

# Welcome

## WELCOME TO THE ENERGY LABS FACTORY VIRTUAL TOUR



Energy Labs entire line of custom air handling units is ETL listed.

# ENERGY LABS FACTORY VIRTUAL TOUR

- Entering the factory you are greeted by a view of the large manufacturing floor.



# Product Showroom

- The product showroom highlights the various available features of an Energy Labs Air Handler.



# Liners

- Various liners are available on the units, including perforated, galvanized, stainless steel, and many more.



# Insulation

- There are a variety of choices for insulation material, in both 2" and 4" thicknesses. All insulation used by Energy Labs is NFPA90A approved.



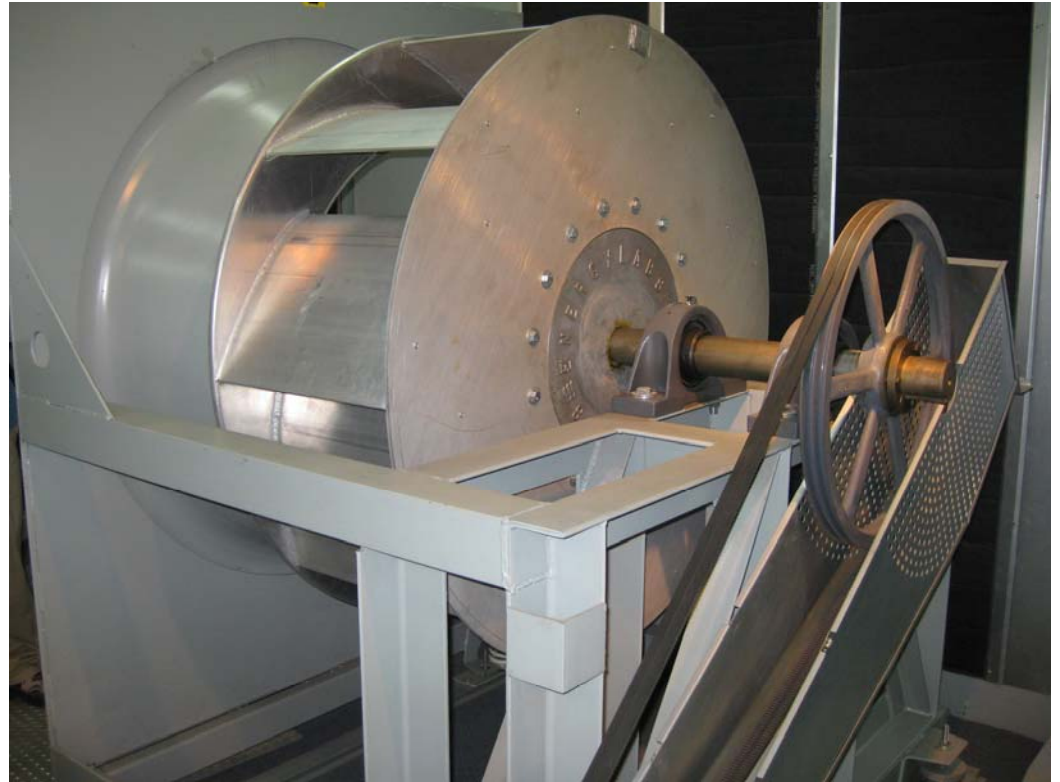
# Filters

- Our showroom shows all of the options for filter selections available in an Energy Labs Air Handler.



# Fan Assembly

- Fan assemblies are available in either direct drive or belt drive setups. Energy Labs is an AMCA licensed fan manufacturer.



# Fan Wheel

- Aluminum fan wheels are precision mounted in place before final welding to ensure optimal airflow and balancing.



# Fan Hub

- The fan hubs are machined in house at Energy Labs to the highest standard of quality.



# Assembly Stations

- Exiting the showroom, you are shown the various assembly areas including damper assembly.



# Damper

- The finished damper provides a strong, tight seal to the airflow, and moves smoothly on its hinged design. All Energy Labs dampers and louvers are AMCA tested for pressure drop, leakage, and water penetration.



# Stations

- Filter racks and accessory housings are assembled at this station.



# Frames

- Frame rails and base sections are all constructed to custom dimensions in house.



# Finished Frame Assembly

- Finished frame assemblies are checked for proper dimensions and quality welds.



# Fan Testing

- Fan wheels are tested and balanced on site to ensure a minimum amount of vibration to the unit. Every wheel is statically and dynamically balanced to grade G6.3 per ANSI 52.19 and ISO 1940/1.



# Coils

- Examples of failed coil sections are on hand to show the result of using untreated water in the system.



