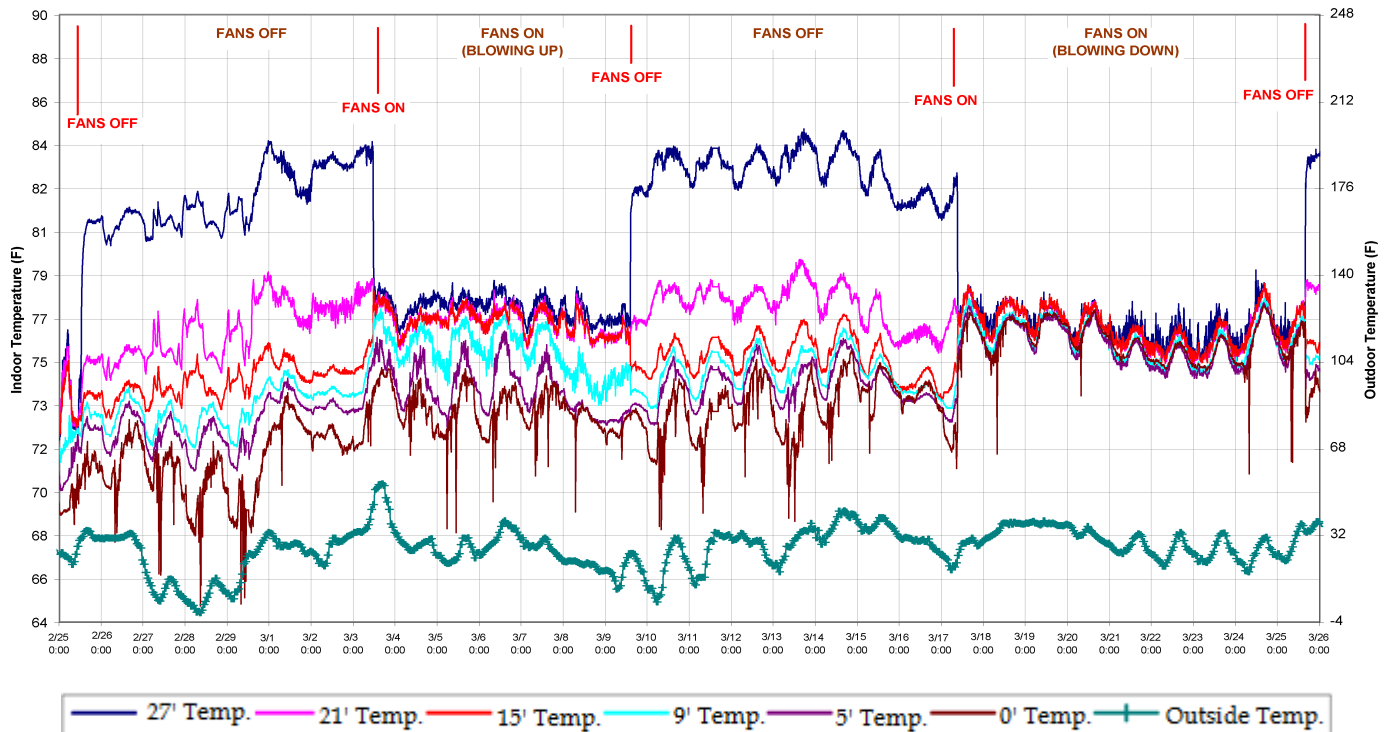


High Volume / Low Speed (HVLS) Fans

High volume low speed fans efficiently move large volumes of air within a space. During the heating season HVLS fans increase building efficiency by reducing stratification. During the cooling season, HVLS fans offer sensible cooling for building occupants. These effects can be seen in the graph below:

Destratification Fan Testing - Temperature Profile #3



The first and third quadrants in this chart record the state of a warehouse with HVLS fans off. Note the consistent thermal gradient present in the building, as well as how quickly it returns in the third quadrant. This gradient contributes to significantly increased thermal losses as the roof of the building is consistently 10 degrees warmer than the floor area. The second quadrant of the chart displays the temperatures in the same warehouse following activation of HVLS fans in reverse mode. Here some destratification can be observed, but most importantly ~4 degrees of sensible cooling is generated for occupants. HVLS fans providing evaporative cooling allows for higher AC set points, reducing energy costs. Finally, the fourth quadrant of the data shows the state of the warehouse upon activation of the HVLS fans in forward mode. Here the thermal gradient in the space can be seen to have been reduced to less than a degree difference between ceiling and floor.

Rupp Advantage

HVLS fans typically feature 8-12 smooth fan blades with curved winglets at the ends. This style of HVLS fan typically has a stall angle of 8 degrees. In contrast, Rupp uses Tubercule technology that features stall angles of up to 22 degrees. This allows a much greater angle of attack for each fan blade, moving more air with only 5 blades. Rupp's tubercule technology also reduces spanwise airflow (airflow moving down the length of the fan blade) and eliminates tip stalling, reducing fan noise and further increasing airflow per blade.