

Eaton-Williams Cooling IT



SERVERCool[™]

Server & Data Rack Cooling

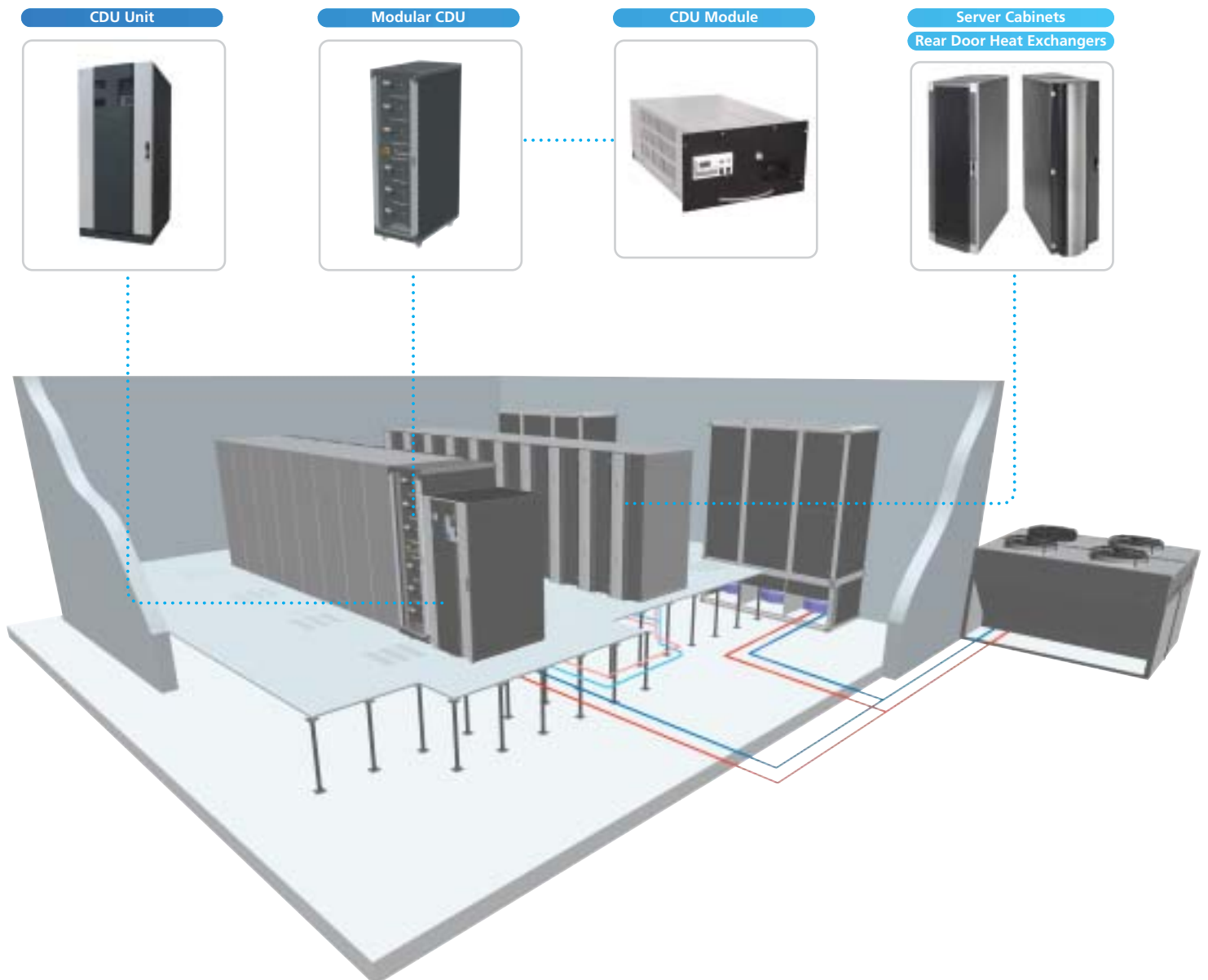


Eaton-Williams Cooling IT

In 1956 the Long Range Weapons Establishment's computer room in Australia, used Eaton-Williams cooling equipment.

