Vertiv™ Knürr® DCD Cooling Door

Passive rear-door heat-exchanger up to 50 kW

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Vertiv™ Knürr® DCD Cooling Door

Passive cooling unit for maximum energy efficiency. Vertiv™ Knürr® DCD Cooling Door is an air-water heat exchanger integrated into the rear door of a server rack. The heat exchanger is able to absorb heat loads from server racks of up to 50 kW.

- Compact solution for newly constructed and existing data centers
- Maximum possible energy efficiency due to lack of fans
- Supports cold room concept
- Enables permanent piping of the water circuit through water-bearing hinges.

Wate routing at Knürr DCD

Benefits

Special water-bearing hinge

Top water connection supports

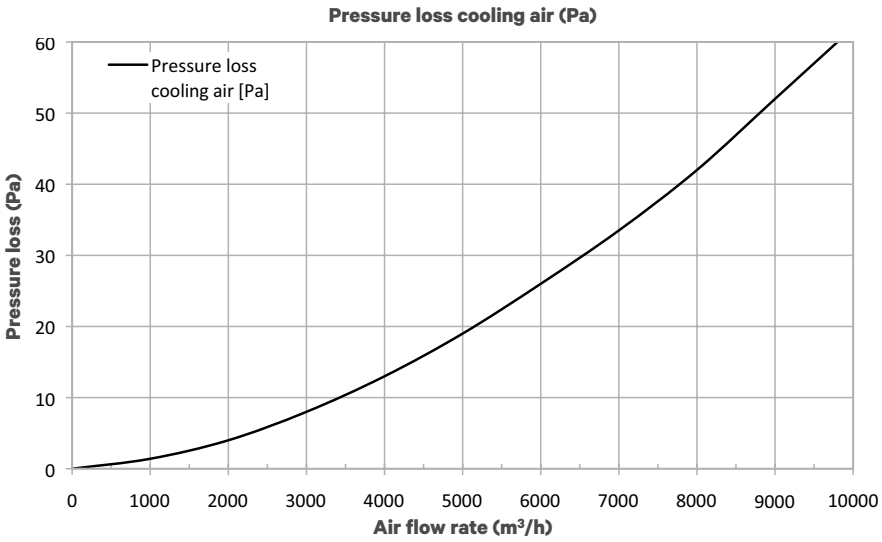
Condensation discharge supports
Condensation pan

Availability

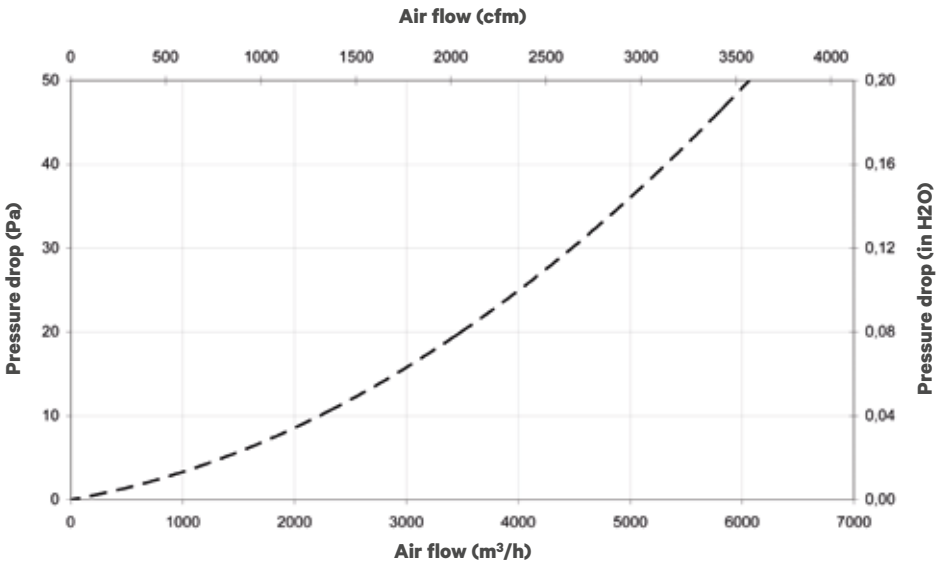
- No additional fans required for cooling so no risk of failure
  - Greater system reliability
  - Fewer sources of failure
  - No additional fans so no waste heat load on the room
- Guaranteed 50 kW cooling
- Minimal air pressure drop
- Condensation pipe and collector in the event that the temperature falls below the dew point; removed via 5/8“ flexible hose on plug nipple
- The risk of condensate deposit is reduced by vertical orientation of the heat-exchanger fins.

