

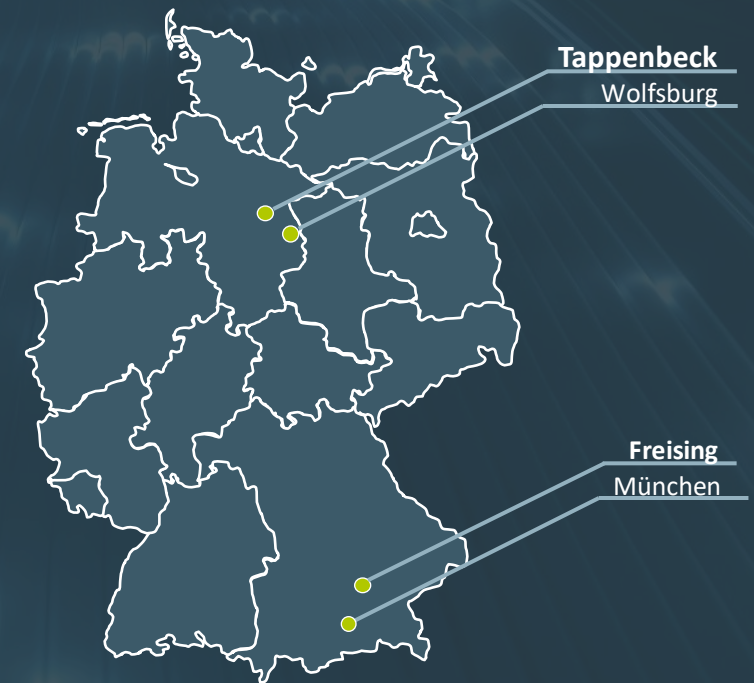
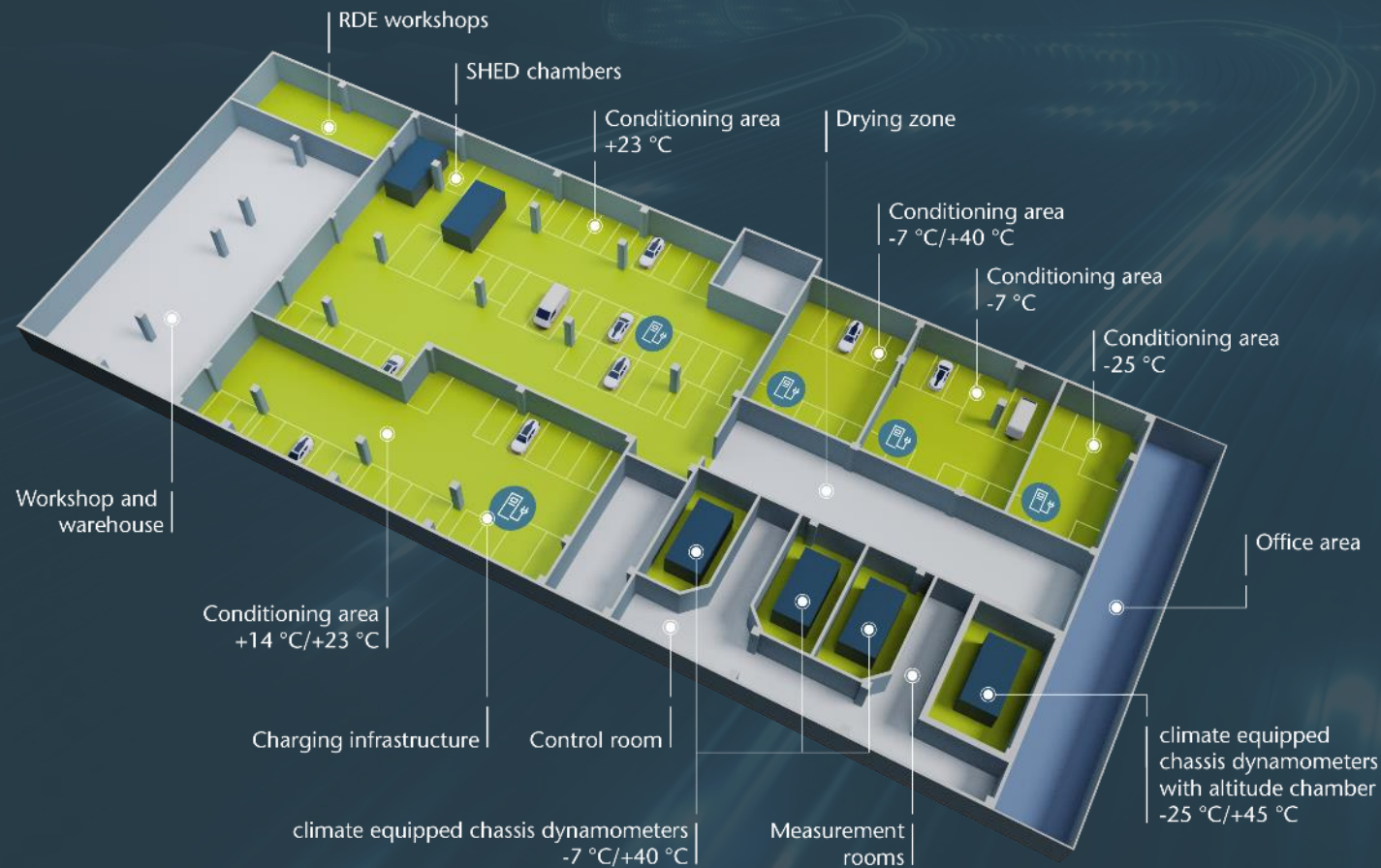
Bertrandt Powertrain Solution Center

