



# TESCOR

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## AUTOMOTIVE A/C SYSTEM CALORIMETER



Tescor's A/C System Calorimeters are designed to provide the customer with extreme accuracy, repeatability and flexibility in the determination of automotive air conditioning system thermal capacities. We have designed system calorimeters for passenger car and bus air conditioning systems. The system calorimeters utilize up to three (3) Walk-In Chambers for the control of ambient conditions for the condenser and evaporator(s)/heater core(s) and One (1) Reach-In Chamber for the control of ambient conditions around the compressor. These ambient conditions are precisely controlled and recorded. Tescor uses Code Testers to determine system air-flows and the psychrometric conditions of the air as it exits the test piece. The code testers include AMCA nozzles with a bypass system to allow a wide range of system air-flows without sacrificing system accuracy. The calorimeter offers control over such parameters as ambient temperature and humidity, test piece air flow, compressor speed, discharge pressure, condenser inlet temperature, expansion device inlet temperature, suction temperature, heater core inlet temperature, pressures and flows, etc. The calorimeter is supplied with a fully automated computer data acquisition and control system and is designed for heat balances of  $\pm 2\%$  with a repeatability of  $\pm 1\%$ .

Tescor offers a standard line of Car A/C System Calorimeters up to 6 tons capacity. Tescor also offers a Standard line of Bus, Van and Car A/C System Calorimeters with a capacity up to 20 tons, including capability for testing completely assembled Roof-Top A/C Systems



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Automotive A/C  
System Calorimeter  
Typical Specifications

PARAMETER	RANGE	STABILITY
Compressor Chamber Temperature	40 to 130 °C	±1°C
Compressor Speed	600 to 10,000 RPM	± 5RPM
Discharge Pressure	10 to 35 kg/cm <sup>2</sup> A	± 0.2 kg/cm <sup>2</sup>
Suction Pressure	0 to 7 kg/cm <sup>2</sup> A	± 0.05 kg/cm <sup>2</sup>
Liquid Temperature	15 to 100°C	± 0.2°C
Oil Mass Flow	0 to 60 kg/hr	± 0.1% of Refrigerant Mass Flow
Evaporator #1 Air Flow	90 to 2630 m <sup>3</sup> /hr	±0.5%
Evaporator #2 Air Flow	90 to 2630 m <sup>3</sup> /hr	±0.5%
Condenser Air Flow	720 to 6500 m <sup>3</sup> /hr	±0.5%
Condenser Room Temperature	10 to 50°C	±0.2°C
Evaporator Room #1 Temperature	-10 to 50°C	±0.2°C
Evaporator Room #1 Dew Point	3 to 40°C	±0.2°C
Evaporator Room #2 Temperature	-10 to 50°C	±0.2°C
Evaporator Room #2 Dew Point	3 to 40°C	±0.2°C
Glycol Flow	0 to 40 LPM	±0.2 LPM
Glycol Temperature	50 to 110°C	±0.2°C

- ❑ Software
  - Create Tests And Sequences for Automatic Operation
  - User configurable data acquisition channels
  - User configurable calculation channels
  - Loop Calibration Utility
  - Dedicated hardware checkout routine
  - Color coded stability status indicators
  - Stability tolerance adjustment on the fly
  - Time-history graphing capability
  - Automatic Test Report Generation
  - Data File Management and Search Tools
  
- ❑ Performance Measurement
  - 2% agreement or better refrigerant side to code tester air side for 80% of test results
  - 1% repeatability of test results
  - Evaporator(s) Calorimeter Tests
  - Condenser Calorimeter Tests
  - Complete A/C System Calorimeter Tests
  - Heater Core Tests
  - D.C. Blowers Capacity Tests

Note: The specifications shown above are typical. Tescor can customize your system to provide the performance that you desire.

Tescor manufactures a full line of Automotive Climate Control Test Equipment such as: *A/C System Calorimeters, Radiator Calorimeters, Condenser Calorimeters, Evaporator Calorimeters, Heater Core Calorimeters, Oil Cooler Calorimeters, Charge Air Cooler Calorimeters, Clutch Test Stands, Compressor Endurance Test Benches, Compressor Noise Test Benches and Compressor Audit Benches.*