

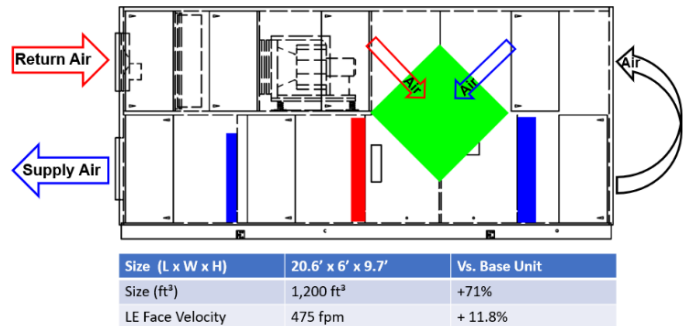
Latent Enhancement Equipment for Energy Efficiency in Controlled Environment Agriculture

Science of Heat Pipe Technology | Solutions in Action
Solutions for Energy Recovery & Dehumidification

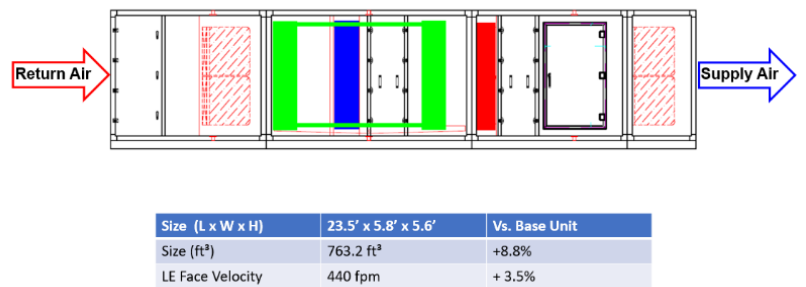
Key Take Aways from seminar 18, 2023 ASHRAE Winter Conference; looking at advantages of incorporating the various energy recovery and dehumidification systems that could be installed or incorporated for energy efficiency.

- The addition of latent enhancement creates opportunity to downsize Chilled Water and Heat Wheel plants and the associated distribution pumping, lowering capital investment required.
- Latent Enhancement costs are quickly recovered, typically 1-3 years, considering reduced capital investment in plant infrastructure and energy savings from chilled water and hot water load reductions.
- A controllable Thermosyphon Run Around Heat Pipe (TRAHP™) provides for the simplest addition, low Air Pressure Drop and provides excellent controllability in response to grow room variables such as the type of lighting, light on and off operating modes, dehumidification coil leaving air conditions, plant maturity, and fertigation schedules.
- A TRAHP™ system allows for a much smaller physical size air handler to accommodate the same CFM, thus providing a cost savings.

AHU Accommodations for: Cross Flow Plate Heat Exchanger



AHU Accommodations for: Thermosyphon Run Around Heat Pipe (TRAHP™)



The heat pipe requires only simple maintenance of periodic coil cleaning for the life of the air handler.

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