

CANNON COOL: WITHIN ROW COOLING (WIRC) UNITS

Cannon Water & DX Cooling solutions work on the air to water/DX Gas heat exchanger principle:

- Warm air from a cabinet, room or aisle is forced through a heat exchanger fan coil by high efficiency fans.
- The heat exchanger has circulating chilled water/DX Gas at between 7° and 20°C within it's coil, the chilled water is supplied by an external water chiller(s) (supplied separately).
- The heat in the warm air will naturally dissipate into the fins of the WIRC coil as they are colder than the air, by this process the heat is "exchanged" with the cold water/DX Gas circulating within the coil.
- The resulting cold air is carried out of the coil and returned via forced air cooling fans into the cold aisle or cabinet.
- The water/DX Gas that has been warmed by the heat exchanger coil is returned to the main system chiller loop through a flow control valve (optional automatic).
- Performance of the system is dependant on many climatic and environmental conditions including:
 - The Computer room being be sealed from outside heat sources and fresh air minimised within reason.
 - Any open spaces to the sides of the 19-inch racks should be blanked and all wiring taken to the sides of equipment to keep the airways to and from the equipment fans open.
 - The equipment within the the cabinet rack spaces should have it's airflow maximised.
 - All unused rack space should be blanked off.

Cannon computer rack cabinet/aisle water cooling systems are not traditional air conditioners and they do not regulate humidity. When the humidity level is high i.e. within humid atmospheres, the WIRC unit(s) will remove water vapour as condensate. In this instance a condensate drain should be run to a normal gravity drain sump or an optional condensate pump may be fitted as required.

In some situations the room humidity may be too low, and static electricity may cause a hazard to persons and equipment. The climate inside a data centre should meet the standards set by ASHRAE.

Cannon equipment is designed and built to comply with BS EN60950 and the low voltage directive/SELV where appropriate. Any installations must meet local building and electrical supply regulations where applicable.



DESCRIPTION	PART CODE
WITHIN ROW COOLING UNIT (WIRC) 42U X 200W X 1000D 25KW	WIRC42209925KW
WITHIN ROW COOLING UNIT (WIRC) 42U X 200W X 1000D 30KW	WIRC42209930KW
WITHIN ROW COOLING UNIT (WIRC) 42U X 200W X 1200D 10KW	WIRC42201210KW
WITHIN ROW COOLING UNIT (WIRC) 42U X 200W X 1200D 30KW	WIRC42201230KW
WITHIN ROW DX COOLING UNIT (WIRC) 42U X 200W X 1200D 30KW	WIRCDX42209925KW
WITHIN ROW COOLING UNIT (WIRC) 42U X 300W X 1200D 30KW	WIRC42309930KW

Size conversions: 1U = 44.45mm = 1 3/4" 600mm = 24" 700mm = 28" 800mm = 32" 1kg = 2.2lbs

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CANNON WIRC CONTROL MODULE

The integrated monitoring system for Cannon With-in-Row (WIRC) cooling unit.

Specifications

- Controlling up-to 6 PWM, Low noise, high capacity radial blower fans 3000cfm (5100 m³/h) total airflow.
- Varies the speed of the fans and optionally the water flow through the system dependent on heat load, this ensures optimal conditions and maximum cooling efficiency.
- 16 x temperature sensor inputs, 4 each side of the heat exchanger, 4 cooling medium and 4 customer configured all viewable on the WIRC display.
- 1 x humidity sensor input with remote monitoring via Cannon Data Centre Manager and SNMP.
- 4 x dry alarm relay outputs (1A @ 30Vdc).
- Over temperature alarms on cabinet Highline display or via Cannon Data Centre Manager and SNMP.
- Fan & Sensor fail alarms on cabinet or Cannon Data Centre Manager and SNMP.
- Class II SELV Power isolation.

