

Lens Manufacturer Now Seeing Clearer Energy Picture

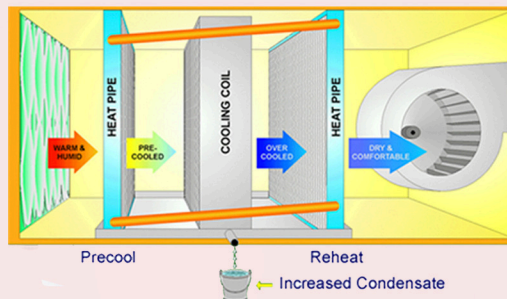
Background

When designing HVAC systems for manufacturing facilities, there are several different factors that must be taken into account. In many cases, such as this optical lenses facility in Florida, the air must be free of contaminants and excess moisture. It is important to provide cool, clean, and dry air conditions to ensure the quality of the products as well as maintain the morale and productivity of the employees. Typically, an over-cool/reheat approach is employed to achieve dry and comfortable conditions, resulting in higher energy costs. Heat Pipe Technology's Dehumidification Heat Pipe Systems aid in the quest for clean and comfortable air while saving tons of energy and money by trimming both cooling *and* reheat.

Solution

Dehumidification Heat Pipe Systems

Heat Pipe Technology's wrap-around Dehumidification Heat Pipes (DHP's) utilize the phase change of the working fluid to precool the outside air before entering the cooling coil and reheat the air after the cooling coil. This method has no moving parts and requires no maintenance. DHP's also reduce the load on the cooling coil and can reduce or eliminate the energy that would otherwise be needed for a separate reheat system.



Project Summary

After installation of the DHP, the incoming air is pre-cooled, reducing the load on the cooling coil. The energy captured by the precool coil is then transferred to the reheat coil, where the leaving air off the cooling coil is passively reheated to a comfortable temperature for the space, creating a high indoor air quality while maintaining a relative humidity of less than 40%. This passive application saves money and energy while still maintaining the desired conditions for the process.

Annual Savings:

PRECOOL: A chilled-water load reduction of over 11 tons, saving an estimated \$8,000 per year.

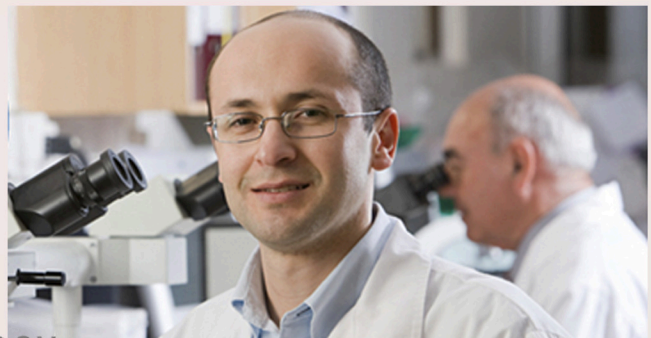
REHEAT: The overall plant gas usage was decreased by more than 15%, resulting in a savings of over \$20,000 per year.

All savings were achieved with only a minimal static pressure drop.

The direct savings of this unit have been estimated at nearly **\$28,000 a year**, resulting in a simple payback of just under **1 year!**

"... the unit was a WIN-WIN!"

-Facilities Manager



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Case Study Manufacturing Facilities