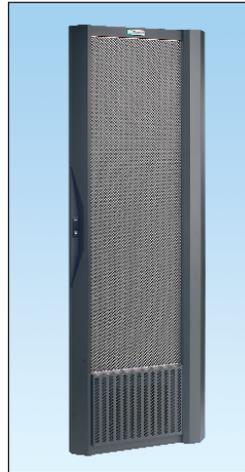


specifications

Door shall be a passive water-based, heat exchanger that utilizes server fans as the means to pass hot air through the heat exchanger. The design shall include a fin and copper tube heat exchanger with a bypass air feature that introduces a negligible pressure drop to have no adverse effect on the server fans. The door shall be capable of removing 50% – 60% or 50,000 – 68,000 BTU/hr from the computer room. Door shall be interoperable with leading server manufacturers and shall reduce the average temperature by 45°F – 54°F (25°C – 30°C). Lowering server exhaust temperature shall allow deployment of high-density cabinets close together. Water shall be fed via a secondary closed loop water source with minimal volume and shall not introduce condensation into the data center.



technical information

Dimensions:	CRDHX:	82.6"H x 28.1"W x 5.1"D (2098mm x 714mm x 130mm)
	CRDHXA32:	84.0"H x 31.5"W x 1.75"D (2134mm x 800mm x 45mm)
	CS1, CRDHX, and CRDHXA32:	84.0"H x 31.5"W x 47.6"D (2134mm x 800mm x 1209mm)

Accessories: COOL BOOT™ Raised Floor Assembly and door stop included

key features and benefits

Contains no moving parts to passively cool the cabinet	More efficient than fan driven products and eliminates acoustical noise in the data center. Improved system reliability (no moving parts to fail); no extra power or circuits required
Transfers 50% – 60%, 50,000 – 68,000 BTU/hr or 20 kW of the input heat load directly to reduce amount of hot air and required CRAC units	Lower energy costs up to 14% and capital expenditure savings for increased network reliability
Reduces the average temperature by 45°F – 54°F (25°C – 30°C)	For increased network reliability and improved working environment
Prevents hot spots and allows installation of high-density server cabinets close together	Reduces the need for extra real estate and extra CRAC units
Works with leading server suppliers (HP, IBM, Dell) via uniform and low impedance flow distribution within servers	Verified interoperability for increased network reliability
Operates above dew point level to prevent condensation	Higher system reliability; does not require de-humidifier
1219 in.² surface area provides a large area for heat exchange	Enables a large amount of air-to-water cooling for lower operating expenses
3/4" quick connect couplings provide quick connection and disconnection of water to the cooling door	Does not require hard piped system; allows for easy moves, adds, and changes

NET-ACCESS™ Cooling Door

Cooling door:	CRDHX
Cooling door adapter:	CRDHXA32

NET-ACCESS™ Server Cabinet (CS Family) *

Server cabinet:	CS1
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NET-ACCESS™ Cabinet Accessories

Bracket to vertically mount patch panels:	CVPPB
End mount slack spool:	CNSPE
Center mount slack spool:	CNSPC
Set of four casters:	CNCSTR

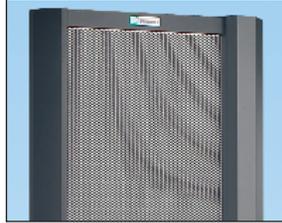
*For additional information on NET-ACCESS™ cabinets, refer to brochure SA-RKCB11.

NET-ACCESS™ Cooling Door

The NET-ACCESS™ Cooling Door has been co-designed and engineered by leveraging IBM's 30+ years liquid cooling expertise. This technology has been performance tested and verified in third party laboratories and has been successfully deployed in data centers to meet the cooling requirements of industry leading servers throughout the world. By using the NET-ACCESS™ Cooling Door system, data centers can deploy up to five times the equipment as compared to conventional cooling methods since the cooling door uses only server fans for airflow with no increase in energy costs or noise levels. The real estate, number of cabinets, and CRAC units required are reduced.

