Chiltrix Air-To-Water Heat Pump Manufacturer Overview

The Chiltrix air to water heat pump system (also known as a hydronic heat pump or a reverse-cycle chiller) is an advanced heating and cooling system available in modules to create systems of various sizes. Each CX35 module delivers ~24,000 BTU/h cooling with heating rated at ~40,000 BTU/h. Each CX50 module delivers ~41,000 BTU/h cooling with heating rated at ~56,000 BTU/h. Our EVI Modules such as CX65 deliver ~45,000 BTU/h cooling with heating rated at ~66,000 BTU/h. While most applications only require a single module system, they can be combined, in any combination, for up to 135,000 BTU/h cooling (11 tons) and 198,000 BTU/h heating (16.5 tons).

Following are some of the key features of the Chiltrix air to water heat pumps:

Record setting efficiency. The Chiltrix system is designed for maximum efficiency, and the three current models hold world's-record efficiency ratings, holding the top three positions (1st, 2nd. 3rd) among all officially certified models.

Flexibility. Heating, cooling, domestic water heating, use any or all in the same system. The Chiltrix heat pumps are compatible with various indoor heating and/or cooling options such as (ductless) room fan coils, ducted forced air systems, radiant heating (or cooling), and can produce domestic hot water. A combination of any, or all, of the above methods may be used within the same application. Note that Chiltrix qualifies as a "cold-climate" heat pump with outstanding heating efficiency and this not only translates into exceptional heating, but Chiltrix also holds the world's record among all US Department of Energy certified domestic water heating system with an official UEF of up to 4.95.

Installation. The Chiltrix outdoor equipment connects to the selected indoor equipment using flexible insulated PEX water lines. All of the refrigeration components – compressor, evaporator, condenser etc. - are self-contained in the outdoor unit. This makes it possible to keep all of the refrigerant outside of the building envelope. No refrigeration license is needed, most installations (unless there is to be ductwork) require only plumbing and electrical skills. Systems are typically installed by a plumber or in some situations, an HVAC technician. DIY options exist for the professional-level handyman homeowner.

Best of breed components. The Chiltrix heat pumps use the finest components available: DC Inverter scroll compressor from Mitsubishi, Panasonic DC fan, Wilo & Grundfos DC variable speed internal pumps, valves from Emerson and Danfoss, heat exchangers from SWEP and MultiStack, just to name a few. Chiltrix tanks are all-stainless steel, with our domestic water tanks being constructed of 2205 Duplex stainless, an unusually high-grade of stainless steel with corrosion resistance approaching that of titanium.

Variable capacity control. The Chiltrix heat pumps exclusively use variable speed/variable capacity components such that a heat pump can match itself to the load, and then continuously adjust its capacity as the heating or cooling load changes, much like the way a cruise control works in an automobile. Controls are exceedingly simple and accurate – the heat pump monitors leaving and returning fluid (water or glycol mix) temperatures, along with the flow rate, to always know the BTU load and set its capacity to match, providing higher efficiency and avoiding on-off cycling.

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Dynamic humidity control. All Chiltrix units include our exclusive Psychrologix dynamic humidity control, a patented technology that allows the system to optimize itself in real time in response to high, low, or variable humidity conditions. Officially rated at IPLV EER up to 22.8, this efficiency can adjust as high as EER 35 or higher when dynamic humidity control is active.

Dynamic integrated backup heat. An integrated and automatic backup heating system is available for customers in cold climates, for those days that a heat pump may not keep up with the full heating load. The exclusive and patented V18 dynamically variable heater uses the Chiltrix units load-aware capacity controls to understand the precise BTU/h of any heating shortfall and uses SSR technology to improve efficiency by dynamically providing only the exact amount of extra heat needed, at the moment, with 100 power-steps between off and full-on, and with a recalculation every six seconds.

Dynamic Onboard Outdoor Reset Control. Allows the system to dynamically reset its operating temperature in heating mode based on outdoor temperature. A highly customizable reset curve is user-defined and can be customized for the specific application.

Solar options. The Chiltrix system is compatible with solar in two ways, use either or both. It can be combined with solar thermal collectors to further increase heating and/or water heating savings. And of course, combining a Chiltrix unit with today's low-cost PV (Photovoltaic Solar Panels) creates the ability to offset most or even all of the annual heating, cooling, and water heating energy requirements. The ultra-low power consumption and low-amp gentle startup are ideal for inverters both on-grid and off-grid.

Anti-corrosion. All Chiltrix units are built to last in a coastal environment and employ a special "SeaSpray" anti-corrosion technology to resist salts, acids, and harmful pollutants in the air.

System design. Get the design right, and installation is easy. The design is the tough part, let is do it, or at least help. Chiltrix is highly expert at air to water application engineering and system design, and will support you and your installer every step of the way.

Support. Chiltrix heat pumps use OTS (off the shelf) components (top shelf only) and are serviceable by any licensed HVAC contractor in the rare event of trouble. Chiltrix also maintains a complete spare parts depot and has a staff of competent engineers and technical support personnel ready to assist with any issues. We don't just sell heat pumps, we design, build, and support them.

Accessories. Depending on the application, BOS (balance of system) items that might be needed include a range of indoor ducted air handlers, ductless room fan coil units from ¼ ton to 1-ton, hot water tanks, buffer tanks, booster pumps, etc. Every system is different. Once we have a design, we can ship a virtually complete system to you.

Chiltrix Home Page
Documents Page (Example designs, price list, manuals, specifications, etc.)
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