

Overview

Motivair Liquid Cooled Doors

Motivair Liquid Cooled Doors, or Rear Door Heat Exchangers (RDHX) is a liquid to air heat exchanger cooling system that removes the high levels of heat generated by today's servers, mass storage, and core networking hardware. It is mounted directly to the rear panel of HPE racks. RDHX are compatible with 42U or 48U racks with up to 75KW of IT capacity when used under certain load and site conditions.

RDHX are designed to complement any new or existing datacenter by enabling computing power growth without adding to the heat load in the datacenter.

Air flow of RDHX fully supports industry-standard front-to-back cooling designs and standard server dimensions. Hot air exiting the rear of the servers is neutralized as the air is cooled down via the coils in the RDHX. It can connect directly to facility water feed or to a CDU depending on the dewpoint temperature of the datacenter room. Top or bottom liquid feed options are supported. Mural graphics on the Doors are also supported. RDHX can also be deployed with Apollo Direct Liquid Cooling (DLC) to increase percentage of heat capture to water, meeting room-neutral requirements.



RDHX with 42u or 48u Rack Options

Standard Features

Key Features

General Solution

- Liquid to air heat exchanger cooling system attached to back of a standard IT rack
Hot air exhaust from the server moves through cooling coils to remove the heat

Cooling Capacity

- Up to 75KW cooling capacity per rack

Water

- Accommodates facility water temperatures 2C (4F) above maximum anticipated dew point
- Accommodates water pressure between 25 and 100 psi (172 – 689 kpa)
- For water temperatures at or below the dewpoint, a Cooling Distribution Unit (CDU) will be required to create a secondary warmer water loop to supply the doors

Efficiency

- Warm water cooling ready; support IT loads up to 75 KW at 30°C inlet water with 23 gallons per minute (GPM) and a server supply air temperature of 35°C
- As RDHX supply water temperature directly impacts the datacenter ambient temperature, 30°C inlet can result in high air temperatures for staff working nearby

Power

- Input power support for 208V / 230V / 277V (1-phase)

Flexibility

- HPE Apollo 42U or 48U racks for IT equipment are supporting shipping of fully integrated rack solutions (HPE Factory Express or Partner rack integration) as these are delivered on shock pallet
- Underfloor and overhead plumbing capabilities
- Full services offering available, including planning, deployment and maintenance

Agency Certifications

- ETL, CSA, CE Certified
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Configuration Information

Each Motivair door SKU includes

- One 2-way control valve & actuator assembly
- Valve is manufactured by Honeywell
- Valve material is brass
- 2.5cm/1" sanitary fitting on end
- Control cable is 4.9M / 16 feet long

For 42U 600mm HPE G2 Racks (Rack SKU P9K10A)

Motivair M8 42U 600mm G2 Rack 208-230V Top Feed NA Rear Door Heat Exchanger	R7N53A
Motivair M8 42U 600mm G2 Rack 208-230V Bottom Feed NA Rear Door Heat Exchanger	R7S23A
Motivair M8 42U 600mm G2 Rack 208-230V Bottom Feed EU Rear Door Heat Exchanger	R7S24A
Motivair M8 42U 600mm G2 Rack 208-230V Top Feed EU Rear Door Heat Exchanger	R7N56A
Motivair M12 42U 600mm G2 Rack 208-230V Top Feed NA Rear Door Heat Exchanger	R7N59A
Motivair M12 42U 600mm G2 Rack 208-230V Top Feed EU Rear Door Heat Exchanger	R7N62A
Motivair M12 42U 600mm G2 Rack 208-230V Bottom Feed NA Rear Door Heat Exchanger	R7S25A
Motivair M12 42U 600mm G2 Rack 208-230V Bottom Feed EU Rear Door Heat Exchanger	R7S26A
Motivair M14 42U 600mm G2 Rack 260-290V Bottom Feed NA Rear Door Heat Exchanger	R4N05A
Motivair M14 42U 600mm G2 Rack 260-290V Top Feed NA Rear Door Heat Exchanger	R4N06A
Motivair M14 42U 600mm G2 Rack 208-230V Bottom Feed Rear Door Heat Exchanger	R4M97A
Motivair M14 42U 600mm G2 Rack 208-230V Top Feed Rear Door Heat Exchanger	R4M98A

For 42U 800mm HPE G2 Racks (Rack SKU P9K48A)