Product datasheets BPSC

Christian Eberle | 15.02.2022

The entire world in one place

Whether battery-electric, hybrid or internal combustion engine drive - with the **Bertrandt Powertrain Solution Center** in Wolfsburg or Munich, we offer **validation, certification and real-driving emissions tests for all drive concepts** - in accordance with legal and/or customer-specific requirements.



Technical data

Bertrandt Powertrain Solution Center



2 all-wheel A/C roller test benches with altitude chamber



6 all-wheel A/C chassis dynamometers



2 chambers for Sealed Housing for Evaporative Determination measurements (SHED)



Special measurement technology










HV charging infrastructure

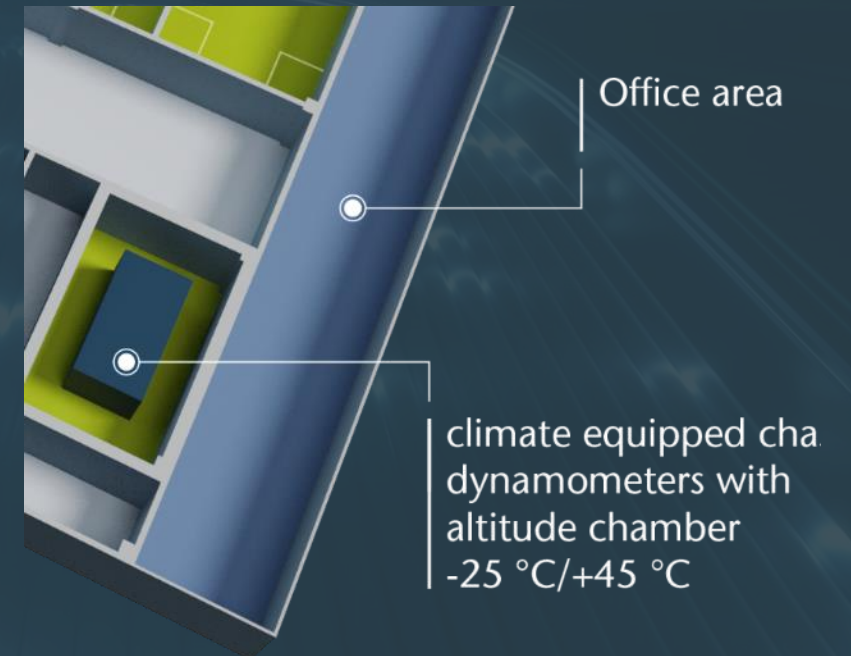


Real Driving Emissions (RDE) and general workshops

Technical data

All-wheel A/C roller test stands with altitude chamber

	Roller performance:	550 kW
	Temperature range:	From -25 °C to +45 °C
	Speed:	Up to 300 km/h
	HV charging infrastructure:	22KW (400 kW*)
	Altitude simulation:	4200m (5.000 m*) [↑ 3m/s ↓ 6m/s]
	Sunlight simulation:	Irradiable area: 7 m x 2.5 m
	Emission measurement technology:	AVL Slim Line



*in progress

Technical data All-wheel A/C roller dynamometers with altitude chamber

Roll Performance

Manufacturer	AVL customs
Type	AVL ROADSIM 48" MIM 4x2
Roller diameter	48" parting roll
Power	2 x 360 kW
Flywheel mass range (1axis)	454 kg ... 4.250 kg
Flywheel mass range (2 axis)	800 kg ... 8.500 kg
Flywheel masses	Electrically simulated
Max. Axle load	2.500 kg
Max. Speed	300 km/h
Axle distance	1.800 – 4.500 mm
Track width	900 mm Inner edges of tires 2.030 mm Outer edges of tires
Vehicle holder systems	<ul style="list-style-type: none"> - Vehicle weight max. 3,500 kg - Maximum acceleration 10 m/s² - Maximum tractive force 30,000 N

Emission Measurement

