable Calibration is identical to the rigorous calibration that all G.R.A.S. microphones are subject to before leaving the factory. This calibration is traceable to the National Physical Laboratory (NPL) in England.

When you are confident that your needs are covered by a traceable calibration, a G.R.A.S. Traceable Calibration is the right choice.



### **Certified Confidence**

#### **Accredited Calibration**

We offer this service through our Accredited Calibration Laboratory, which has been accredited by DANAK, the internationally recognized Danish Accreditation Fund. The accreditation is your guarantee that our laboratory, competence, methods and record keeping comply with the requirements of ISO 17025:2005, General requirements for the competence of testing and calibration laboratories.

An Accredited Calibration Certificate is proof that a calibration will stand up to close scrutiny, be it stringent quality inspections or legal proceedings. On the certificate is the DANAK logo, and it includes comprehensive documentation of the measurement results and the associated uncertainties, along with the environmental conditions for microphones and instruments.

#### Traceable Calibration

All G.R.A.S. microphones are calibrated as an integral part of our quality assurance. This calibration is traceable to the National Physical Laboratory (NPL) in England. It is performed by specially trained G.R.A.S. personnel under controlled conditions and according to established procedures and standards.

We also offer Traceable Calibration as an after-sales service – this is the same rigorous calibration that is the final stage of our quality assurance.

New as well as recalibrated microphones are delivered with up-to-date calibration information on individual calibration charts or extended calibration certificates, stating the sensitivity, the frequency response, and the environmental calibration conditions.

#### Ordering

Traceable Calibration

All microphones manufactured by G.R.A.S. are by default given a Traceable Calibration, which we also offer as an after-sales service.

Accredited Calibration

Microphones and microphone sets, including flush-mount and surface-mount microphone sets, are eligible for Accredited Calibration, either as part of the initial delivery or as an after-sales service. For all other products, contact your local G.R.A.S. partner.

For ordering, contact your local G.R.A.S. partner.

Accredited Calibration – what you get				
DANAK accreditation according to ISO 17025				
Traceable to NPL				
Accredited Calibration Certificate				
Comprehensive documentation				
Traceable Calibration – what you get				
Traceable to NPL				
Calibration Chart				
Summary documentation				

G.R.A.S. Microphone Calibration Centers				
Asia	China	G.R.A.S. China	www.gras.com.cn	
	Japan	Foresight Techo co. Ltd.	www.foresight-t.co.jp	
	South Korea	FAMTECH Co.	www.famtech.co.kr	
	Singapore	TME Systems Pte Ltd	www.tmesystems.net	
Europe	Denmark	G.R.A.S. Denmark	www.gras.dk	
	Germany	G.R.A.STippkemper	www.gras-tippkemper.de	
	United Kingdom	Campbell Associates	www.campbell-associates.co.uk	
North America	USA	G.R.A.S. NA	www.gras.us	



## We Make Microphones

Since the company was established in 1994, we have been 100% dedicated to develop and manufacture high-quality measurement microphones and related acoustic equipment.

#### Tradition

We are located in Denmark and founded by the Danish acoustics pioneer, Gunnar Rasmussen who for more than 60 years has contributed to the world of sound and vibration with his unique ideas and designs. In 1956 Mr. Rasmussen designed the first reproducible 1" condenser measurement microphones. And the commercialization of these measurement microphones enabled quality measurements and instrumentation which could be acoustically calibrated and accredited.

Mr. Rasmussen's ingenuity and understanding of not yet spoken customer needs soon lead to the world's most popular and probably most copied acoustic sensor: The 1/2" measurement microphone. Then the 1/4" and 1/8" microphones followed with outstanding dynamic and high-frequency capability that brought higher definition

and transparency into impulse noise diagnostics. Many variants have been made available over the years; all based on Gunnar Rasmussen's original 1" pressure microphone design.

#### Innovation

At G.R.A.S., we and our customers benefit daily from Mr. Rasmussen's exceptional understanding of acoustics, physics, electronics and measurement needs. Not only in our R&D department but in the entire house we are proud to develop, produce and offer the broadest range of highquality measurement microphones and accessories in the industry. And as a family company, now owned and managed by the two sons, Per Rasmussen and Peter Wulf-Andersen, we safeguard our heritage and knowledge to help create new opportunities with our customers. We work with everybody who has an interest in sound or noise within the fields of aerospace, automotive, audiology, consumer electronics, noise monitoring, building acoustics and telecommunications, metrology, education, consultancy, legislation and system integration.

#### Quality

All our microphones are solely produced in stainless steel and in a quality that allows for a 5 year warranty.

Should you by mistake damage the diaphragm on a G.R.A.S. microphone, our special technique enables repair at a very reasonable price. A fact often valued not only by the users but also by their purchase departments who are guaranteed a long term investment with equipment from G.R.A.S.

#### Microphone HALT testing

When developing measurement microphones, we use a series of Highly Accelerated Life Tests (HALT) to ensure that our microphones live up to the high quality and precision our customers have come to expect and trust.

Thus we simulate the handling and use a microphone is exposed to in real life to make sure that you can trust your measurement results - every time.