

Climate emissions test bench

-30 °C to +45 °C | 300 kW | eight climate boxes



- ✓ Validation of vehicles in various climate conditions
- ✓ Determining the emission behavior of vehicles according to the legislation of various countries
- ✓ Range determination and investigation of the charging behavior at various temperatures
- ✓ Faster development times and high reproducibility of the results due to automation technology

SCOPE OF SERVICES

On the climate emissions test bench, Bosch Engineering can perform emission testing according to the legal requirements of numerous countries. Temperatures between -30°C and $+45^{\circ}\text{C}$ can be set in the test cell.

Tests of the cold-starting and cold-operating behavior of vehicles, customization of onboard diagnostic (OBD) functions, and analyses of the behavior of components and emissions are therefore possible at these temperatures. The range of services is rounded off by methods for determining the consumption and range of hybrid and electric vehicles for statutory and customer-specific driving cycles. Driving robots and accelerator pedal actuators can also be used in this process.

Two untreated and one diluted modal exhaust gas measurement analysis systems are available for optimizing emissions behavior and OBD functions. Our constant volume sampler (CVS) system meets the various legal requirements. The amount of particulate in untreated or diluted exhaust gas can be determined. Eight climate test cells (-40°C to $+45^{\circ}\text{C}$) with 22 kW (AC/DC) charging stations (or wall boxes) are available for conditioning.

We ensure the highest measurement quality and reproducibility due to our quality management.

TECHNICAL FEATURES

Vehicle conditioning	<ul style="list-style-type: none"> ■ Eight climate test cells: -40°C to $+45^{\circ}\text{C}$, of which there are two test cells with exhaust gas extraction for testing engine start behavior ■ Tempering area (23°C) with five parking spaces ■ Forced rapid cooling for the vehicle and lubrication and cooling system
Headwind fan	<ul style="list-style-type: none"> ■ Flow rate up to $41,600\text{ m}^3/\text{h}$ ■ Wind speed up to 135 km/h (according to UN-R 154 and 40 CFR 1066)

POWER SUPPLY

Crown roller	AIP 48" AWD crown rollers
Power output	FWD/RWD: 260 kW, AWD: 300 kW
Maximum speed	260 km/h
Axle spacing	1.80 m to 4.20 m
Inertial mass	< 11,000 lbs
Axle load	max. 2,000 kg

EXHAUST GAS MEASURING EQUIPMENT

CVS dilution tunnel	Flow rate 2 to $30\text{ m}^3/\text{min}$
Measuring equipment bag	Bag and modal analysis
Quantum cascade laser	N_2O measurement (diluted)

UNTREATED EXHAUST GAS MEASURING EQUIPMENT

Two untreated exhaust gas analysis systems	CO_2 , CO, NO/NOX, CH_4 , O_2
Quantum cascade laser	NO_2 , N_2O , NO, NH_3 measurement
Determination of the exhaust gas volume flow	Pitot tube flow meter (PTFM) 0 to $10,000\text{ l/min}$

PARTICULATE MEASURING EQUIPMENT

Particulate mass and count	Gravimetric determination of the particulate mass, determination of the particulate count (10 and 23 nm)
Determination of soot mass	Micro soot sensor

ADDITIONAL MEASURING EQUIPMENT

Electrical measuring equipment	HIOKI PW3390 for electrical power balancing
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