RDHX PRO Passive

Technical Data

APPLICATION

RDHX PRO chilled water cooling units are designed to deliver localized and energy efficient cooling in data centers, featuring toolless, hot-swappable components for maximum uptime and serviceability creating longer lifetime and ensuring customer productivity.

Designed for HPC and warm water cooling, it allows free cooling under certain ambient temperatures, throughout the year.

FEATURES

- Supports 3rd party racks
- Cooling Capacity Passive
  - 600 W 26 kW @ 14°C supply water and air supply 24 °C
  - 800 W 38 kW @ 14°C supply water and air supply 24 °C
  - 600 W 23 kW @ 24°C supply water and air supply 27 °C
  - 800 W 34 kW @ 24°C supply water and air supply 27 °C
- 4 different models in size 600 W and 800 W, 2000 H and 2200 H – other sizes upon request, e.g. 2450 H, 650 W - 750 W
- Total depth of device 241 mm
- Door opening angle > 90 degrees with integrated door stop
- Air temperature, air humidity, water temperature, water flow, water pressure sensors (optional)
- Leak detection sensors built-in (optional)
- Upgradeable to active version by retrofitting fan module
- 7" touch panel display with new User Interface
- Connectivity: Ethernet, Web Interface, SNMP v3, Modbus TCP and RTU, Redfish
- Integrated condensate pump (optional, only needed when topfeed)

BENEFITS

- Maximum availability and quick repair
- Designed for efficient operation at increased facility water temperatures
- Combination with direct to chip liquid cooling
- Modular standard easy to adapt to individual requirements
- Minimal planning outlay/short setup time
- No need to open the door while servicing fans screws cannot be dropped or lost on the data center floor as they are attached to the module.

Performance	RackChiller Rear Door
Total Depth (active door) [mm]/[inch]	241/9.5
Air Flow [m³/h]/[CFM] 800 W	3600/2118
Air Flow [m³/h]/[CFM] 600 W	2700/1588
Water Flow [m³/h]	6.0
Water pressure drop (at full flow) [bar]	200
Performance (14°C water sup., 24°C air sup.) [kW]	38
Performance (24°C water sup., 27°C air sup.) [kW]	34
Power Consumption [W]	1800

Features	RackChiller Rear Door
Dual/Redundant PSU	Optional
Controller Swap	Tool-less quick swap
PSU Swap	Tool-less quick swap
External Communication	Serial (RS485), 2x Gbit Ethernet
Communication Interfaces	Modbus RTU, Modbus TCP, SNMP, Redfish, Web Browser
Local interface/HMI	7" Touch Panel Display
Valve Control	Automatic
Valve Type	2-Way

Standard Offering	RackChiller Rear Door
Key Application/Market Positioning	Data center cooling in facilities with white space, warm water temperatures, increased air temperatures
Adapter Frame	Approx. 127 mm in depth, solid frame housing the RDHX and complete plumbing/wetted components, no penetration of wetted material into rack, increased safety against leaks
Top Cover	Panel with cutouts for flexible hoses and cabling
Bottom Cover	Panel with cutouts for flexible hoses and cabling
Size Variation	Custom
Return Air Filter	Accessory
Hose Package	Accessory
Condensate Management Package	Accessory
Door Switch Package	Accessory
External Temp Sensor	Accessory
Power Supplies	Up to 2
Leak Detection	Optional
Water Sensor	Optional, please order corresponding hose package

