

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 a range 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 Direct Liquid Cooling (DLC) to increase the 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 (kW per rack)*

- M8: 5-17kW
- M12: 14-35kW
- M14: 35-55kW
- M16: 55-75kW (Only Available in 48Ux800mm)

*See RDHX Site Planning Guide for additional information and specifications

Water

- Accommodates facility water temperatures 2° C (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

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
-



Configuration Information

Each Motivair door SKU includes

- One external 2-way control valve & actuator assembly
- One external flow meter
- All cabling to connect external controls to door

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 HPE 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 G2 Rack 208-230V Top Feed NA Rear Door Heat Exchanger	R9R27A
Motivair M12 48U 600mm G2 Rack 208-230V Top Feed EU Rear Door Heat Exchanger	R9R28A
Motivair M12 48U 600mm G2 Rack 208-230V Bottom Feed NA Rear Door Heat Exchanger	R9R29A
Motivair M12 48U 600mm G2 Rack 208-230V Bottom Feed EU Rear Door Heat Exchanger	R9R30A
Motivair M12 48U 600mm G2 Rack 260-290V Top Feed NA Rear Door Heat Exchanger	R9R31A
Motivair M12 48U 600mm G2 Rack 260-290V Bottom Feed NA Rear Door Heat Exchanger	R9R32A
Motivair M14 48U 600mm G2 Rack 208-230V Top Feed Rear Door Heat Exchanger	R9R33A
Motivair M14 48U 600mm G2 Rack 208-230V Bottom Feed Rear Door Heat Exchanger	R9R34A
Motivair M14 48U 600mm G2 Rack 260-290V Top Feed NA Rear Door Heat Exchanger	R9R35A
Motivair M14 48U 600mm 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 G2 Rack 208-230V Top Feed NA Rear Door Heat Exchanger	R9R37A
Motivair M12 48U 800mm G2 Rack 208-230V Top Feed EU Rear Door Heat Exchanger	R9R38A
Motivair M12 48U 800mm G2 Rack 208-230V Bottom Feed NA Rear Door Heat Exchanger	R9R39A
Motivair M12 48U 800mm G2 Rack 208-230V Bottom Feed EU Rear Door Heat Exchanger	R9R40A
Motivair M12 48U 800mm G2 Rack 260-290V Top Feed NA Rear Door Heat Exchanger	R9R41A
Motivair M12 48U 800mm G2 Rack 260-290V Bottom Feed NA Rear Door Heat Exchanger	R9R42A
Motivair M14 48U 800mm G2 Rack 208-230V Top Feed Rear Door Heat Exchanger	R9R43A
Motivair M14 48U 800mm G2 Rack 208-230V Bottom Feed Rear Door Heat Exchanger	R9R44A
Motivair M14 48U 800mm G2 Rack 260-290V Top Feed NA Rear Door Heat Exchanger	R9R45A
Motivair M14 48U 800mm 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

For 42U 750mm Heavy Racks (available on special request)

Motivair M12 42U 750mm Heavy Rack 208-230V Bottom Feed EU Rear Door Heat Exchanger	R8D49A
Motivair M14 42U 750mm Heavy Rack 208-230V Bottom Feed Rear Door Heat Exchanger	R8F27A

For 48U 750mm Heavy Racks (available on special request)

Motivair M14 48U 750mm Heavy Rack 208-230V Bottom Feed Rear Door Heat Exchanger	R4N03A
Motivair M14 48U 750mm Heavy Rack 260-290V Bottom Feed Rear Door Heat Exchanger	R4N11A
Motivair M14 48U 750mm Heavy Rack 260-290V Top Feed Rear Door Heat Exchanger	R4N12A
Motivair M14SP 48U 750mm Heavy Rack 208-230V Bottom Feed Rear Door Heat Exchanger	R4N13A
Motivair M14SP 48U 750mm Heavy Rack 208-230V Top Feed Rear Door Heat Exchanger	R4N14A
Motivair M14SP 48U 750mm Heavy Rack 260-290V Bottom Feed Rear Door Heat Exchanger	R4N15A
Motivair M14SP 48U 750mm Heavy Rack 260-290V Top Feed Rear Door Heat Exchanger	R4N16A
Motivair M16 48U 750mm Heavy Rack 208-230V Bottom Feed Rear Door Heat Exchanger	R4M91A
Motivair M16 48U 750mm Heavy Rack 208-230V Top Feed Rear Door Heat Exchanger	R4M92A
Motivair M16 48U 750mm Heavy Rack 260-290V Bottom Feed Rear Door Heat Exchanger	R4M93A

