



HEAT PIPE TECHNOLOGY

CASE STUDY

Hospitals

Enhancing Performance of Operating Room Cooling Systems With Controllable Wrap-Around Heat Pipes

THE PROBLEM

When a major hospital in Tampa, Florida began planning new OR & IR additions to their main facility, they sought to implement the latest technologies to allow the accurate control and lower than usual dew points these applications require, while at the same time finding ways to reduce operating costs. What they found was a single product that could accomplish it all!



THE SOLUTION

HPT's Dehumidification Heat Pipes (DHP's) utilize the phase change of the working fluid to both precool the air before entering the cooling coil and reheat the air after the cooling coil using the recovered upstream heat that's "wrapped around" the cooling coil. This reduces the load, allowing more latent cooling to be done to achieve a more depressed dew point, while nearly eliminating the need for additional reheat. Adding control valves not only allows reheat temperature to be accurately controlled, but the DHP can be more appropriately sized to handle the more frequent off-peak days, then trimming unwanted reheat by shutting off circuits on peak days to achieve optimum year-round performance.

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THE RESULTS

Two air handlers were designed to deliver nearly 36,000 CFM of 49 F dew point air, utilizing 2-row wrap-around heat pipes to reduce the cooling load by nearly 20%. This allowed the chilled water cooling coils to reach the desired dew point using less energy while the recovered heat provided the desired 7 F degrees of reheat the system required... for free! And by adding control valves, the heat pipe could be sized to provide that desired reheat accurately and more often by shutting off circuits at peak sensible loads. Bill Holcomb, the hospital's Facility Systems Manager, adds that "achieving the necessary dew point while delivering accurate temperature to the space is critical. Reducing energy on both sides of the coil to achieve that was the ultimate goal. And the fact it adds minimal maintenance is a bonus". It's no surprise they included another 150,000 CFM of controllable DHP's for their new Heart Center and ED addition as well!



For more information, visit www.heatpipe.com