

### SMARTD Chiller Installed at University of La Verne

#### Case Study: University

**Location:** Southern California

**Application:** Air Conditioning

#### Benefits of SMARTD:

**Duty:** Low Profile Design – 260 tons

**Model:** SMARTD WA092.3

- Low Profile Custom Design
- Improved Energy Efficiency
- Reduced Maintenance Costs
- Reduced Rigging Costs
- Improved Reliability
- Lowest Cost of Ownership

Access and installation inside a tight space were key factors that could not be isolated from the main factors of energy efficiency and least maintenance. The project was driven by utility rebates and lowest total cost of ownership for the University. Certainly there are chillers that provide lower capital cost, but they inherently cost much more to operate and maintain.

**Access** – SMARTD was able to provide industry best energy efficiency in a low profile design. The chiller was shipped in a “knocked -down” state, with separate skids for each heat exchanger, the compressors and electrical panel assembly. This greatly reduced rigging costs and provided the low height chiller to be installed in the equipment room and not have to re-route existing piping. Also, SMARTD was the only manufacturer with the flexibility to provide custom originated connections.

**Energy** – There were other competitive VFD chillers considered that had very good energy efficiency values when brand new, but when other factors such as limitations on reducing head pressure and the presence of oil that affects annual and long term cost of



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ownership, and the insulating effect of oil on heat exchanger surfaces, demonstrated that long term IPLV values could not be maintained and operational costs would certainly be higher. Additionally, the patented SMARTD adaptive logic compressor staging system that works on power relationships and not on traditional bypass of percent demand, demonstrated savings beyond IPLV. Energy efficiency was also enhanced by our ability to provide a three-pass evaporator and a two pass condenser.

**Annual Maintenance** – Was reduced to tube-cleaning, periodic electrical checks and ten-year capacitor replacements. There are no bearings to inspect every 8-10 years and no expensive compressor rebuild cycle. A reduced expense service contract was required.

**Reliability** – Because of the oil-free design and DC drive system, the occurrence of acid formation common to lubricated AC drive systems is eliminated, enabling compressors on one circuit and without the risk associated with traditional chillers.



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