Efficiency

- No additional fans for cooling; option to use existing rack structures for minimized investment
- Optimum space utilization due to ultra compact design and hence very low room costs
- Minimum chilled water pressure drop. About 50 kPa facilitates minimum energy consumption by the pumps.



Cooling air flow pressure loss DCD50



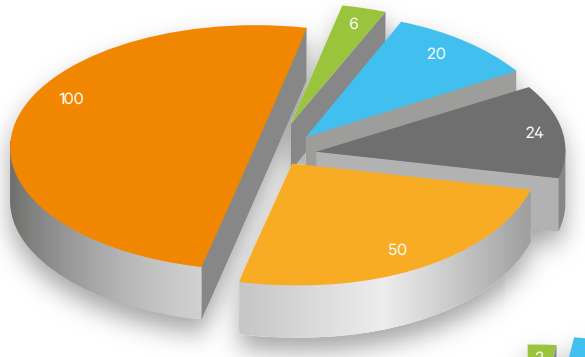
Cooling air flow pressure loss DCD35

35 Pa is no problem for the typical fans in servers

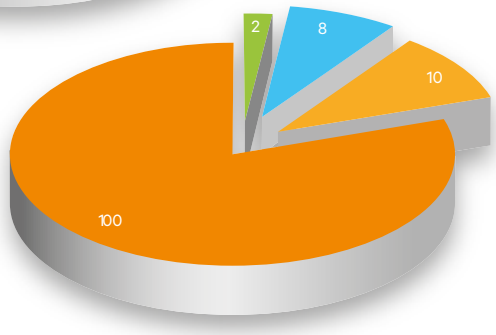
Vertiv Knürr DCD Cooling Door with adapter frame to third-party rack

Adaptability

- Standard heights of 2,000 and 2,200 mm (42/47U)
- Standard widths of 600, 700 and 800 mm (DCD50 for width 800mm only)
- Top or bottom chilled water connection (field changeable)
- Combination of Vertiv™ Knürr® DCD Cooling Door with server racks from other manufacturers is possible by incorporating special adaptor frames.



PUE = 2



PUE = 1,2

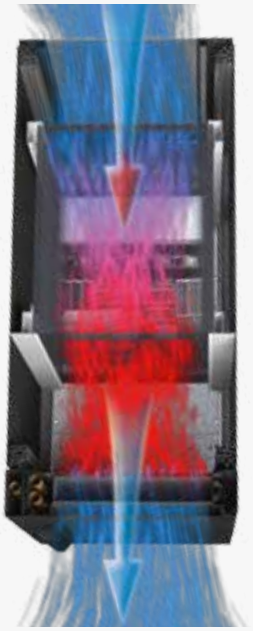
- Lighting
- Electrical losses
- Air circulation
- Cooling
- IT equipment

Configurations

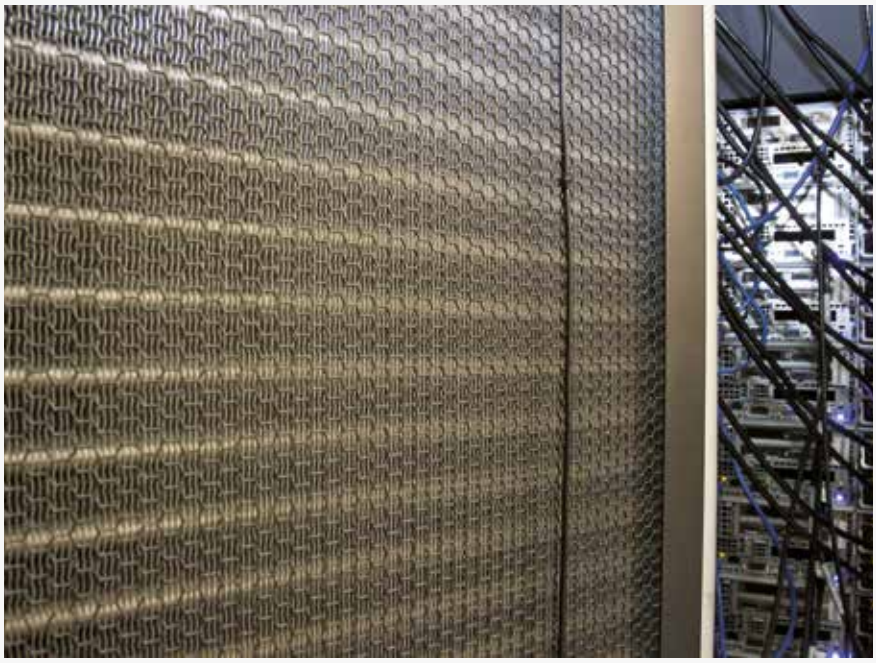
Vertiv Knürr DCD Cooling Door open without trim