Over the last 50 years Eaton-Williams has developed sophisticated and reliable cooling solutions for major telecoms companies, BT, Orange, Cable & Wireless, Belgacom, in addition to close control cooling for control rooms, computer suites and data centres.

EWPC (Eaton-Williams Process Cooling) now offer a one stop solution, for the increasing headache of removing the heat from their server racks, together with the EW group's range of CRAC units and ancillary cooling equipment, all supported by an international Service & Maintenance team.



CDU (Cooling Distribution Unit)

CDU Unit

The CDU (Cooling Distribution Unit) has been designed to provide close controlled cooling water for up to 6 data rack 'Rear Door Heat Exchangers' (referred to as RDHx's), with a total maximum cooling capacity of 120kW for the CDU120 model or up to 150kW for the CDU150 model.

The process side water (referred to as the 'Secondary Circuit') is a sealed pressurised system with the heat extracted from the rear door heat exchangers being rejected to a raw chilled water circuit via a stainless steel plate heat exchanger.

The chilled water can either be part of the Building Services Chilled Water system or supplied from a dedicated chiller. This chilled water supply (referred to as the 'Primary Circuit') is filtered to 300µ using a filtration unit fitted internally to the cabinet.

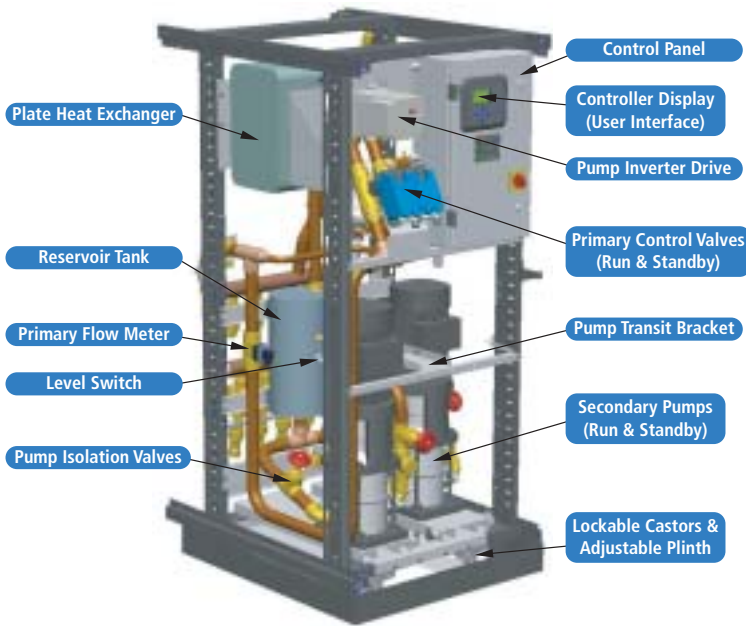


Controller

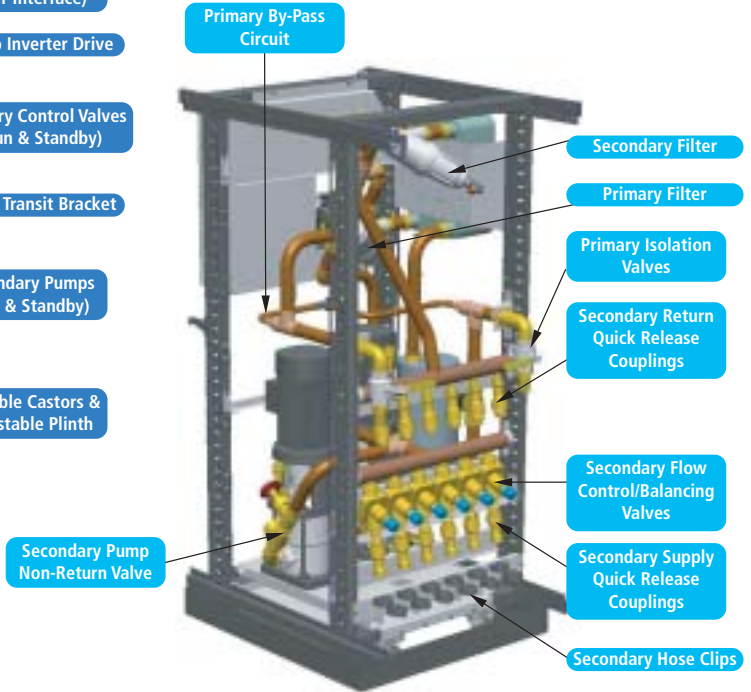
The CDU controller has been designed to control the supply of cooling water to up to 6 RDHx's in unattended data centres. Cooling water is supplied and controlled to a predefined set point (above dew-point) at a controlled flow rate.