Motivair M8 42U 800mm G2 Rack 208-230V Bottom Feed NA Rear Door Heat Exchanger	R7N54A
Motivair M8 42U 800mm G2 Rack 208-230V Top Feed NA Rear Door Heat Exchanger	R7N55A
Motivair M8 42U 800mm G2 Rack 208-230V Bottom Feed EU Rear Door Heat Exchanger	R7N57A
Motivair M8 42U 800mm G2 Rack 208-230V Top Feed EU Rear Door Heat Exchanger	R7N58A
Motivair M12 42U 800mm G2 Rack 208-230V Bottom Feed NA Rear Door Heat Exchanger	R7N60A
Motivair M12 42U 800mm G2 Rack 208-230V Top Feed NA Rear Door Heat Exchanger	R7N61A
Motivair M12 42U 800mm G2 Rack 208-230V Bottom Feed EU Rear Door Heat Exchanger	R7N63A
Motivair M12 42U 800mm G2 Rack 208-230V Top Feed EU Rear Door Heat Exchanger	R7N64A
Motivair M14 42U 800mm G2 Rack 208-230V Top Feed Rear Door Heat Exchanger	R4N00A
Motivair M14 42U 800mm G2 Rack 260-290V Bottom Feed NA Rear Door Heat Exchanger	R4N07A
Motivair M14 42U 800mm G2 Rack 260-290V Top Feed NA Rear Door Heat Exchanger	R4N08A
Motivair M14 42U 800mm G2 Rack 208-230V Bottom Feed Rear Door Heat Exchanger	R4M99A

For 48U 600mm HPE G2 Racks (Rack SKU P9K52A)

Motivair M12 48U 600mm HPE G2 Rack 208-230V Top Feed NA Rear Door Heat Exchanger	R9R27A
Motivair M12 48U 600mm HPE G2 Rack 208-230V Top Feed EU Rear Door Heat Exchanger	R9R28A
Motivair M12 48U 600mm HPE G2 Rack 208-230V Bottom Feed NA Rear Door Heat Exchanger	R9R29A
Motivair M12 48U 600mm HPE G2 Rack 208-230V Bottom Feed EU Rear Door Heat Exchanger	R9R30A
Motivair M12 48U 600mm HPE G2 Rack 260-290V Top Feed NA Rear Door Heat Exchanger	R9R31A
Motivair M12 48U 600mm HPE G2 Rack 260-290V Bottom Feed NA Rear Door Heat Exchanger	R9R32A
Motivair M14 48U 600mm HPE G2 Rack 208-230V Top Feed Rear Door Heat Exchanger	R9R33A
Motivair M14 48U 600mm HPE G2 Rack 208-230V Bottom Feed Rear Door Heat Exchanger	R9R34A
Motivair M14 48U 600mm HPE G2 Rack 260-290V Top Feed NA Rear Door Heat Exchanger	R9R35A
Motivair M14 48U 600mm HPE G2 Rack 260-290V Bottom Feed NA Rear Door Heat Exchanger	R9R36A



Configuration Information

For 48U 800mm HPE G2 Racks (Rack SKU P9K58A)

Motivair M8 48U 800mm G2 Rack 208-230V Top Feed NA Rear Door Heat Exchanger	R8D54A
Motivair M8 48U 800mm G2 Rack 208-230V Bottom Feed NA Rear Door Heat Exchanger	R8D55A
Motivair M8 48U 800mm G2 Rack 208-230V Top Feed EU Rear Door Heat Exchanger	R8D56A
Motivair M8 48U 800mm G2 Rack 208-230V Bottom Feed EU Rear Door Heat Exchanger	R8D57A
Motivair M12 48U 800mm HPE G2 Rack 208-230V Top Feed NA Rear Door Heat Exchanger	R9R37A
Motivair M12 48U 800mm HPE G2 Rack 208-230V Top Feed EU Rear Door Heat Exchanger	R9R38A
Motivair M12 48U 800mm HPE G2 Rack 208-230V Bottom Feed NA Rear Door Heat Exchanger	R9R39A
Motivair M12 48U 800mm HPE G2 Rack 208-230V Bottom Feed EU Rear Door Heat Exchanger	R9R40A
Motivair M12 48U 800mm HPE G2 Rack 260-290V Top Feed NA Rear Door Heat Exchanger	R9R41A
Motivair M12 48U 800mm HPE G2 Rack 260-290V Bottom Feed NA Rear Door Heat Exchanger	R9R42A
Motivair M14 48U 800mm HPE G2 Rack 208-230V Top Feed Rear Door Heat Exchanger	R9R43A
Motivair M14 48U 800mm HPE G2 Rack 208-230V Bottom Feed Rear Door Heat Exchanger	R9R44A
Motivair M14 48U 800mm HPE G2 Rack 260-290V Top Feed NA Rear Door Heat Exchanger	R9R45A
Motivair M14 48U 800mm HPE G2 Rack 260-290V Bottom Feed NA Rear Door Heat Exchanger	R9R46A