* Water quality requirements must be maintained to avoid problems during operation.
   Usage of appropriate anti corrosion and frost protection agents is recommended.
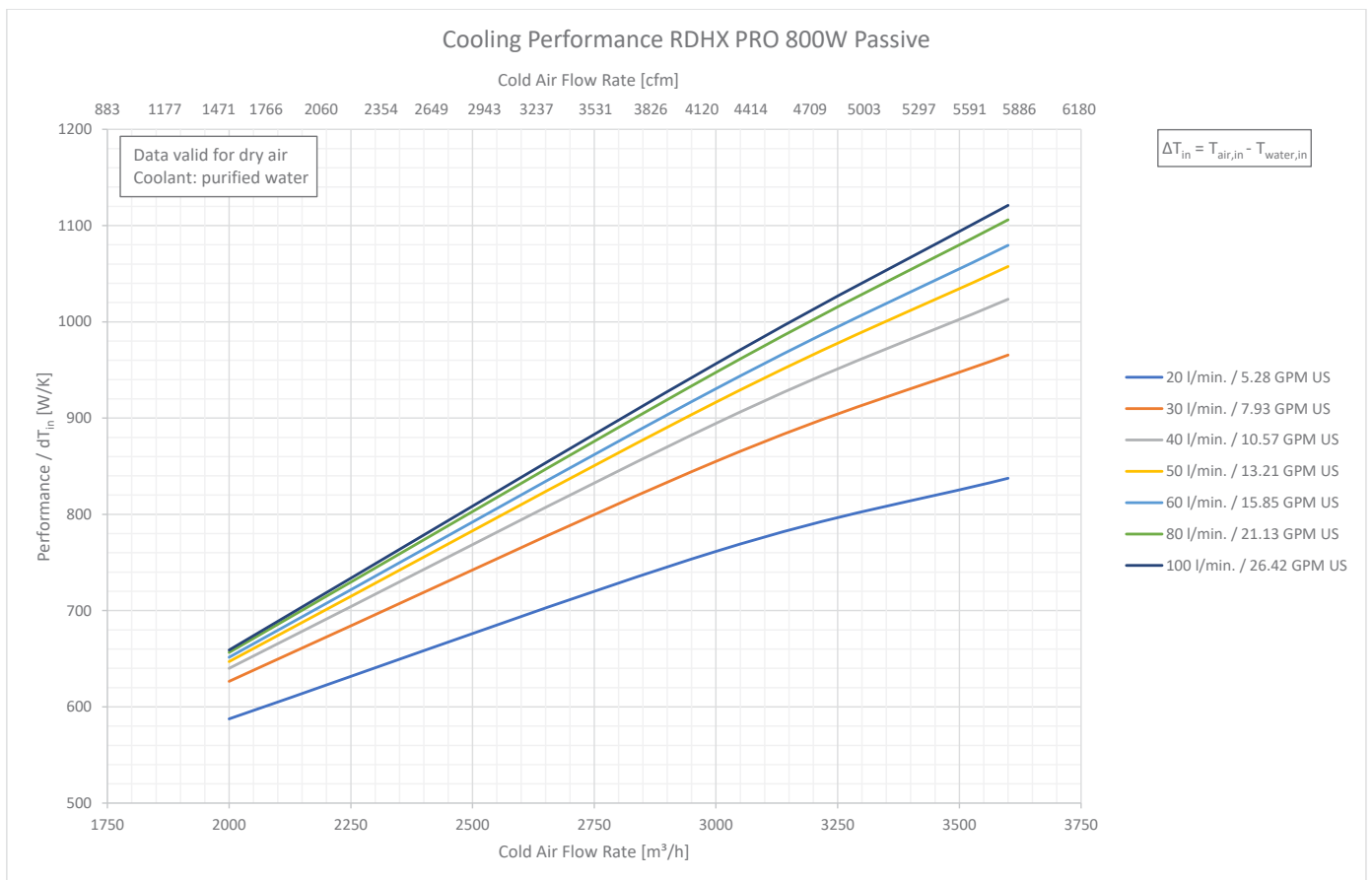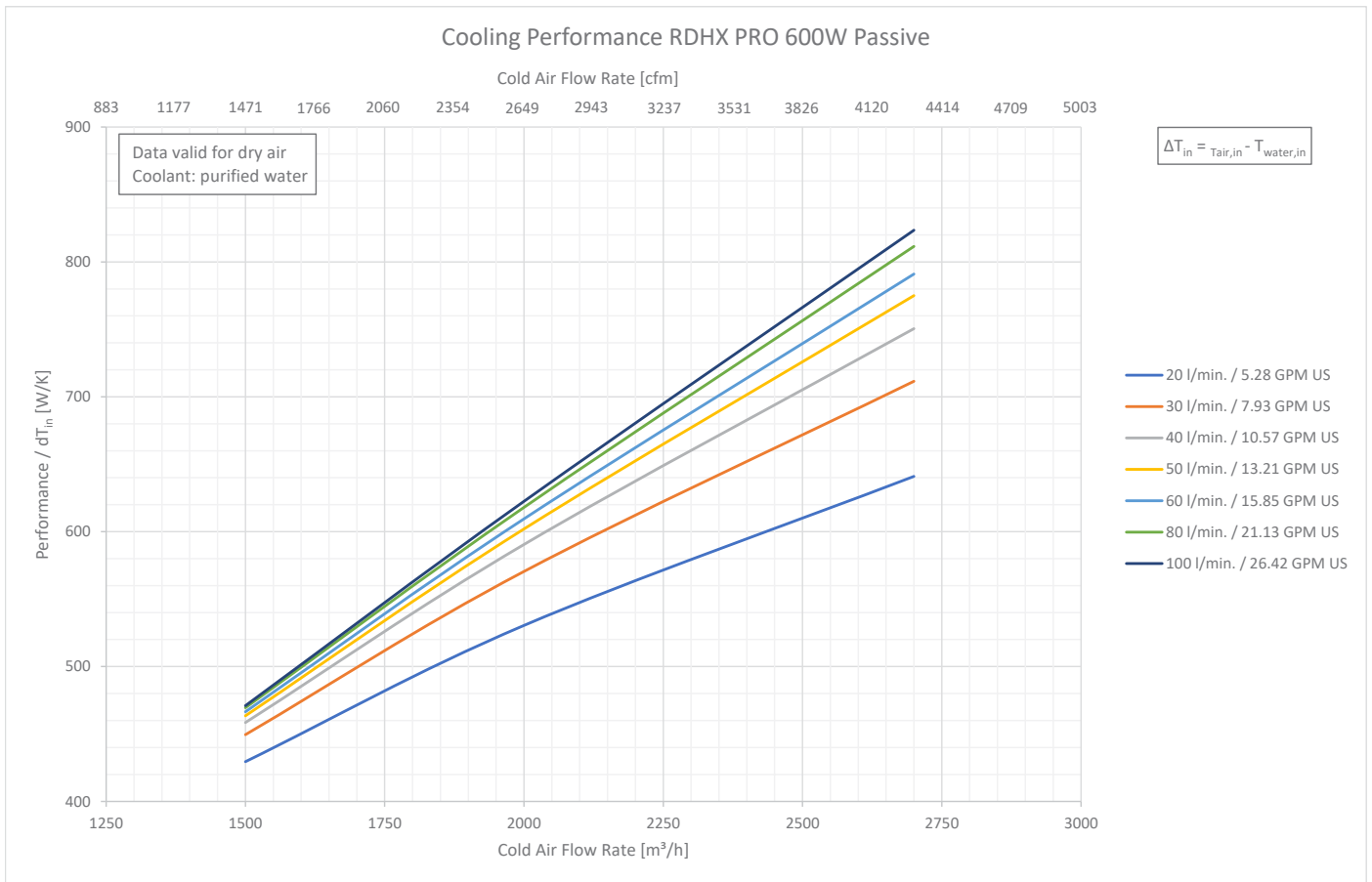
** Below 14°C/5°F there is an increased risk of condensation.
    A condensate management package is recommended.

