

SURFACE CALORIMETERS



Climatic Testing Systems, Inc. (CTS) designs and manufactures a complete line of Surface Calorimeters for automotive and commercial air-conditioning application in accordance with ASHRAE Standard 33. Surface Calorimeters are used to determine the capacities of components such as: Evaporators, Condensers, Radiators, Heater Cores, Oil Coolers, Charge Air Coolers, Tube Surfaces and Chilled Water Coils. Our Surface Calorimeters are designed to provide extreme accuracy, repeatability and flexibility in the determination of heat exchanger thermal capacities.

CTS Surface Calorimeter systems feature temperature controlled chambers for the control of the air temperature over the heat exchangers. These conditions are precisely controlled and recorded. CTS uses Code Test Tunnels to determine system air flows and the psychrometric conditions of the air as it leaves the test piece. Our Code Test Tunnels include AMCA nozzles with either manual or automatic selection of the required nozzles. Our Tunnels are designed with a bypass system to allow a wide range of system air flows without sacrificing system accuracy.

System Design & Features

PARAMETER	RANGE	STABILITY
Chamber Temperature	-40°F to 250 °F	±0.5°F
Chamber Dew Point	35 to 135°F	±0.2°F
Air Flow	50 to 50,000 CFM	±1%
Refrigerant High Side Pressure	100 to 600 Psig	± 2.5 psig
Refrigerant Low Pressure	0 to 200 Psig	± 0.5 Psig
Refrigerant Liquid Temperature	50 to 210 °F	± 0.2°F
Glycol Flow	0 to 100 GPM	±0.2 GPM
Glycol Temperature	0°F to 250°F	±0.2°F
Oil Flow	2 to 20 GPM	±0.2 GPM
Oil Temperature	0°F to 320°F	±0.2°F
Charge Air Flow	50 to 1000 CFM	±1%
Charge Air Temperature	60°F to 450°F	±0.2°F



Capacity Range:

- Passenger Car & Truck, Bus and Van: up to 10 Tons
- Commercial Air-Conditioning: up to 150 Tons

Performance Measurement

- 2% agreement or better Heat Balance air-side to refrigerant side
- 1% repeatability of test results

Available Options:

- Oil in Circulation Control
- Auxiliary Evaporator Systems
- D.C. Blower Controls
- A2L Refrigerants

Software Features

- > Editing of test programs
- > Automatic test sequencing
- > Loop calibration and calibration reporting
- > Hardware checkout routine
- > Stability monitoring
- > Real time tolerance adjustments
- > Real time-history graphing capability
- > Automatic Test Report Generation
- > Data File Management



Bringing the Desired Climate to Your Doorstep

Climatic Testing Systems

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