CDU Features

FRONT



REAR



CDU120/150 Technical Data

Dimensions

Width	800mm
Height	36U – 1825mm (including castors)
Depth	1085mm
Weight	349kg (dry) 391kg (wet)

Colour **RAL7016 as standard for external panels**

The CDU cabinet has been designed to be manoeuvred into position using the pre-fitted castors. Once in position, the corner plinths can be fitted and the unit levelled with the jacking feet. The castors can then be removed if desired or left in position.

Pipe connections

Secondary circuit connections	¾" Hose Barbs via (ISO-B) leak-free couplings
Primary water connections	1 ½" Hose Barbs or 1 ½" (42mm) copper tails for solder connection

Electrical connection

Power supply	380 to 480v 50/60Hz 3-phase + earth Option of 200 to 230v 60Hz 3-phase + earth
Power consumption	5.3kVA max (at 400v)
Recommended customer protection	10A HRC fuses
Cable gland size	25mm
Control circuit	24v 50/60Hz for controls

3 pole internal door interlocking isolator.

Water volume capacity

Cabinet internal secondary circuit capacity	32 litres approx.
Cabinet internal primary circuit capacity	10 litres approx.
Remotely mounted door heat exchanger	2 litres approx. (each)
Capacity per metre of ¾" bore hose	0.28 litres approx.

Noise

Sound power level at 3m	Less than 55dB(A)
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Secondary circuit

Cooling capacity	CDU120 – 120kW (20kW per RDHx) CDU150 – 150kW (25kW per RDHx)
Pump capacity	240 l/m max. flow (40 l/m per RDHx) at 2.4 Bar max. working pressure differential external to the cabinet over supply & return manifolds
Cooling fluid	Distilled/deionised water with inhibitor/biocide

Primary circuit

Cooling fluid	Plain water with up to 30% glycol at temperatures between 5°C and 10°C
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Control system

Controller	Eaton-Williams' own design of controller with graphical interface
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Approvals: UL Recognised CE Marked

Server Cabinets & Rear Door Heat Exchangers (RDHx)

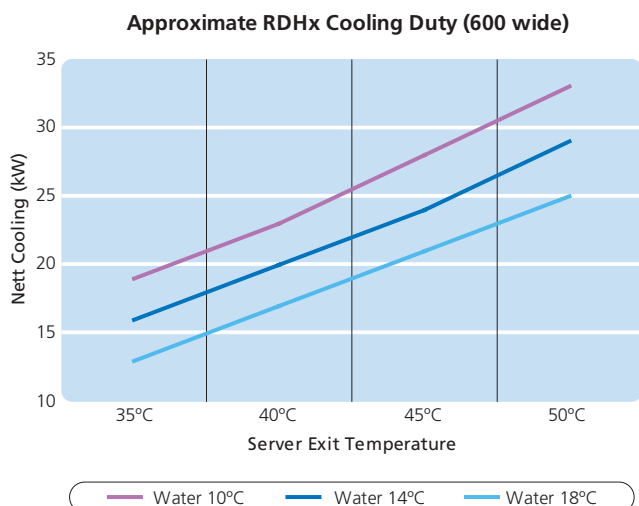
Server Cabinets & Rear Door Heat Exchangers

Server Cabinets and Rear Door Heat Exchangers (RDHx) are designed to provide an environment for high heat density servers and IT equipment and remove up to 30kW of heat at source rejecting it to water rather than the room.