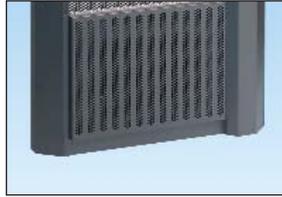
1 Heat Exchanger

- Copper tube design to maximize heat transfer and increase system efficiency
- Operates above dew point to prevent condensation



2 Air Bypass

- Minimizes static pressure to ensure proper server operation
- Eliminates need for additional cooling fans, as server fans provide air movement for reduced power consumption and improved reliability



3 Quick Connect Couplings

- Toolless connection enables fast setup and easy moves, adds, and changes
- Attaches to flexible hoses enabling maximum door swing for easy access
- Corrosion resistant couplings maintain water quality and system reliability
- 3/4" standard ISO-B quick release leak-free couplings



4 COOL BOOT™ Raised Floor Assembly

- Minimizes bypass air through cutouts
- Electrostatic dissipating material provides a pathway to ground
- Flexible gasket prevents damage to cable or cooling door hoses from sharp edges of cut floor tile



5 Door Stop

- Controls cooling door swing
- Limits hoses from contacting raised floor stanchions and pedestals
- Holds cooling door open at 120° for hands-free access to NET-ACCESS™ Server Cabinet





6 CDU* (Cooling Distribution Unit)

- Temperature and flow monitoring controls
- Leak detection or water level sense and shutdown
- Local/remote monitoring and control
- Uses glycol based building chilled water
- Redundant pumps

7 NET-ACCESS™ Server Cabinet

- Engineered thermal management
- Superior cable management
- Fully electrically bonded for protection of equipment and personnel
- Identical appearance of switch and server cabinets for improved aesthetics

8 Flexible Hose Assembly*

- EPDM rubber
- 3/4" standard ISO-B quick release leak-free couplings

9 CDU and Cooling Door Water*

- Secondary water supply
- Deionized water
- Water treated with appropriate corrosion inhibitor and biocide
- No glycol in secondary water

10 GRIDRUNNER™ Underfloor Cable Routing System

- Drop-in wire sections
- All rounded edges protect cables and installers
- Pedestal brackets assemble at any height of the pedestal with a single tool and electrically bonds wire basket sections, creating a continuous ground path



The IBM peel-back logo is owned by International Business Machines Corporation and is used under license from IBM.

*NET-ACCESS™ Cooling Door is designed to be used with leading HVAC manufacturers.

NET-ACCESS™ Cooling Door

Facts

NET-ACCESS™ Cooling Door

- Door capacity: 1.5 gallons/5.3 liters
- Door weight with water: 88 lbs./40 kg
- Water operating temperature: 50°F – 64.4°F/(10°C – 18°C)
- Water pressure: 20 psi/138 kPa
- Water flow rate: 6 – 10 gpm/22 – 37 liters/minute
- Water pressure drop: 7 psi/48 kPa
- Hose connections: via 3/4" standard ISO-B quick release leak-free couplings
- Water type: Deionized

Cooling Distribution Unit (CDU) Attributes

- Control – temperature, dew point, and flow control monitoring capability
- Leak detection – automatic water level sensing and shutdown
- Closed-loop CDU – required

Server Heat Removal Test Cases – 3rd Party Lab Results

Rack Optimized Server Application:



Application:	
Server Type	Rack Optimized
Rack Units	2
Number of Servers	16
Heat Load (kW)	12
CFM	880
Heat Removed	57%/7 kW

Blade Chassis Server Application:



Application:	
Server Type	Blade Chassis
Rack Units	7
Number of Servers	5
Heat Load (kW)	20
CFM	2,500
Heat Removed	52%/10 kW

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For a copy of PANDUIT product warranties, log on to www.panduit.com/warranty



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Contact Customer Service by email: cs@panduit.com
or by phone: 800-777-3300 and reference RKSP31

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