

Systems Test Room



Description:

The systems test room (STR) is an environmental chamber used to simulate vehicle operating conditions. The primary purpose of this equipment is to allow for the development of airflow and temperature distribution patterns for HVAC systems, while minimizing development time and costs.

The external equipment provides controlled and monitored inputs of conditioned air (temperature, humidity, and flow rate), refrigerant (flow rate and quality), and engine coolants (pure water or water-glycol mixture), while the chamber simulates the vehicle interior conditions (-20° to 50°C). Typical tests include temperature distribution, temperature linearity, total airflow, system efficiencies, and pressure drops.





Systems Test Room

Tests:

Heater core, evaporators, and complete HVAC units

Data Acquisition:

Daytronic hardware with data available in hard copy or electronic spreadsheet format

Hot Water/Glycol Temperature:
24° to 93°C

Hot Water Flow:

2 to 34 l/min

Work Space:

1.75 m x 2.7 m x 2.08 m

Air Temperature:

-20° to 50°C

Refrigerant Pressure Range:

Complete automotive simulation using R134a refrigerant

Airflow:

1 to 15 standard cubic meters per minute, controlled on the supply side

Environmental Capabilities:

10 to 95% RH

Limited by 6°C dew point



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