

Climatic Wind Tunnel

Climatic Wind Tunnel and Climatic Vehicle Chamber



Visteon European Testing Operations comprises a powerful climatic vehicle wind tunnel, a unique laser lab for airflow measurements and a large size climatic lab with modern test rigs. The facilities are located directly at the Kerpen motorway junction between Aachen and Cologne.

The sophisticated Climatic Wind Tunnel with a 4-wheel dyno supports vehicle testing in a wide range of thermal and road load conditions for "real life testing" under well defined stable environmental conditions. State-of-the-art technical equipment enables precise temperature stability during testing and allows fast changes of thermal conditions.

Climatic Wind Tunnel

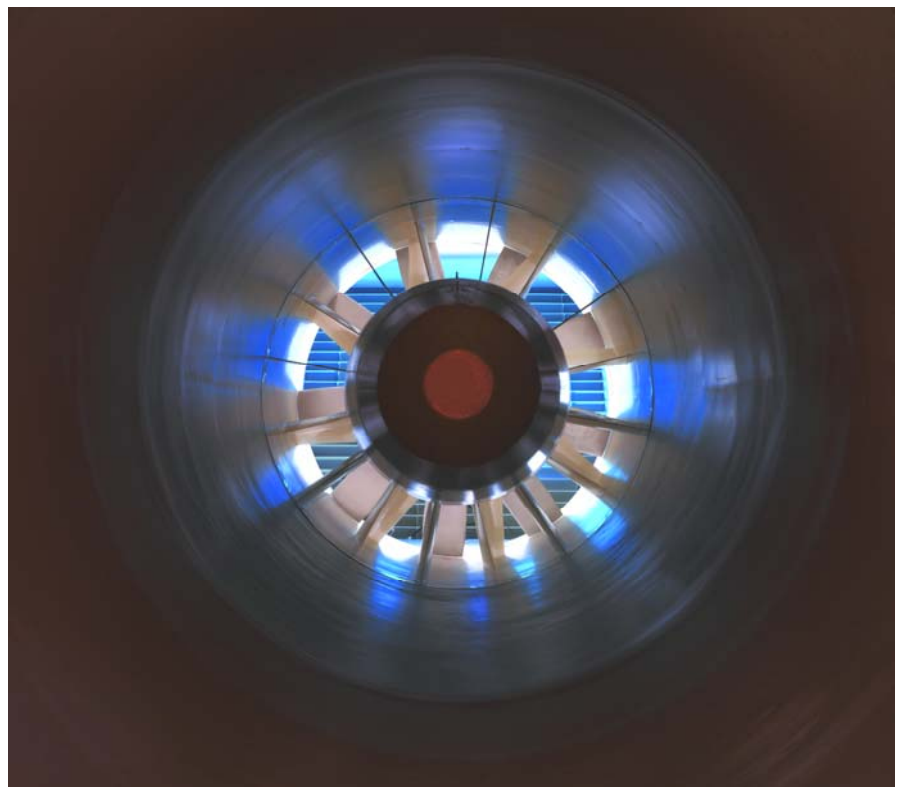
- Air velocity up to 225 km/h
- Executes tests in a temperature range from -40 to $+55$ °C
- Flexible solar simulation system enables reproduction of any worldwide sun conditions
- 4-wheel dynamometer with a unique adjustable wheelbase can absorb up to 235 kW

Climatic Chamber

- Static testing and function testing on a 2-wheel dynamometer
- Preconditioning of up to three cars
- Executes tests in a temperature range from -40 to $+55$ °C

Vehicle Instrumentation and Prototyping

- Instrumentation of vehicles for climatic wind tunnel testing and road testing
- Separate work spaces for enhanced confidentiality
- CAN bus interfaces



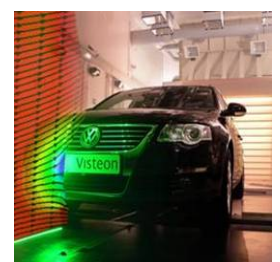
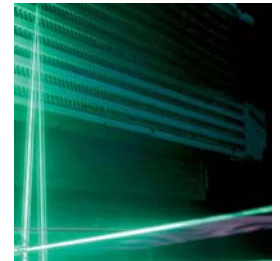
Visteon Corporation European Test Operations

Visteon Deutschland GmbH
Visteonstraße 4-10
50170 Kerpen / GERMANY
Phone: +49 (0)2273 595-1247
Fax: +49 (0)2273 595-1599
E-mail: CWTinfo@visteon.com
Web: www.visteon.com/testing

Climatic Wind Tunnel and Climatic Vehicle Chamber Main Features



	Climatic Wind Tunnel	Climatic Chamber
Vehicle dimensions	5.7 m x 2.4 m x 2.8 m (L x W x H max.)	
Test section size	9 m x 6 m (L x W)	8,5 m * 10 m (L x W)
Capacity	1 Vehicle	3 Vehicles (3 exhaust systems)
Air Velocity	0 – 165 km/h (4.65 m ² nozzle) 0 – 200 km/h (3.00 m ² nozzle) 0 – 225 km/h (2.25 m ² nozzle)	50 km/h (movable fan)
Air Temperature	-40 to +55 °C (tunnel and chamber are independent)	
Air Humidity	10 to 90% relative humidity	
Data acquisition	300-channel data acquisition	300-channel data acquisition
Solar Simulation	300 to 1200 W/m ² , full real spectrum, movable radiation angle	---
Dynamometer	4-wheel drive Adjustable wheelbase 1.8 – 3.8 m	Fixed 2-wheel drive
Dyno max. speed	225 km/h	50 km/h
Dyno Absorbtion Power	Front: 180 kW Rear: 235 kW 4-wheel: 235 kW	90 kW



Visteon Climatic Wind Tunnel Capabilities

Visteon's Climatic Wind Tunnel offers a comprehensive portfolio of innovative test capabilities. Together with highly skilled staff and efficient processes, flexible support is provided to customers in their development programmes and advanced technology projects. Visteon ensures independent and confidential operation through access controlled security areas.

Test Capabilities

- A/C system performance
- Heater system performance
- Engine cooling performance
- Underbody heat protection investigations
- Window defrost and demist according to legal standards
- Simulated day profiles of temperature, humidity, solar radiation and drive conditions
- Hot and cold thermal stress, heat protection, thermal management
- Functional checks in hot and cold environment
- Fuel consumption measurement in test environment from –40 to + 55 °C
- Objective passenger comfort with thermal manikins
- Standardised testing of automatic temperature control systems
- Combined with other unique testing capabilities (Laser Technology, NVH Laboratory)
- Combined with Climate Laboratory facilities (e.g. HVAC component and system testing, airflow measurement)

Specifications and descriptions contained in this document were in effect at the time of publication. Visteon reserves the right to discontinue any equipment or change specification without notice and without incurring obligation.
© Jan. 2009 Visteon Corporation and Visteon Deutschland GmbH, Kerpen, Germany — All Rights Reserved