VERTIV™ KNÜRR® DCD COOLING DOOR

Server rack cooling components with Vertiv Knürr DCD Cooling Door



Server rack air flow with Vertiv Knürr DCD Cooling Door (cross-section)



Vertiv Knürr DCD Cooling Door in a server cooling application

Specifications, unit configuration number

Vertiv™ Knürr® DCD Cooling Door basic specification

COOLING AIR SIDE	
Housing material	Steel plate (powder coated)
Operating ambient temperature	10 °C – 35°C (50 °F – 95 °F) (other temperatures on request)
Maximum absolute air humidity on site	8 g/kg
Air outlet temperature (in accordance with ASHARE)	18 °C – 27 °C (64.4 °F – 80.6 °F)
Air temperature difference IN – OUT	15 K – 20 K

CHILLED WATER SIDE	
Cooling performance	DCD35: 35 kW DCD50: 50 kW
Chilled water temperature inlet	12 °C – 18 °C (53.6 °F – 64.4 °F) (other temperatures on request)
Chilled water temperature outlet	18 °C – 24 °C (64.4 °F – 75.2 °F) (other temperatures on request)
Maximum operating pressure	10 bar (145 psi)
Pipe connection IN / OUT	1" F (on the frame) (DIN ISO 228 - 1)

Vertiv Knürr DCD Cooling Door; rear door closed

Vertiv™ Knürr® DCD Cooling Door configuration number

MODEL NUMBER – PART 1/2										MODEL DETAILS											PART 2/2			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
D	C	D	3	5																				
D	C	D	5	0																				

1.–3. Basic unit
Knürr DCD is an air-water exchanger that is integrated into the rear door of a server cabinet. The heat exchanger serves to absorb heat loads from server cabinets of up to 35 and 50kW. Thereby, it can be configured in such a way that no thermal loads are released to the installation area.

4.–5. Nominal cooling capacity
35 = 35kW
50 = 50kW (cabinet width 800mm only)

6. Cabinet height
A = 2000 mm
B = 2100 mm
C = 2200 mm

7. Cabinet width
6 = 600 mm (not available for DCD 50)
7 = 700 mm (not available for DCD 50)
8 = 800 mm

8. Cabinet type
3 = 3rd party cabinet adaptor
0 = No cabinet
A = Predisposition for DCM cabinet

9. CW connection – hinge possition
1 = Top - left
2 = Top - right
3 = Bottom - left
4 = Bottom - right

10. Cabinet depth
0 = No cabinet
E = 1000 mm
F = 1100
G = 1200

11. Front door
0 = No cabinet
C = One wing perforated right
G = Double wing perforated right
L = One wing perforated left
X = Cabinet without front door

12. 19" rails front
0 = No cabinet
L = Assymetric with air separation and additional vertical U slots (for width 700mm and 800mm)
A = Symmetric with air separation and additional vertical U slots (for Width 800mm only)
B = Symmetric with air separation (for width 600mm only)

13. 19" rails rear
0 = No cabinet
Y = Assymetric without air seperation (for width 700mm and 800mm)
S = Symmetric without air seperation (for width 600mm only)
A = Symmetric with air separation and additional vertical U slots (for Width 800mm only)
B = Symmetric with air separation (for width 600mm only)
L = Assymmetric with air separation and additional vertical U slots (for width 700mm and 800mm)

14. Bottom plate
0 = No cabinet
L = Cable entry for cabinets with levelling feet
R = Cable entry for cabinets with casters

15. Plinth
0 = No cabinet
A = Plinth H100mm incl. levelling feet
B = Plinth H200mm incl. levelling feet
R = With castors (no plinth available)
F = Levelling feet (no plinth)

16. Color
1 = Light grey RAL 7035
G = Black grey RAL7021

17. Side panels
0 = No cabinet
X = Without side panels
B = With Both Side Panels

18. Jumpering depth for front 19" rails
0 = No cabinet
A = 80mm
D = 123mm

19.–20. Free

21. Packaging
P = Short distance – Palet, Shrink Wrap
S = Long distance – Wooden Box

22. SFA
A = SFAs included
X = No SFA

23.–25. Internal counter

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MKA4LOUKDCD feb2014