

Intelligent Testing



High Altitude Chamber

Combined emission / application tests
and environmental simulations



CHAMBER DIMENSIONS

Length: 8.50 m • Width: 4.20 m • Height: 4.30 m



Combined emission / application tests and environmental simulations

IABG maintains several drive-in climate and vacuum chambers for vehicle and component tests. Also included is a special high altitude chamber for testing vehicles with running engines at simulated altitudes up to 3800 m with controlled temperature and humidity. This chamber allows for the systematic analysis of an engine's power performance, fuel consumption and emission characteristics under reproducible environmental conditions.

The high altitude chamber is equipped with a roller test bench and an air fan. It supports both industry-standard and customer-specific test cycles (e.g. the New European Driving Cycle (NEDC) or the US Federal Test Procedure (FTP75)).

During a driving cycle, two sampling lines are used to continuously measure the CO, CO₂, NO_x, THC and CH₄ emission values. Using this method, the integral concentrations of emissions can be determined for up to four phases during the driving cycle. The system also supports gravimetric particle measurements.

The high altitude chamber can also be used for analysing engine components and for adjusting the respective control units based on defined deployment and load conditions in order to analyse and optimise power-train characteristics. By controlling and monitoring environmental conditions measurement results can be reproduced and compared over various periods of time.

TECHNICAL DATA

- Temperature range: -30...+50°C
- Maximum cooling capacity: 180 kW
- Controlled relative humidity: up to 95 %
- Ambient pressure: approx. 950 hPa to 630 hPa
- CVS emission measurement: 2 sampling lines
(1. tailpipe : diluted emissions in bags and modal emissions /
2. engine out: undiluted emissions at separate sampling point)
- Roller dynamometer with $P_{\max} = 210 \text{ kW}$, tractive force = 6 kN,
 $v_{\max} = 200 \text{ km/h}$, vehicle weight
simulation of up to 8000 lbs
- Air fan:
Rear-wheel drive vehicle: max. 34.000 m³/h, max. 130 km/h
Front-wheel drive vehicle: max. 26.000 m³/h, max. 100 km/h





AUTOMOTIVE

About IABG

We are a closely networked business group and offer integrated, future-oriented solutions in the sectors Automotive • InfoCom • Mobility, Energy & Environment • Aeronautics • Space • Defence & Security. We understand the requirements of our customers and support them independently and competently. We implement effectively, efficiently and with target orientation. We operate reliably and sustainably. Our international market presence and our success are based on technological excellence and a fair relationship to our customers and business partners.



INFOCOM

About IABG Automotive

As a development partner of the automotive industry we provide quality control services and develop solutions in the areas of functional efficiency, quality, design, and materials.



MOBILITY, ENERGY & ENVIRONMENT

We offer a broad spectrum of products and services, ranging from numerical analysis to experimental testing to the realisation of turnkey, customised test systems that we operate for the customer. We support our customers with combined services in the development of components or complex mechatronic systems, optionally with hardware-in-the-loop (HIL) simulations.

- Simulation, calculation, optimisation of strength, crash, vibration, acoustics, flow
- CAD and component optimisation
- Vehicle dynamics simulation
- Experimental testing for
 - Vibration
 - Environmental simulation, EMC
 - Function, service life and materials
- Automation and testing systems for fatigue and function, mechatronics
- Operation of test facilities



AERONAUTICS

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