

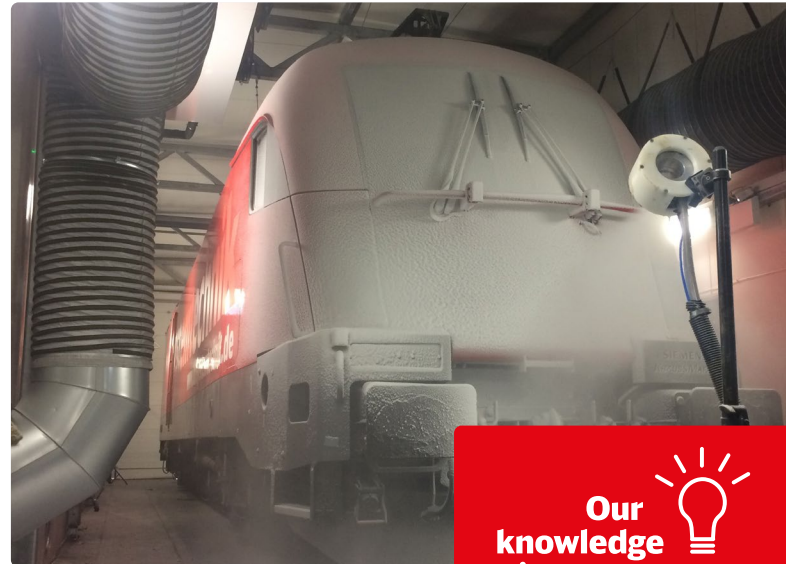


## State of the art: the climatic chamber in Minden

### Air conditioning tests and functional tests on vehicles

Climate testing on the vehicle involves testing environmental conditions in the climatic chamber and during test drives. The aim is to test and define climate comfort requirements or to clarify deviations from the standards. During the air conditioning tests and functional tests, individual components (including HVAC systems) are tested under a wide range of climatic conditions.

The aim is to test the functional ability of components on the entire vehicle under severe weather conditions.



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**Our  
knowledge  
is your success.**

#### Our services

##### Climatic chamber – tests and test conditions:

- Acquisition of data relevant to comfort and air conditioning (temperature, relative humidity, pressure)
- Simulation of latent and sensitive load arising from occupancy and solar heat input
- Power consumption measurements
- Heat transfer coefficient (U-value)
- Size of the chamber up to 75 m x 5 m x 5 m (L x W x H), divisible into 35 m, 10 m, 30 m
- Temperature range from -20°C to +60°C
- Controlled humidification of the chamber air above +10°C
- Electrical power supply: 1000 V / 16.7 Hz; 400 V / 50 Hz
- Exposure to snow, ice and rain as well as solar radiation directed at driver's cab and roof

#### Your benefits

- Accredited measurements for climatic comfort in accordance with UIC 553-1, EN 13129, EN 14750-2, EN 14813-2
- Optimization of thermal comfort
- Risk minimization for the full type test later
- Reliable HVAC systems and components
- Improved air distribution in the vehicle and in air ducts
- Emergency ventilation and fire protection
- Determination of the energy consumption of HVAC systems (duty cycle) and energy-saving measures

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