

The RH-Cube 18+ is THE solution for coping with the increased humidity that comes with increased ventilation.

- ✓ Lowest Cost
- ✓ Simple installation
- ✓ Lowest energy consumption

APPLICATION NOTE 12

REDUCING COVID-19 TRANSMISSION THROUGH INCREASED VENTILATION

INTRODUCTION

According to ASHRAE, a proven way to reduce COVID-19 transmission is to increase ventilation. Ventilation dilutes contaminants and it significantly increases the time required for exposure to an infectious dose [ref 1].

TARGET AUDIENCE

This application note will be of interest to anyone who wishes to increase the amount of ventilation air and is concerned about how this will increase the dehumidification load.

THE PROBLEM

Current systems cannot cope with the increase in humidity load that occurs when the ventilation rate is increased, and the cost of adding additional dehumidification capacity is prohibitive when using conventional approaches.

THE RH-CUBE 18+ SOLUTION

DewAir's RH-Cube 18+, high efficiency, high capacity dehumidifier provides a solution to this dilemma. It is affordable, easy to install, and may even reduce your energy bill rather than add to it.

A single RH-Cube 18+ dehumidifier combined with a conventional 18,000 BTU air conditioning condenser is able to remove up to 12 lbs. of humidity per hour by creating dew points as low as 40°F. No other dehumidifier can achieve such low dew points or achieve such performance.

It operates independently from the central air conditioner, and its split-air design means it won't add heat-load to the air conditioner.

Because of its high efficiency it is able to focus almost completely on latent heat removal while barely cooling the delivered air. This decouples humidity control from temperature control, and eliminates the need to over-cool to increase dehumidification.

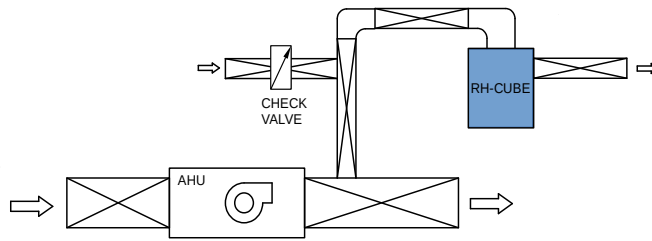


Figure 1: RH-Cube 18+ dehumidifier in series with AHU

When installed in series with the delivery air of an existing air conditioning system, the RH-Cube 18+’s dehumidification capacity increases a further 15% to 14 lbs. per hour while the air conditioner is running. This additional increase is due to the central air conditioner’s delivery air being near saturation when leaving its cooling coil.

SUMMARY OF RH-CUBE 18+ BENEFITS

The RH-Cube 18+...

- ... operates independently from the central air conditioner. The air conditioner does not need to be running for the RH-Cube 18+ to dehumidify.
- ... decouples control of humidity from control of temperature.
- ... does not add any heat-load to the air conditioner because of its split-air design.
- ... does not use condenser reheat. It employs high efficiency heat exchangers instead.
- ... is cost-effective to install. To match the capacity of competitive systems, it only requires a condenser that is one half to one third the size.
- ... is cost effective to run. Using a smaller condenser means that it requires only one half to one third the power to run.
- ... is efficient. It focuses almost completely on latent heat removal, barely cooling the delivered air. This a key to decoupling.
- ... eliminates the need to over cool to increase dehumidification. Avoiding over cooling can cut energy consumption in half.

Visit us at www.dewaircorp.com

References

[1] Fundamentals of COVID-19 Risk Management - William P. Bahnfleth, PhD, PE, FASHRAE, FASME, FISIAQ Professor of Architectural Engineering, The Pennsylvania State University, USA Chair, ASHRAE Epidemic Task Force