

Portable emissions measurement system (PEMS)

-10°C to +40°C | 3000 m | refrigerated truck



- ✓ Examination of compliance with emission standards under real-life driving conditions
- ✓ Measurement data is collected and processed according to certification requirements, reducing development effort
- ✓ Verification of chassis dynamometer measurements by means of real-life road measurements
- ✓ In-house or, if requested, individually laid out real driving emissions (RDE) route profiles allow various driving and traffic situations to be examined
- ✓ Starting points can be freely selected by conditioning the vehicles in the in-house refrigerated truck

SCOPE OF SERVICES

The emission behavior of vehicles under real-life driving conditions in various operating situations is examined using the portable emission measurement system. By recording emission concentrations (CO, CO₂, THC/total hydrocarbons, CH₄, NO_x, NO₂, NH₃, particulate) and the exhaust-gas volume flow, compliance with the legal emission standards can be examined during the development phase. On request, the RDE route profiles are adapted individually and, if required, also performed, while complying with the legal requirements.

The various route profiles help make it possible to design the vehicle system to be robust regarding various driving situations and operating points. The route profiles driven with the mobile measurement technology can be used as a basis for transferring the real-life road measurements to the chassis dynamometer. This means that development stages can be reviewed, adapted, and assessed under constant and reproducible boundary conditions.

Bosch Engineering will provide you with support right from planning the series of measurements and measurement requirements through to data analysis. This scope of services, including vehicle preparation, can also be provided for complex attached structures and fittings for supercars.

TECHNICAL FEATURES

Exhaust-gas flow rate	Extended flow meter (EFM) 2" / 2.5" / 3"
Standard measurement	<ul style="list-style-type: none"> ■ Exhaust-gas temperature ■ Exhaust-gas pressure ■ Exhaust-gas volume flow ■ Atmospheric pressure ■ Atmospheric temperature ■ Humidity ■ GPS signal
Operating conditions	<ul style="list-style-type: none"> ■ Temperature -10 to +40 °C ■ Relative humidity < 95 % ■ Altitude 0 to 3,000 m above sea level

AVL M.O.V.E GAS PEMS

Emissions	Measurement principle
CO	Non-dispersive infrared sensor (NDIR)
CO ₂	Non-dispersive infrared sensor (NDIR)
NO, NO _x , NO ₂	Non-dispersive ultraviolet spectroscopy (NDUV)

AVL M.O.V.E FID MODULE

Emissions	Measurement principle
THC, CH ₄	Flame ionization detector (FID)
Non-methane organic gases (NMOG), non-methane hydrocarbons (NMHC)	Calculated

AVL M.O.V.E PN PEMS

Emission	Particle number (PN)
Measurement principle	(Electrical) particle counter (EPC)
Particulate size	10/23 nm

AVL M.O.V.E NH3 PEMS

Emission	<ul style="list-style-type: none"> ■ Gravimetric determination of the particulate mass ■ Determination of the particulate count (10 and 23 nm)
Measurement principle	Tunable diode laser spectrometry
Particulate size	10/23 nm