TECHNICAL DATA

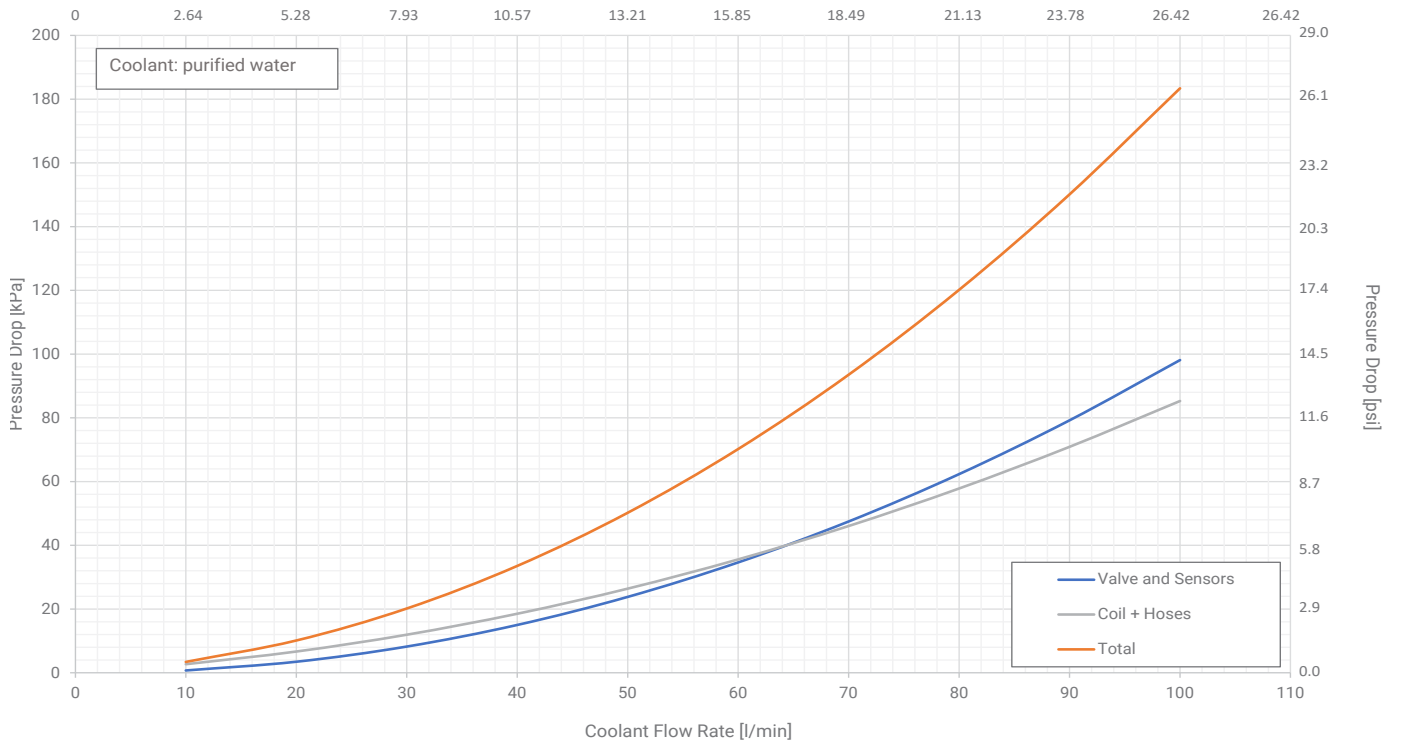| Technical Data	
Standard Color	RAL 7021
Controller	Smart controller, hot swappable without tools, access from aisle
Power Supplies	Up to 2 wide range PSUs, hot swappable without tools, access from cold aisle
Coolant	Feed egress for flexible hoses through cutouts at top or bottom panel
Control Valve	2-way ball valve
Valve Control	Manual or automatic
Coolant Flange at Device	Male BSPP 1" flat gasket (ISO 228 1) threaded flange
Operating Temperature	5-50°C/41-122°F
Transport and Storage Temperature	−40-85°C/−40-185°F
Normal Operating Pressure	5 bar/74 psi
Minimum Burst Pressure	20 bar/290 psi
Communication Interfaces	RS485, Ethernet, 2 digital inputs, 3 relay outputs
Communication Protocols	Modbus RTU, Modbus TCP, SNMP, Redfish, Onboard Web Browser
Onboard Sensors	2× Supply Air Temp Sensor 2× Return Air Temperature
Optional Sensors	Leak Detection, P/N 24630-199 External Air Temperature Sensor, P/N 21070-102 Coolant Sensors in Hose Package 24630-193 Condensate Level Switch, Included in Condensate Management Package 24630-198 and 24630-209

Coolant Requirements	
pH	7 to 9
Corrosion inhibitor(s)	Required, as of ASHRAE TC 9.9
Biocide	−
Sulfides	<10 ppm
Sulfate	<100 ppm
Chloride	<50 ppm
Bacteria	<1000 CFU/mL
Total hardness (as CaCO3)	<200 ppm
Conductivity	−
Total Suspended Solids	−
Residue after evaporation	<500 ppm
Turbidity	<20 NTU (nephelometric)
Glycol (Propylene Glycol) Concentration	Up to 35%
Communication Interfaces	RS485, Ethernet, 2 digital inputs, 3 relay outputs

Delivery Includes	
1	Extension frame, RAL 7021, for installation onto rack with hinges and cutouts for hose egress from top and bottom, cutouts for cabling on top and bottom; levelling feet; blanking's to cover hoses towards rack; door with pre-assembled heat exchanger, prepared for hose assembly at top or bottom and provisions for filling/draining; handle with door lock and keys; sensors; hot swappable controller, touch interface, 1× hot swappable power supply
1	User manual is provided as a download

W1

1991,50

H1

H2

31,00

W2

110,50

61,00

34,50

357,00

118,00

152,45

24,70

252,90

34,10

50,00

W3

86,72

Cooling Performance RDHX PRO 600W Passive

Cold Air Flow Rate [cfm]

Data valid for dry air
Coolant: purified water

$\Delta T_{in} = T_{air,in} - T_{water,in}$

Performance / dT_{in} [W/K]

- 20 l/min. / 5.28 GPM US
- 30 l/min. / 7.93 GPM US
- 40 l/min. / 10.57 GPM US
- 50 l/min. / 13.21 GPM US
- 60 l/min. / 15.85 GPM US
- 80 l/min. / 21.13 GPM US
- 100 l/min. / 26.42 GPM US

Cold Air Flow Rate [m³/h]

Cooling Performance RDHX PRO 800W Passive

Cold Air Flow Rate [cfm]