Technical Data

The CDU provides condense free, above dew-point controlled water to the RDHx, via a secondary circuit. 6 integral variable speed fans provide full cabinet ventilation, with 80% front door venting. Fan fail detection with 'hot swap' capability.



Dimensions

Width	600mm (20kW) nominal	800mm (30kW) nominal
Height	42U / 48U	
Depth	1000mm / 1200mm	
Weight	1,000kg (full weight loading)	
Water volume	2 litres	
Colour	RAL7016 as standard for external panels	

Pipe connections

Secondary circuit connections **¾" BSP hose couplings**

Electrical connection

Power supply **230v 50/60Hz 1-phase or DC as option**

CDU Module

CDU Module

The CDU Module has been designed to provide close controlled cooling water for one data rack rear door heat exchanger or two racks with a total maximum cooling capacity of 20kW.

The process side water (referred to as the 'Secondary Circuit') is a sealed pressurised system with the heat extracted from the rear door heat exchanger being rejected to a raw chilled water circuit.

The chilled water can either be part of the Building Services Chilled Water system or from a dedicated chiller. This chilled water supply (referred to as the 'Primary Circuit') should be filtered to 300µ using a filtration unit (fitted by others).



CDU Module Controller

The CDU Module controller has been designed to control the supply of cooling water to one or two rear door heat exchangers in unattended data centres. Cooling water is supplied and controlled to a predefined set point at a constant flow rate.

The controller consists of a LCD display and four buttons which provide a means of navigating through the data lists and changing various parameters.

Monitoring Functions

- ⇒ Secondary and primary temperatures
- ⇒ Secondary flow and pressure
- ⇒ Pump run hours
- ⇒ Room temperature and humidity
- ⇒ Alarm monitoring and reporting
- ⇒ Three way valve position



Modular CDU System

Modular CDU System

A dedicated cabinet to house up to 6 CDU Modules to enable initial install to be completed allowing the perfect upgrade path. The cabinet houses power distribution and chilled water connectivity to the 6 CDU Modules via manifold and couplings. Individual CDU Modules can then be simply plugged in as the data centre expands or heat loads increase. Alarms, room temperature and humidity data are managed through the central power distribution system giving one connection point for power and alarms.



CDU Module & Modular Rack Technical Data

CDU Module

Dimensions

Width	483mm (19" rack mounting)
Height	6U – 267mm
Depth	730mm (including quick release couplings)
Weight	46kg (dry) 51kg (wet)
Colour	RAL7016 as standard for external panels

The CDU Module has been designed to be rack mounted in a standard 19" x 1000mm deep rack. Note: suitable mounting angles of a shelf should be installed capable of taking the above weight.

Pipe connections

Secondary circuit connections	¾" ISO-B quick release couplings
Primary water connections	¾" BSP flat face connections

Electrical connection

Power supply	230v 50Hz 1-phase or 120v 60Hz 1-phase as an option
Power consumption	0.7kVA max
Recommended customer protection	4A HRC fuses
Power connection	2M flying lead
Control circuit	24v 50/60Hz for controls

Water volume capacity

Unit internal secondary circuit capacity	3.5 litres approx.
Unit internal primary circuit capacity	1.5 litres approx.
Remotely mounted door heat exchanger	2 litres approx.
Capacity per metre of ¾" bore hose	0.28 litres approx.