Configuration Information

Motivair M16 48U 750mm Heavy Rack 260-290V Top Feed Rear Door Heat Exchanger R4M94A

Hose Kits for RDHX

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

USA Facility Adapter for RDHX

HPE Cray EX 25.4mm Water Hose Adapter Kit R6W44A

International Facility Adapter for RDHX (ONLY INTERNATIONAL SITES THAT REQUIRE BSPT THREAD)

HPE Cray Supercomputer 25.4mm Water Adapter BSPT Assembly SOB09A

Notes:

- Need 1 Hose Kit SKU and 1 Facility Adapter SKU per door that is on order.

USA Voltage CDU for RDHX

HPE Cray Supercomputer 3-phase 270kW 208V 60Hz 63.5mm NA Floor Coolant Distribution Unit R4N53A

HPE Cray Supercomputer 3-phase 270kW 480V 60Hz 63.5mm NA Floor Coolant Distribution Unit R4N56A

EU Voltage CDU for RDHX

HPE Cray Supercomputer 3-phase 270kW 400V 50Hz 63.5mm EU Floor Coolant Distribution Unit R9B19A

USA Facility Adapter RDHX CDU

HPE Cray EX 76.2mm Water Hose Adapter Kit R6T83A

International Facility Adapter for RDHX CDU (ONLY INTERNATIONAL SITES THAT REQUIRE BSPT THREAD)

HPE Cray Supercomputer 76.2mm Water Adapter BSPT Assembly SOB12A

Notes:

- Need 1 Facility Adapter SKU (R6T83A or SOB12A) per CDU on order.
- A CDU is required for sites that have supply water temperature at or below dew point.
- The CDUs include a primary hose kit, secondary manifold, and treated water for the secondary cooling loop to the RDHX's.
- HPE provided secondary manifold is designed for raised floor data centers. If the data center is on a concrete slab, the customer is required to provide the overhead secondary manifold that feeds from the CDU to the RDHX's.
- Consult with Site Engineering when planning to use or don't know if you will need to use a CDU.



Service and Support

HPE Services Operational services

No matter where you are in your transformation journey, you can count on HPE Services to deliver the expertise you need when, where, and how you need it. From planning to deployment, ongoing operations and beyond, our experts can help you realize your digital ambitions.

<https://www.hpe.com/services>

HPE Complete Care Service

HPE Complete Care Service is a modular, edge-to-cloud IT environment service designed to help optimize your entire IT environment and achieve agreed upon IT outcomes and business goals through a personalized experience. All delivered by an assigned team of HPE Services experts. HPE Complete Care Service provides:

- A complete coverage approach – solution support with end-to-end case resolution
- An assigned HPE support team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with direct access to HPC experts
- Digitally enabled and AI driven customer experience

<https://www.hpe.com/services/complecare>

HPE Tech Care Service

HPE Tech Care Service is the operational support service experience for HPE products. The service goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. HPE Tech Care Service delivers a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Tech Care Service is available in three response levels. Basic, which provides 9x5 business hour availability and a 2-hour response time. Essential which provides a 15-minute response time 24x7 for most enterprise level customers, and Critical which includes a 6-hour repair commitment where available and outage management response for severity 1 incidents.