Data valid for dry air
Coolant: purified water

$\Delta T_{in} = T_{air,in} - T_{water,in}$

Performance / dT_{in} [W/K]

- 20 l/min. / 5.28 GPM US
- 30 l/min. / 7.93 GPM US
- 40 l/min. / 10.57 GPM US
- 50 l/min. / 13.21 GPM US
- 60 l/min. / 15.85 GPM US
- 80 l/min. / 21.13 GPM US
- 100 l/min. / 26.42 GPM US

Cold Air Flow Rate [m³/h]

Coolant Pressure Drop

Coolant Flow Rate [GPM US]

Item number	Dimensions	Hinge Side	H1	H2	W1	W2	W3
10630-208	2000 H 600 W	left	2048,8	1305,17	598,3	553	489,77
10630-209	2000 H 800 W	left	2048,8	1305,17	798,3	753	639,77
10630-210	2200 H 600 W	left	2248,8	1405,17	598,3	553	489,77
10630-211	2200 H 800 W	left	2248,8	1405,17	798,3	753	639,77
10630-212	2000 H 600 W	right	2048,8	1305,17	598,3	553	489,77
10630-213	2000 H 800 W	right	2048,8	1305,17	798,3	753	639,77
10630-214	2200 H 600 W	right	2248,8	1405,17	598,3	553	489,77
10630-215	2200 H 800 W	right	2248,8	1405,17	798,3	753	639,77

TECHNICAL DATA

Power Supply Unit

Additional or replacement power supply unit for power redundancy or A/B feed applications

Includes:

- Power Supply Unit 48 VDC/1800 W

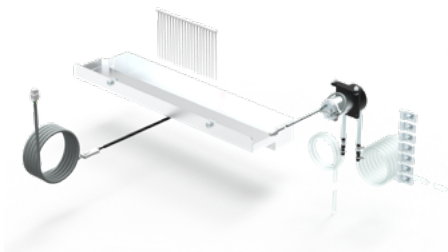| Part No.	Description
11098-757-SP	Power Supply Flatpack S 48/1800 HE

Leak Detection Package

Wire rope leak detection to be installed at the boundary of the condensate tray, alarms major leaks inside the cooler

Includes:

- 1 leak detection module
- 1 preassembled leak detection rope including interface cable and termination resistor

Part No.	Description
24630-199	Leak Detection Package

Condensate Drain, Top Feed

Enables condensate drain for top feed installations with a condensate pump

Includes:

- 1 condensate pump, max. head 8 m
- 1 installation bracket and screws
- 1 flexible hose ⅜"

Part No.	Description
24630-198	Condensate Drain, Top Feed, 600 W
24630-209	Condensate Drain, Top Feed, 750 W

Condensate Drain, Bottom Feed

Replaces the condensate drain cover in the condensate drain with a hose nipple and flexible hose.
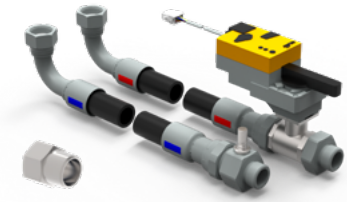
Includes:

- 1 hose nipple
- 1 flat seal
- 1 threaded nut
- 1 transparent hose, inner diameter: Ø10 mm, length: 3 m
- 1 spring band clamp

Part No.	Description
24630-197	Condensate Drain, Bottom Feed, 600 W
24630-208	Condensate Drain, Bottom Feed, 750 W

**Flexible
Hoses**

Flexible hoses to connect the cooler with facility coolant. Facility connection female BSPP 1" flat gasket. Cooler connection female BSPP 1" flat gasket or Danfoss FD83 quick disconnect couplers.

For NPT facility installations, a BSP male to NPT male adapter is required.

Includes:

• 2 Flexible hose assemblies

Part No.	Description
24630-193	Flexible Hoses 2.4 m, with valve and sensors
24630-201	Flexible Hoses 2.4 m, with valve
24630-211	Fitting Kit MM BSP1"/NPT1" (x2)

Door Filter

Door filter class F4, installs onto perforated panel at internal side of heat exchanger

Includes:

• 1 door filter F4, 1 perforated cover panel, powder-coated RAL7021

Part No.	Description
24630-200	RackChiller RDHX PRO door filter, 600 W
24630-202	RackChiller RDHX PRO door filter, 800 W

**Rack
Assembly kits**

Provides brackets which are required for installation of the RDHX PRO onto racks

Includes:

• 6 assembly brackets
• 12 screws

Part No.	Description
24630-206	Rack Assembly Kit for Proline S1 and Varistar CP
24630-207	Levelling Feet, 120 mm

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