Noise

Sound power level at 3m	Less than 55dBA
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Secondary circuit

Cooling capacity	20kW max
Pump capacity	40 l/m design flow 2.5 Bar max. working pressure at design duty

Modular Rack

Dimensions

Width	600mm
Height	42U
Depth	1000mm
Weight	85kg (without modules)

Electrical connection

Power connection	400v 50Hz 3-phase or 208v 60Hz 3-phase as an option
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Group Products & Services



Server Cabinets & Rear Door Heat Exchangers (RDHx)

Powerful cooling capacity, up to 30kW heat removed at source and rejected to water, not the room. Condense free operation using dew point controlled water from the CDU. 6 'hot swap' fans – variable speed. 80% front door venting. 1,000kg weight loading and full range of accessories. Easily installed via leak free quick release 3/4" couplings and hose sets.

600mm wide – 20kW cooling.
800mm wide – 30kW cooling.



CDU (Cooling Distribution Unit)

Provides cooling water for up to 6 rear door heat exchangers. Cooling capacities of 100, 120 or 150kW with full run/standby capability (N+1). Internal manifold with leak free quick release couplings for easy installation and connection to the rear door heat exchangers via 3/4" hose sets. Chilled water connections (42mm / 1 1/2") via top or bottom. Dew point temperature control of cooling water, internal CW filtration. Auto fill and bleed of coolant. Full alarm monitoring and connectivity.



CDU Module

The 20kW CDU Module is a 6u rack mountable, self contained cooling module capable of providing closely controlled cooling water above dew point to one or two rear door heat exchangers. Leak free, quick release couplings enable rapid install and connection to the rear door heat exchanger via 3/4" hose sets. Features include dew point temperature control for condense free operation, auto fill and bleed of coolant, full alarm monitoring and connectivity.



Modular CDU System

A dedicated cabinet to house up to 6 CDU Modules to enable initial install to be completed allowing the perfect upgrade path. The cabinet houses power distribution and chilled water connectivity to the 6 CDU Modules via manifold and couplings. Individual CDU Modules can then be simply plugged in as the data centre expands or heat loads increase. Alarms, room temperature and humidity data are managed through the central power distribution system giving one connection point for power and alarms.



DRU (CRAC) Unit

DRU Data Room air conditioning units are designed for high density load areas where a large cooling duty is required, from a compact footprint, but without compromising the critical application of data centre cooling.

80/100/120kW cooling capacities.

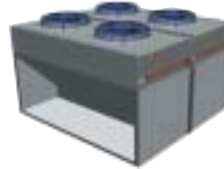
Available in chilled water, DX, DX with water cooled condenser and glycol free cooling configurations. A full range of options and ancillaries are available including inbuilt humidifier for room humidity control.



IPAC (CRAC) Unit

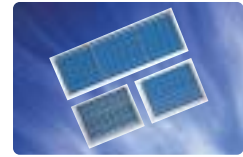
IPAC floor standing air conditioning units are available in chilled water or DX, cooling only configuration.

15 - 80kW cooling capacities available in various configurations including up flow or down flow air path, chilled water or DX cooling. A full range of options and ancillaries are available including inbuilt humidifier for room humidity control.



Chillers

Energy efficient chillers up to a capacity of 600kW with the full run/standby (N+1) capability can be offered. These can also be fitted with free cooling capability and qualify for ECA (Enhanced Capital Allowance) under the Carbon Trust Scheme.



Grilles & Diffusers

Our extensive range of grilles and diffusers are available in a wide range of shapes and sizes and include floor grilles for server/data centres.



Service & Maintenance

All types of HVAC heating, ventilating and air conditioning equipment are supported by our national network of mobile engineers or residential engineers for optimum operating efficiency.



M&E Services

Project design, installation and commissioning.
Refurbishment. CFC and HCFC recovery and substitution.



Humidification

Specialist manufacturers of humidifiers and steam generation products.



Air Handling

Eaton-Williams design and manufacture air handling plant for commercial and industrial applications. Applications include hospitals, supermarket chains, leisure stadiums, pharmaceutical buildings and office complexes with uniquely designed solutions to suit each project.



Eaton-Williams Process Cooling

Fircroft Way, Edenbridge
Kent TN8 6EZ, England
Tel: +44 (0)1732 866055
Fax: +44 (0)1732 865658
Email: process.cooling@eaton-williams.com
www.eaton-williams.com