CANNON VARIABLE COOLING FAN UNIT

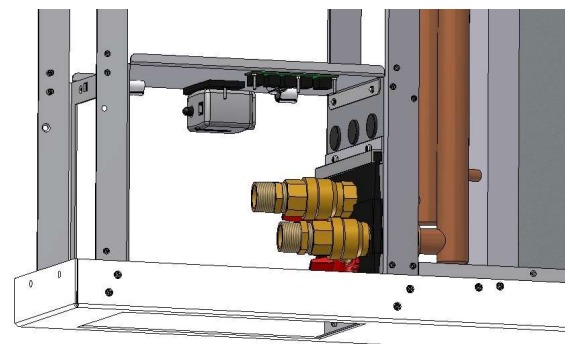
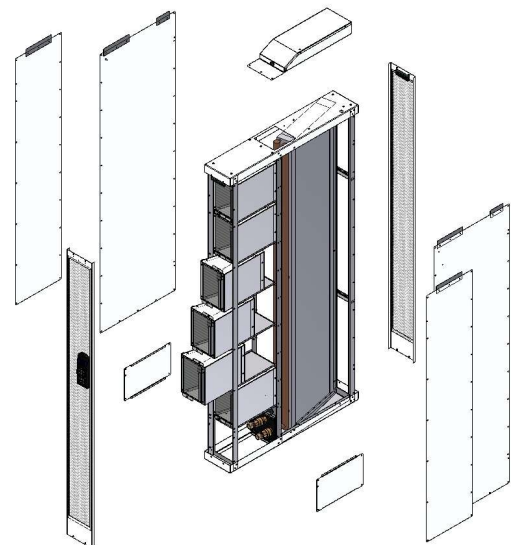
Specifications

- 6/3 Fans in each WithIn Row Cooling Unit.
- Hot Swappable 48v DC PWM Fan Units.
- Soft Start: The motor is fitted with a soft start feature to prevent current surges being drawn from the power supply.
- Variable Speed: The fan is fitted with a control circuit which varies the speed of the motor dependant upon temperature.
- Over-current & Lock-rotor protection: The motor is designed to self protect in the event of an over-current condition which might cause damage.
- Low Noise Radial blower fan system noise level at normal running conditions are 70db 'A'.

WATER CONNECTION

Specifications

- 1-inch full bore shut valve as standard on flow & return
- Customer supply: Return connection 1" BSP manual flow control valve full bore & meter. Flow connection 1" bspm shut valve full bore
- Condensate Pump max flow rate 20 l/h, max discharge head 6m supplied with 3m 11mm O.D. 8mm I.D. PVC tube
- Optional flexible hose 3m st/st braided 1-inch (32mm O.D.) full bore with 1-inch BSP for connection to chilled water supply flow and return.
- Optional: Automatic flow control/by-pass valve & leak detection/shut down.





CANNON RD20 REAR DOOR COOLER

- Intelligent Rear Door Chiller Heat Exchange Unit
- Energy Efficient Savings.
- Lower CAPEX due to increased compute densities, containment in a cab therefore no additional aisle containment.
- Possible to Share Unit between cabinets.
- Excellent PUE figures of 1.09 to 1.05 at Full load
- Intelligent monitoring reduces hot spots within hardware, extending equipment lifespan.
- Could be retrofitted onto existing cabs.

Overview

- RD20 is installed to the back of an IEC 297-3 and EIA STD 310 compliant cabinet enclosure.
- The unit ensures optimum thermal and energy performance by removing the heat generated by the active equipment, preventing hot exhaust air to enter the data hall.
- Ambient air is drawn into the cabinet by active equipment, the how air produced passes over the heat exchanger unit and speed controlled fans pull air.
- Equipment heat is rejected into the chiller unit coolant and chilled air passed back into the cabinet.

IN-RACK COOLING CHILLER UNIT

- The In-Rack Cooling Unit is mounted within the base of a 19" rack mount cabinet and provides efficient internal cooling of the hot exhaust air produced by active equipment.
- Coolant is fed into the sealed heat exchange unit and intelligent speed controlled fan(s) pressurise the air within the cabinet allowing hot air to pass over the cooling coils and cool air is forced back into the cabinet.

