TESTING & SIMULATION SYSTEMS

DRIVING OPTIMAL PERFORMANCE

PSYCHROMETRIC AND BALANCED AMBIENT TEST ROOMS

Psychrometric and balanced ambient test rooms are used to measure and evaluate thermal performance of air conditioning units, heat pump units and hydronic systems. The designed balanced ambient and psychrometric rooms simulates both the indoor and outdoor conditions, thus generating thermal loading conditions normally experienced by the units during their operation.

ETC's design is based on our decades of experience in designing balanced ambient and psychrometric test rooms for the HVAC industry. ETC's test rooms use the latest and most accurate sensors, controls and data acquisition systems and are fully automated with a PC computer. The psychrometric and balanced ambient test rooms create very precise environmental and refrigeration conditions, thus generating very accurate and repeatable results.

FEATURES

• Insulated modular panel construction • Indoor/outdoor rooms to simulate indoor/outdoor temperature and humidity conditions • Code testers/air enthalpy tunnels to measure airflow rate and psychrometric conditions • Indoor and outdoor conditioning equipment packaged in skids • Solid state sensors, PLC and PID's • Fully automated Data Acquisition System • Meets ASHRAE 37, ARI and ISO standards • Calibrated Calorimeters

APPLICATIONS

- Air conditioners, heat pumps, split systems and window units
- Hydronic systems

PSYCHROMETRIC AND BALANCED AMBIENT TEST ROOMS SPECIFICATIONS

SPECIFICATIONS

Capacity	2 to 60 tons (12,000 to 720,000 BTU/hr) 7.0 to 210 kw)
Indoor dry bulb temperature range	46° to 122°F (8° to 50°C)
Indoor wet bulb temperature range	40° to 80°F (4° to 27°C)
Outdoor dry bulb temperature range	-4° to 130°F (-20° to 54°C)
Outdoor wet bulb temperature range	40° to 90°F (4° to 32°C)
Energy balance	± 3%
Repeatability	± 1%
Dry bulb temperature control	± 0.2°F (0.1°C)
Wet bulb temperature control	± 0.2°F (0.1°C)

AIR FLOW CONTROL

External static pressure	± 0.2%
Airflow stability	±0.5%

SOFTWARE AND DATA ACQUISITION SYSTEM

- Windows® environment with LabVIEW™
- User friendly operator interface
- Editing of test programs
- Real time data acquisition, data display and data analysis
- Automatic test sequencing
- Graphic screen presentation of parameters
- Four (4) level password security
- Fail-safe protection with programmable warning and shut down levels
- Performance curves and test report generation

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