Manufacturer CVS plant	AVL Emission TestSystems, Typ CVS AL LE
Measuring principle	Critical Flow Venturi (CFV) / 4 CFV
Maximum flow rate	40 nm ³ /min
Options	<ul style="list-style-type: none"> - Isolated and heated; - Tail Pipe Pressure Control - Dilution Air - Flow measurement
Manufacturer exhaust gas measuring system	AVL Emission TestSystems, Type AMA SL D1
Analyzer CO₂ /CO/NO_x	IRD SL/IRD SL/CLD SL
Analyzer THC/CH₄/Tunnel THC	Twin FID SL
Special measurement technology	<ul style="list-style-type: none"> - 2 x 3 lines raw exhaust gas measurement - 7 x FTIR (raw exhaust gas) / 4 x Micro Soot - 4 x Opacimeter - AVL Particle Sampling System - AVL Particle Counter - AVL Filter Weighing Robot FWR 585 - Hioki 3390 current power meter - Quantum cascade laser for the measurement of nitrous oxide (N₂O)

Technical data All-wheel A/C roller dynamometers with altitude chamber

Height simulation

- Altitudes from ambient Altitude 4200m
 - 5000 m in progress
- Exhaust gas measurement via the CVS up to an altitude of 3,000 m
- Pressure adjustment [↑ 3m/s | ↓ 6m/s]

Temperature range

- From -25 °C to + 45 °C
- Adjustable test stand humidity

Traction blower

- Manufacturer: AVL
- Type: RDE & SC03 Blower

HV charging infrastructure

- 16 x 22 kW charging station
- 1 x 160 kW outdoor charging station
- In progress: 8 x 400 kW charging station
- Discharge and range testing for BEVs
- Adaptation of SOC HV storage of BEV vehicles
- Existing safety concept for operation of PHEV and BEV vehicles, special extinguishing equipment (fire blanket) and fire extinguishers with additives

Sunlight simulation

- Manufacturer: BF Engineering
- Maximum with up to 94 kW power
- Floodlights: 24 x BF SUN 4.000 W
- Daylight lamps: Type Osram HMI 4.000 W DXS
- Motorized shading: tunnel drive/cloud simulatable
- irradiable area 7 x 2,5 m