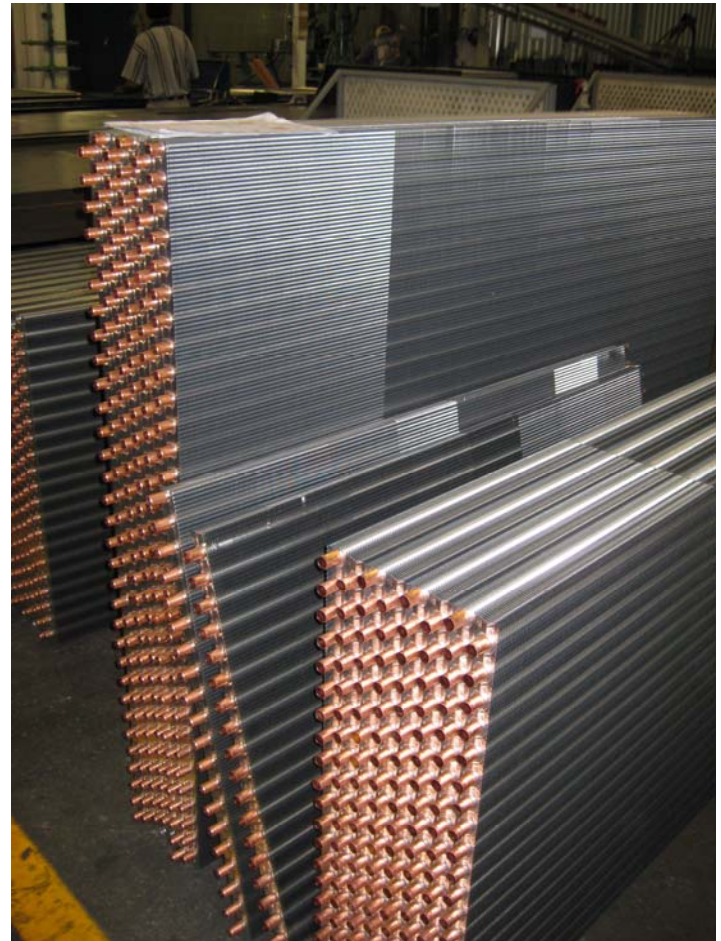
# Coil Assembly

- Coil tubes are pushed by hand through the fin plates on this rack, then expanded by pushing a slightly larger diameter rod through each tube. Energy Labs is an ARI Certified coil manufacturer.



# Completed Coils

- Completed coil racks are then set aside to have return bends fit to each end. The return bends are sized one size larger than the coil tubes to eliminate the problematic thin metal areas at the end of each return bend.



# Headers

- Copper or red brass headers are attached to the coil sections. Each header connection pipe is made of a stronger material such as stainless steel to avoid damages due to over tightening and torque stress.



# Coil Testing

- Each completed coil is then tested in this submersion tank to ensure there are no leaks and the coil will hold pressure.



# Final Assembly Line

- The units are moved to the final assembly line to have each part fit into place. Every Energy Labs Air Handler that leaves the factory floor is ETL approved.



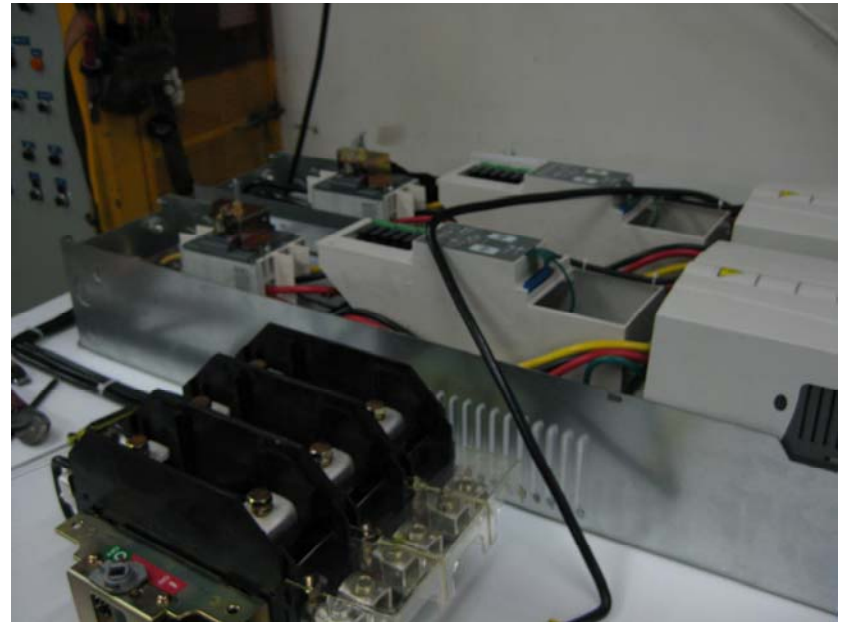
# Assembly

- After assembly, the units will be ready for electrical and paint.



# Electrical

- There is a separate room for all electrical and VFD assembly. Energy Labs provides U.L. 508 listed single source power panels.



# Electrical

- Each unit is completely laid out and wired according to the designed wiring diagram.



# Wiring

- All wiring is completed in house.



# Painting

- Once unit assembly is completed, the unit is sent to the painting department.



# Painting

- The paint is sprayed on and allowed to set, after significant cleaning time with the unit, to ensure no inconsistencies with the paint coat.



# Sound Testing

- Once the unit is complete it is ready to be taken to the AMCA accredited lab for sound testing at the customer's request.



# Sound Testing

- This 35,000 cubic foot reverberant room has been designed to test in accordance with AMCA standard 300 “Reverberant Room Method of Testing” and ARI standard 260 “Sound Rating of Ducted Air Moving and Conditioning Equipment.” A rotating microphone boom is used to measure the sound levels within the chamber.



# Mock up Duct Work

- Duct work is mocked up from hard surface particle board and sealed thoroughly to avoid any leaks.



# Lab

- Inside, careful measurements are taken of the unit to calibrate sound power calculations.



# Testing

- This unpainted final assembled unit is set up for testing.



# Testing

- Duct work is attached for testing on the inlet and outlet openings.



# Thank You

- Thank you for visiting the virtual tour of the Energy Labs Factory.

