

Thermal~Flow

The Total Concept Energy Conservation Company

Evaporative Sub-Cooling A/C and Refrigeration

All roof mounted HVAC and refrigeration equipment suffers from extreme heat in the South and West. Roof temperatures usually run at least 10 deg. higher than ambient. At peak summer temperatures, refrigerated cases struggle to maintain proper temperatures, and utility costs and equipment failures rise.

Historically the only cost effective way to use evaporative technology has been to use a pre-cooler device that uses a wetted pad commonly used in swamp coolers. This method is indirect in that the wet pad cools the air then the air is drawn in to the condensing coil. The wet pads require cleaning and replacement and can not be fitted to many existing condensers.

ThermalFlow introduces a purpose built evaporative sub-cooler designed using industrial duty components. The modular design is small, light weight, and is available with up to six refrigerant circuits as a sub-cooler. This smaller design is built for the A/C and refrigeration market. The leaving refrigerant lines are routed to the evaporative sub-cooler and then back to the evaporator in the store. This machine can approach the wet bulb by ten degrees thus allowing for up to a 35 deg. F. drop in the liquid refrigerant temperature resulting in a 20 to 30% capacity improvement as well as lower operating pressures further driving down operating cost and compressor stress.



This product is a down sized version of our larger evaporative condenser line. This can connect up to six different refrigerated cases or A/C units, providing sub-cooling for all. Water is sprayed over the tube bundle and the fan draws air up and through the tube bundle to drive the liquid refrigerant temperature down to the mid 70 deg. F. range. The industrial design is well proven - we have similar units that have been in service for over 18 years.