Research, Development and Testing Centers
Delivering Performance and Innovation
THE NORTEK AIR SOLUTIONS TEST LABS

No one knows more about HVAC testing than Nortek Air Solutions, based on years of research and development by experts in the field.

Over the past two decades, Nortek Air Solutions test lab personnel garnered the highest reputation from customers and consultants and became recognized as a leading authority in the HVAC industry.

Advanced Air and Acoustics Laboratory
Milwaukie, Oregon, USA
Airflow and energy testing for customer witness, regulatory compliance, research and development.

OKC Laboratory
Oklahoma City, Oklahoma, USA
Acoustic, airflow, thermodynamic, energy testing for customer witness, regulatory compliance, research and development.

Coil Calorimeter
Okarche, Oklahoma, USA
Thermodynamic, psychometric testing for measuring coil performance for research and development and process verification on water and DX coils.

Factory Testing
All Manufacturing Locations
All manufacturing locations have a level of factory testing to ensure accuracy, base performance and compliance. Additional factory function testing is available.
Nortek Air Solutions offers the innovation and expertise of the largest group of custom heating, ventilation, and air conditioning (HVAC) brands in North America for your commercial, industrial, or institutional indoor environment. Nortek Air Solutions products are custom-engineered to bring you the optimal solutions for maximizing energy efficiency, reducing annual operating costs, improving indoor air quality, and achieving low sound levels. We offer high quality systems in multiple shapes, sizes, and configurations for new construction and renovation or retrofit applications.

As the leading custom HVAC manufacturer for commercial, industrial and institutional applications, Nortek Air Solutions makes things possible with your HVAC system that would otherwise be unachievable using a commercial solution. Your solution is our mission – whether it involves meeting an impossibly small footprint, extremely low sound, high operating efficiency, high efficiency filtration, multiple levels of redundancy, or you want to make the HVAC system disappear in your building design.

Our local representatives listen to your needs and work with our engineering staff to design systems that meet your unique needs.
OKC Laboratory
Oklahoma City, Oklahoma, USA

Where Quiet Is Defined
We know how important it is that your HVAC systems operate quietly, which is why Nortek Air Solutions has always committed to providing this important benefit. We consistently go the extra mile to provide solutions that offer an acoustically superior indoor and outdoor environment — without adding costs. In fact, you’ll find that our solutions actually lower your attenuation costs.

Commitment To Customer Satisfaction
Our commitment to customer satisfaction, and to providing a superior product that meets your acoustical needs is evidenced by our state-of-the-art sound laboratory. The lab is one of the largest, fully equipped, dual reverberant chamber HVAC testing facilities of its kind. Located in Oklahoma City on the Nortek Air Solutions campus, the lab provides a wide range of unique services to our customers and suppliers, including acoustical modeling, comprehensive production testing and robust performance and diagnostic analysis. It also serves as a site for rigorous, ongoing research and development testing and modeling, as well as a place for customer-witnessed testing of airflow, thermal, vibration and acoustical performance of units manufactured by Nortek Air Solutions.

Providing Accurate Measurements of Performance
Nortek Air Solutions sound lab is designed and equipped to perform simultaneous testing in accordance with AMCA Standard 300 for sound power levels and AMCA Standard 210 for airflow performance. Since the lab first earned AMCA accreditation, Nortek Air Solutions has worked to continually increase the lab’s capabilities. This commitment to continued growth has allowed for testing units in accordance with other standards and requirements, such as AHRI 260 testing, additional acoustical testing methods, thermal testing, vibration testing, cabinet leakage testing and full power analysis — just to name a few.
COMPETENCIES AND CAPABILITIES

SOUND POWER

TESTING
Performed from 50 to 10,000 HZ, in accordance with AMCA Standard 300. The lab’s dual AMCA 300 reverberant chambers are among the largest in the industry.

THERMAL PERFORMANCE TESTING
Air handlers and compressorized units can be evaluated up to 150 tons (528 kW) of cooling and 1,500 MBTU (440 kW) of heating. The lab is equipped with both a chiller and a boiler to offset the tested equipment’s heating and cooling capacity.

AIRFLOW TESTING
Conducted up to 65,000 CFM (31 m³/s) or more, depending on individual unit static pressure capabilities, in accordance with AMCA Standard 210.
Advanced Air Movement & Acoustics Laboratory

Milwaukie, Oregon, USA

The advanced air movement and acoustics laboratory is located conveniently near the Nortek Air Solutions production facility in Tualatin, Oregon. Its purpose is to verify the actual airflow and acoustic performance of our technology in a laboratory setting before it is applied in Nortek Air Solutions products.

The research and testing performed at this lab has been essential to the continuous improvement in the patented FANWALL TECHNOLOGY® used in all Nortek Air Solutions air handling equipment. The innovative fan design research and development done here, including fan development, coplanar and low loss backdraft damper, has kept FANWALL® systems at the forefront of energy efficiency, redundancy and quiet operations for more than two decades.

6-CH, Tri-Axial Vibration Plots
TESTING CAPABILITIES

- AMCA 210 and 300
- Airflow chambers for:
  - 5,000 CFM
  - 20,000 CFM
  - 50,000 CFM
  - 100,000 CFM
- Fan dynamometer
- Motor dynamometer
- Power and harmonics analyzer
- Flow visualization–neutral buoyancy bubble generator
- Acoustics
- Structural resonance and modal testing

Sound/Vibration Run-Up
(Frequency & Magnitude vs Speed)
Coils are crucial to the overall operation and efficiency of an air handler and need to be made of the highest-quality materials, manufactured under strict quality control standard, and designed for long life and top performance.

That is why we provide coil configurations that meet the most demanding applications and timelines. The coil calorimeter is used to test new technologies and process verification of our water and DX coil. Nortek Air Solutions coils are AHRI Certified™ to Standard 410.

Our local representatives listen to your needs and work with our engineering staff to design systems that meet your unique needs.
FACTORY FUNCTION TESTING

Factory Testing

All units built by Nortek Air Solutions include a point-to-point physical test of the electrical system and a basic checkout of functionality to comply with UL and ETL standards.

Factory Function Testing and Startup

A factory startup of the unit can be conducted at additional cost to validate the system. Some of the features available are:

- Circuit activation
- Validation of all safety circuits
- Sensor operations
- Protocol validation
- Performance check at load
- Basic sound tests
- Charging of refrigeration
- Cabinet leakage test
- Wall deflection test
- Vibration

Complex testing needs or precision performance measurements can be conducted at one of the laboratories.
VISIT ONE OF OUR TEST LABS

Nortek Air Solutions Test Laboratories
Welcome Your Visit

We encourage you to come visit our labs to get a first hand view of the various forms of testing that we undergo to ensure the world’s highest quality mission-critical solutions.

Confidence In Performance

Comprehensive report is provided for your project with calibrations, explanations and test data.

Scheduling A Visit

If your application requires the assurance of a unit laboratory test, we invite you to witness your unit operating in our laboratory or factory.

To find your local representative visit
www.nortekair.com
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