

In-Row Chilled Water Heat Exchange Unit (HXU)

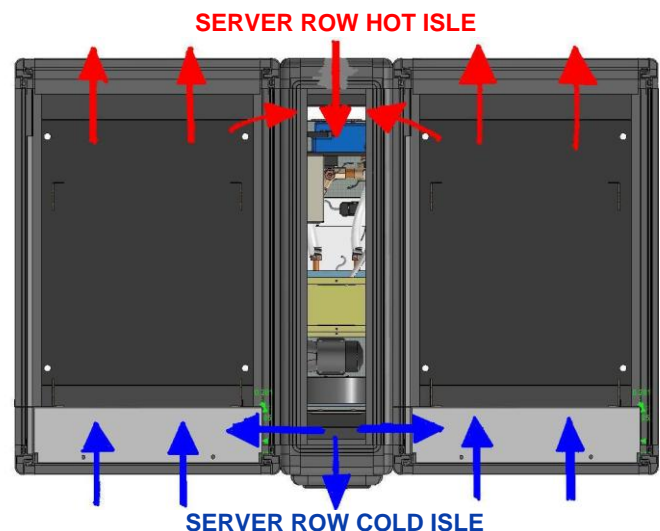


The Martin Enclosures' HXU is designed as an integrated, In-Row solution to removing server generated heat from a typical IT Server Room environment using a chilled water supply. It is configured in the same style and size enclosures as Martin's Server and Equipment Cabinets, and Power Distribution Enclosures (PDE's)

THE MARTIN HXU IS AVAILABLE IN THREE (3) CONFIGURATIONS:

- The In-Row open loop configuration incorporates all of the controls, display, monitoring devices, heat exchange coil and plumbing into each HXU Enclosure which is located between server cabinets in the row, and optionally on each end. Each unit operates independently. The hot air is collected from the "hot aisle", pulled thru the heat change coil, and the cooled air exhausted into the "cold aisle".
- The In-Row closed loop configuration incorporates the same features as above except the front and rear doors are solid. The hot air is collected directly from the rear of the server cabinets, pulled thru the coils, and the cooled air directly exhausted to the fronts of the adjacent server cabinets.
- The optimal solution is to incorporate both airflow solutions in the same configuration so that the hot air is collected from both the hot aisle and directly from the rear of the servers, and the cold air exhausted both into the cold aisle as well as directly to the fronts of the adjacent servers.

A controlled supply of chilled water is provided to each HXU, passing thru the heat exchange coils where it collects heat from the rear (hot aisle) and the rear of the adjacent server cabinets, and exits the enclosure and back to the chiller supply. The front mounted fans pull the heated air from the rear, thru the heat exchanger coils where it's cooled. The cooled air then exhausts from the front (cold aisle) and sides, passing into the front of the adjacent server cabinets.



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STAND ALONE HXU SYSTEM FEATURES

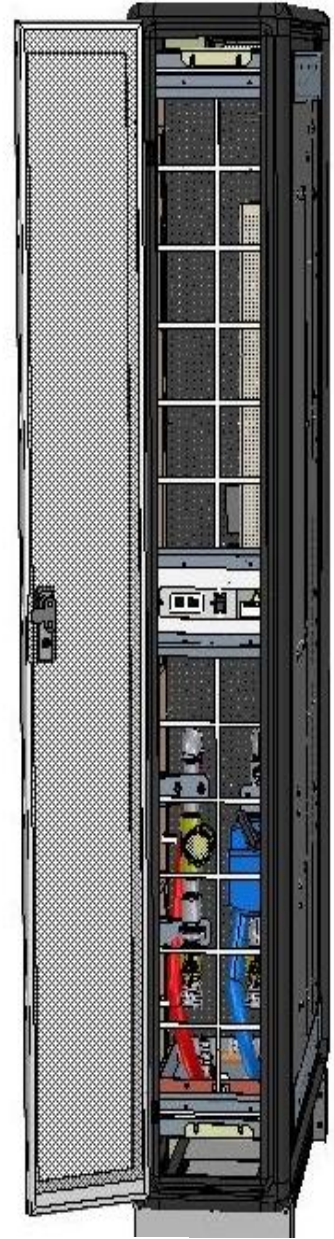
- Nominal 20,000 watt heat removal per HXU
- PLC controls with color touchscreen display
- Ethernet remote interface
- User settable alarms for temperature, humidity, coolant flow, condensation, airflow
- (5) Individually 'hot' replaceable exhaust fans, 115vac
- User controllable fan speed
- Inlet and outlet air temperature monitoring
- Water flow monitoring
- 2-way motorized valve for water flow control
- Inlet and outlet water temp monitoring
- Outlet side humidity sensing
- Washable rear door air filter
- HXU to be joined to adjacent enclosures using JK1000EX joining kits provided
- 1" NPTF coolant fittings provided at lower rear (optional top input available)
- Condensate pan and condensate pump below coil area
- Sensors at bottom for moisture detection and pump activation

OPTIONAL FEATURES

- Top coolant entry and exit fittings (bottom is standard)
- Automatic transfer switch for dual power input

PERFORMANCE / OPERATING PARAMETERS

- Nominal heat load: 20,000 watts based on:
- 6.4 GPM coolant flow 6.4 GPM
- Inlet water temp: 48F degrees
- Water pressure drop: ~12 PSIG
- Airflow: 2800 CFM total
- Inlet air temp: 95F degrees
- Outlet air temp: 72F degrees
- Operates on a single 115V 20A circuit



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Pressure Drop and Q/ITD vs. Flow Rate