Special measurement technology

- 2 x 3 lines raw exhaust gas measurement
- 7 x FTIR (raw exhaust gas) / 4 x Micro Soot
- 4 x Opacimeter
- AVL Particle Sampling System
- AVL Particle Counter
- AVL Filter Weighing Robot FWR 585
- Hioki 3390 current power meter
- Quantum cascade laser for measurement of nitrous oxide (N2O)
- Driving robot Stähle SAP 2000 for computer-controlled driving of vehicles on test benches
- 2 lines activated carbon filter loading station for the legally required conditioning of AKF

Technical data

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2 all-wheel A/C roller test benches with altitude chamber



6 all-wheel A/C chassis dynamometers



2 chambers for Sealed Housing for Evaporative Determination measurements (SHED)



Special measurement technology



HV charging infrastructure



Real Driving Emissions (RDE) and general workshops

Technical data

All-wheel A/C chassis dynamometers

**Roller performance:**

360 kw

**Temperature range:**

From -7 °C to +40 °C

**Speed:**

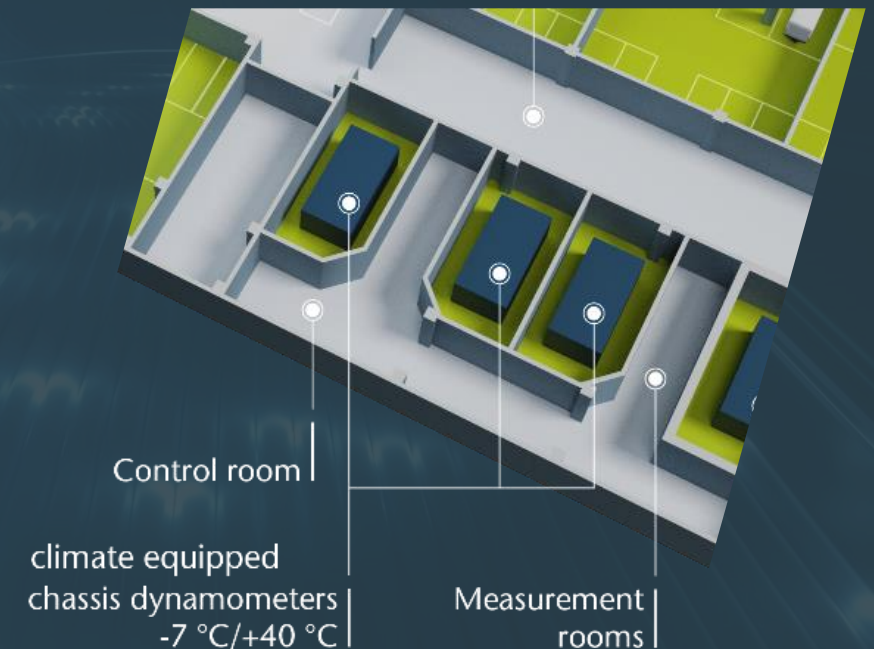
To 250 km/h

**HV charging infrastructure:**

22KW (400 kW*)

**Emission measurement technology:**

AVL Slim Line



*in progress

Technical data all-wheel A/C chassis dynamometers

Roll Performance



Manufacturer	AVL customs
Typ	AVL ROADSIM 48" MIM 4x2
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Analyzer CO₂ /CO/NO_x	IRD SL/IRD SL/CLD SL
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Special measurement technology	<ul style="list-style-type: none"> - AVL Particle Sampling System - AVL Particle Counter - AVL Filter Weighing Robot FWR 585 - Hioki 3390 current power meter - Quantum Cascade Laser for the Measurement of Nitrous Oxide (N₂O)

Technical data all-wheel A/C chassis dynamometers

Special Measurement



- AVL Particle Sampling System
- AVL Particle Counter
- AVL Filter Weighing Robot FWR 585
- Hioki 3390 current power meter
- Quantum cascade laser for the measurement of nitrous oxide (N₂O)

- Driving robot Stähle SAP 2000 for computer-controlled driving of vehicles on test benches

- 2 lines activated carbon filter loading station for the legally required conditioning of AKF