<https://www.hpe.com/services/techcare>

Service and Installation SKUs

Installation SKU and Band number for RDHXs: HA114A1#V16

Installation SKU and Band numbers for CDUs

HPE Cray SC 270kW 208V 60Hz NA Floor CDU

HPE Cray SC 270kW 480V 60Hz NA Floor CDU

HPE Cray SC 270kW 400V 50Hz EU Floor CDU

Hardware SKU

R4N53A

R4N56A

R9B19A

Installation SKU & Band Number

HA114A1#V17

HA114A1#V17

HA114A1#V17

Support Band number for RDHXs and CDUs

Default RDHX

MVAIR M8 42U600 Hvy 208-230V BF EU RDHX

MVAIR M8 42U600 Hvy 208-230V BF NA RDHX

MVAIR M12 42U600 Hvy 208-230V BF EU RDHX

MVAIR M12 42U600 Hvy 208-230V BF NA RDHX

HPE Cray SC 48Ux600x1200 AR3307 Rack

HPE Cray SC 48Ux750x1200 AR3357 Rack

HPE Cray SC 270kW 208V 60Hz NA Floor CDU

HPE Cray SC 270kW 480V 60Hz NA Floor CDU

HPE Cray SC Bottom Feed 270KW 575V CDU

HPE Cray SC 270kW 400V 50Hz EU Floor CDU

Hardware SKU

-

R4M12A

R4M13A

R4M14A

R4M15A

R4M95A

R4M96A

R4N53A

R4N56A

R4N57A

R9B19A

Support Band Number

ZNK

Z85

Z85

Z85

Z85

ZNL

ZNL

ZNM

ZNM

ZNM

ZNM



Service and Support

Upfront Support SKUs

HPE 3Y Tech Care Basic Service	HU4B2A3
HPE 4Y Tech Care Basic Service	HU4B2A4
HPE 5Y Tech Care Basic Service	HU4B2A5
HPE 3Y Tech Care Basic with Defective Media Retention Service	HU4B3A3
HPE 4Y Tech Care Basic with Defective Media Retention Service	HU4B3A4
HPE 5Y Tech Care Basic with Defective Media Retention Service	HU4B3A5
HPE 3Y Tech Care Essential Service	HU4A6A3
HPE 4Y Tech Care Essential Service	HU4A6A4
HPE 5Y Tech Care Essential Service	HU4A6A5
HPE 3Y Tech Care Essential with Defective Media Retention Service	HU4A7A3
HPE 4Y Tech Care Essential with Defective Media Retention Service	HU4A7A4
HPE 5Y Tech Care Essential with Defective Media Retention Service	HU4A7A5
HPE 3Y Complete Care Addon Basic Service	HU4D8A3
HPE 4Y Complete Care Addon Basic Service	HU4D8A4
HPE 5Y Complete Care Addon Basic Service	HU4D8A5
HPE 3Y Complete Care Addon Basic with Defective Media Retention Service	HU4D9A3
HPE 4Y Complete Care Addon Basic with Defective Media Retention Service	HU4D9A4
HPE 5Y Complete Care Addon Basic with Defective Media Retention Service	HU4D9A5
HPE 3Y Complete Care Addon Essential Service	HU4D5A3
HPE 4Y Complete Care Addon Essential Service	HU4D5A4
HPE 5Y Complete Care Addon Essential Service	HU4D5A5
HPE 3Y Complete Care Addon Essential with Defective Media Retention Service	HU4D6A3
HPE 4Y Complete Care Addon Essential with Defective Media Retention Service	HU4D6A4
HPE 5Y Complete Care Addon Essential with Defective Media Retention Service	HU4D6A5

Notes:

- [Example of building a Support SKU for a HW SKU:](#)
- [5Y Tech Care Essential for R4M12A = HU4A6A5#Z85](#)
- [Learn more about **HPE Tech Care**](#)
- [Learn more about **HPE Complete Care**](#)



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.



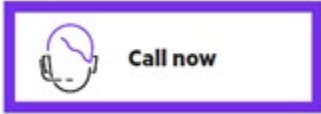
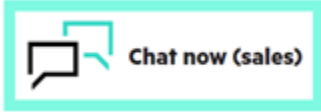
Summary of Changes

Date	Version History	Action	Description of Change
06-Nov-2023	Version 7	Changed	Updated additional SKUs and Service section
10-Jul-2023	Version 6	Changed	Overview, Standard Features and Configuration Information sections were updated.
05-Dec-2022	Version 5	Changed	Configuration Information section was updated
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



Copyright

Make the right purchase decision.
Contact our presales specialists.



© Copyright 2023 Hewlett Packard Enterprise Development LP. The information contained herein is subject to change without notice. The only warranties for Hewlett Packard Enterprise products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. Hewlett Packard Enterprise shall not be liable for technical or editorial errors or omissions contained herein.

ChilledDoor® Rack Cooling System and Motivair® are U.S. registered trademarks of Motivair Corporation.

a50002584enw - 16739 - Worldwide - V7 - 06-November-2023