For 42U 600mm Heavy Racks (Rack SKU R4L97A)

Motivair M8 42U 600mm Heavy Rack 208-230V Bottom Feed NA Rear Door Heat Exchanger	R4M13A
Motivair M8 42U 600mm Heavy Rack 208-230V Bottom Feed EU Rear Door Heat Exchanger	R4M12A
Motivair M12 42U 600mm Heavy Rack 208-230V Bottom Feed EU Rear Door Heat Exchanger	R4M14A
Motivair M12 42U 600mm Heavy Rack 208-230V Bottom Feed NA Rear Door Heat Exchanger	R4M15A
Motivair M14 42U 600mm Heavy Rack 208-230V Bottom Feed Rear Door Heat Exchanger	R9R26A

For 48U 600mm Heavy Racks (Rack SKU R4M95A)

Motivair M12 48U 600mm x 1300mm Heavy Rack 208-230V Bottom Feed NA Rear Door Heat Exchanger	R9B89A
Motivair M12 48U 600mm Heavy Rack 208-230V Top Feed NA Rear Door Heat Exchanger	R7S28A
Motivair M12 48U 600mm Heavy Rack 208-230V Bottom Feed EU Rear Door Heat Exchanger	R7S29A
Motivair M12 48U 600mm Heavy Rack 208-230V Top Feed EU Rear Door Heat Exchanger	R7S30A
Motivair M14 48U 600mm Heavy Rack 208-230V Bottom Feed Rear Door Heat Exchanger	R4N01A
Motivair M14 48U 600mm Heavy Rack 208-230V Top Feed Rear Door Heat Exchanger	R4N02A
Motivair M14 48U 600mm Heavy Rack 260-290V Bottom Feed NA Rear Door Heat Exchanger	R4N09A
Motivair M14 48U 600mm Heavy Rack 260-290V Top Feed NA Rear Door Heat Exchanger	R4N10A

Graphics

Graphics HPE Cray Liquid Cooled Door Build FIO Kit	R7E79A
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Hoses, Fitting, Control Extension Cable

HPE QD to TC 1.8m Hose Pair for Liquid Cooled Door	R4N58A
HPE QD to TC 2.4m Hose Pair for Liquid Cooled Door	R4N59A
HPE QD to TC 3m Hose Pair for Liquid Cooled Door	R4N60A
HPE QD to TC 3.7m Hose Pair for Liquid Cooled Door	R4N61A
HPE QD to TC 4.3m Hose Pair for Liquid Cooled Door	R4N62A
HPE Cray 3.3m Extension Cable for Motivair Doors	R8G82A

Notes:

- Hose kit is required for water connection and each hose has 1" QD on the door, TC on the facility end.
- Extension cable: extend valve actuator cable, if necessary for a site



Configuration Information

CDU for Motivair Rear Doors

HPE Cray Supercomputer Top Feed 270KW 208V Coolant Distribution Unit	R4N53A
HPE Cray Supercomputer Top Feed 270KW 460V Coolant Distribution Unit	R4N56A
HPE Cray Supercomputer Bottom Feed 270KW 575V Coolant Distribution Unit	R4N57A
HPE Cray Supercomputer 270kW 400V CDU	R9B19A
HPE Cray EX 1200kW NA CDU Rack for Rear Door Heat Exchanger	R8N96A
HPE Cray EX 1200kW EU CDU Rack for Rear Door Heat Exchanger	R8N97A

Notes:

- CDU is optional, secondary loop is needed with CDU.
 - Consult Site Engineering for CDU configuration and secondary loop.
 - 270KW CDUs include hose kit, manifold, and treated water.
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HPE Pointnext - Service and Support

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 - Save on TCO, align costs to business
 - Scale quickly, meet unpredictable demand
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<https://www.hpe.com/services/techcare>

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- A complete coverage approach -- edge to cloud
- An assigned HPE team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI driven customer experience

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Service and Support

Parts and Materials

Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.



Technical Specifications

Environment-friendly Products and Approach End-of-life Management and Recycling

Hewlett Packard Enterprise offers end-of-life **product return, trade-in, and recycling programs**, in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE Directive (2012/19/EU) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the **Hewlett Packard Enterprise web site**.

These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.



Summary of Changes

Date	Version History	Action	Description of Change
04-Apr-2022	Version 4	Changed	Overview, Standard Features and Configuration Information sections were updated.
06-Dec-2021	Version 3	Changed	Configuration Information section was updated
11-Oct-2021	Version 2	Changed	Service and Support section was updated.
02-Aug-2021	Version 1	New	New QuickSpecs



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