Traction blower



- Manufacturer: AVL
- Type: RDE & SC03 Blower
- Max. Air speed 0.3 m² @160 km/h

Temperature range



- From -7 °C to + 40 °C
- Adjustable test bench humidity (3/14.2 g/kg dry air (±1 g/kg)

HV- charging infrastructure



- 16 x 22 kW charging station
- 1 x 160 kW outdoor charging station
- In progress: 8 x 400 kW charging station
- Discharge and range testing for BEVs
- Adaptation of SOC HV storage of BEV vehicles
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Technical data

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2 all-wheel A/C roller test benches with altitude chamber



6 all-wheel A/C chassis dynamometers



2 chambers for Sealed Housing for Evaporative Determination measurements (SHED)



Special measurement technology



HV charging infrastructure



Real Driving Emissions (RDE) and general workshops

Two chambers for SHED measurements

Sealed Housing for Evaporative Determination measurements (SHED)



Manufacture/type:

AVL VV/VT-SHED



Dimensions full size:

Inside (W x H x D):

2.200 x 2.700 x 6.600 mm;
about 48 m³ volume



Dimensions magnum:

Inside (W x H x D):

3.500 x 3.600 x 8.700 mm;
about 96 m³ volume



Temperature range:

15 – 60°C



Technical data SHED measurements

Measurements

- Full Size SHED - Dimensions (Inside) (W x H x D): 2200 x 2700 x 6600mm
- Magnum SHED – Dimensions (Inside) (W x H X D): 3500 x3600 x8700mm
- Measurement component : THC

Temperature range

- Temperature chamber: test operation 15 - 45 °C, bake-out phase max. 60 °C
- Temperature control accuracy ± 0.5 °C
- Temperature dynamics : 0.5 -1°C/ min (between 20 -40 °C)

Volume

- Full Size SHED volume: about 48 m³
- Magnum Shed volume: about 96 m³

AVL VV/VT-SHED attachment

- Used to determine gaseous ab: Diurnal & Hot Soak fuel emissions from motor vehicles or parts thereof, according to legal requirements (e.g. EPA Title 40 Part 80 and Part 86 and EU Regulation 715/2007)
- Temperature chamber for measurement of evaporative emissions / VV/VT-SHED
- Inspection and testing of all kinds of vehicles (e.g. automobiles, motorcycles, scooters, etc.) but also off-road equipment (lawn mowers, chainsaws, etc.)
- In special cases: Testing of tank superstructures, individual components or modules
- The included application package covers with its ready-to-use configurations as well as the subsequent data processing and evaluation routines the following currently valid legal test procedures and standards Test Procedure (ECE R83, Annex 7, Type IV Test)

Test sequences & standard

- Diurnal Test Procedure (EPA CFR 40 §86.133-96)
- Hot Soak Test (EPA CFR 40 §86.138-96)
- ORVR - Refueling Test Procedure (EPA CFR 40 §86.150-98)
- DBLT - Diurnal Breathing Loss Test (EPA CFR 40 §86.133-90; Brazil)
- Bleed Emission Test Procedure (Passive SHED)
- EPA CFR 40 §1066 Subpart J (referring to EPA §86)
- CARB - CCR 13 § 1976 (referring to EPA §86)
- CHINA Beijing 6 (referring to EPA §86)
- INDIA (referring to ECE R83 - Type IV Test)
- JAPAN JASIC 11-3-49 §8f (referring to ECE R83, Type IV Test)

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2 chambers for Sealed Housing for Evaporative Determination measurements (SHED)



Special measurement technology



HV charging infrastructure



Real Driving Emissions (RDE) and general workshops

Technical Data

Real Driving Emissions (RDE) workshops



Installation/attachment Portable Emission Measurement (PEMS) measurement technology



4 lifting platforms



Modern workshop equipment



Customer conversions / individual vehicle conversions



You can find more information on our website

→ Your request by email:

anfragen@bertrandt.com

→ <https://www.bertrandt.com/bpsc/>

- technical specifications
- all solutions and services
- background information

