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# Modular efficiency, maximum power



## FanWall air conditioners

chilled water or direct expansion versions  
for high density hyperscale data centres

40 – 200 kW Range



# Cooling capacity meets compact footprint

Our chilled water FanWall HBCV series air conditioners are designed for technological environments where a compact footprint is a requirement – without any impact on these units' cooling output capacity. An in-depth CFD (computational fluid dynamics) analysis has allowed every last constructive detail to be designed so as to minimise internal airflow pressure drops and, therefore, fan power consumption. At the same time, the large surface of the finned pack exchanger minimises the approach temperatures between inlet air and outlet water, maximising system efficiency.



### Finned pack coil with hydrophilic coating ①

All models in the FanWall HBCV range feature heat exchange coils with hydrophilic coating. This special coating – together with adequate adjustment of air through-flow speeds – helps condensate collection and outflow during the dehumidification process, preventing any dripping on the inside and outside of the unit.

### Blown finned coil ①

According to a specific design choice, this finned coil is installed downstream of the fans. This ensures a more even distribution of the delivery air to the racks, minimising turbulence in the air flow.

### Accurate regulation with multiple types of valves ②

The adjustment valve with 0-10V servomotor (standard on the whole range) can be obtained in a 2-way (requires variable flow system) or 3-way version. The other versions available with configurator are those with spring return servomotor or independent pressure valves. The flow control performance of this type of valve guarantees adjustment accuracy, while at the same time maintaining the hydronic balance in the system.



### Ventilation EC 2.0

The use of standard-equipment EC plug fans across the whole range – designed to adjust the air flow according to the thermal load – results in efficient use of the electricity for ventilation purposes, with a positive impact on the system PUE. Extended range speed adjustment is carried out via MODBUS protocol. The emergency speed function allows for fan operation consistency even in the event of microprocessor malfunctions.

### Ventilation adjustment ③

Depending on the air distribution logic in the server room, it is possible to adjust the machine on-board ventilation system to ensure a constant air flow rate (airflow control) or a constant available overpressure ( $p$  control). The latter is particularly useful if a floating floor is used.

### Maximum possible redundancy

To ensure system operation continuity, the FanWall HBCV range makes it possible to have a fully redundant refrigeration circuit: a double coil and double water adjustment valve allow the server room to be cooled even when either circuit fails.

### Easier scheduled maintenance ④

The unit has been designed with the utmost care to grant front (air inlet side) access to internal components even with the units running. This makes routine maintenance easier in full compliance with safety standards.



### More advantages

- Double power supply with automatic switch (on request)
- Stainless steel condensate drain pan
- Fan speed modulation based on thermal load (constant  $\Delta T$ )
- Fan speed modulation based on air flow requirements (constant  $\Delta p$ )
- Humidify/de-humidify feature
- Post-heating systems:
  - with electrical heating elements
  - with hot water coil
- instantaneous reading of the supplied cooling capacity (on request)

| FANWALL HBCV   |      | 051            | 121            | 171            | 102            | 242            | 342            |
|--|------|----------------|----------------|----------------|----------------|----------------|----------------|
|  |      | 1 MODULE       |                |                | 2 MODULES      |                |                |
| VERSION B - INLET AIR 30 °C - 35% R.H.; WATER TEMPERATURE 10 - 18 °C |      |                |                |                |                |                |                |
| TOTAL COOLING CAPACITY   | KW   | 48.5           | 118.2          | 173.4          | 97             | 236.4          | 346.8          |
| SHR  | -    | 1.0            | 1.0            | 1.0            | 1.0            | 1.0            | 1.0            |
| REFRIGERATION CYCLE EER  | -    | 69.3           | 62.2           | 59.8           | 69.3           | 62.2           | 59.8           |
| VERSION B - INLET AIR 35°C - 25% R.H.; WATER TEMPERATURE 10 - 18 °C  |      |                |                |                |                |                |                |
| TOTAL COOLING CAPACITY   | KW   | 63.7           | 157.1          | 230.3          | 127.4          | 314.2          | 460.6          |
| SHR  | -    | 1.0            | 1.0            | 1.0            | 1.0            | 1.0            | 1.0            |
| REFRIGERATION CYCLE EER  | -    | 91.0           | 82.7           | 79.4           | 91.0           | 82.7           | 79.4           |
| VERSION C - INLET AIR 30 °C - 35% R.H.; WATER TEMPERATURE 10 - 22 °C |      |                |                |                |                |                |                |
| TOTAL COOLING CAPACITY   | KW   | 44.9           | 110.2          | 164.4          | 89.8           | 220.4          | 328.8          |
| SHR  | -    | 1.0            | 1.0            | 1.0            | 1.0            | 1.0            | 1.0            |
| REFRIGERATION CYCLE EER  | -    | 64.1           | 58.0           | 56.7           | 64.1           | 58.0           | 56.7           |
| VERSION C - INLET AIR 35 °C - 25% R.H.; WATER TEMPERATURE 10 - 22 °C |      |                |                |                |                |                |                |
| TOTAL COOLING CAPACITY   | KW   | 60.6           | 148.9          | 219.8          | 121.2          | 297.8          | 439.6          |
| SHR  | -    | 1.0            | 1.0            | 1.0            | 1.0            | 1.0            | 1.0            |
| REFRIGERATION CYCLE EER  | -    | 86.6           | 78.4           | 75.8           | 86.6           | 78.4           | 75.8           |
| AIR FLOW RATE  | M3/H | 8700           | 21200          | 31100          | 17400          | 42400          | 62200          |
| TOTAL ABSORBED POWER   | KW   | 0.7            | 1.9            | 2.9            | 1.4            | 3.8            | 5.8            |
| DIMENSIONS* (WxHxD)  | MM   | 1500x1475x1300 | 2950x1475x1300 | 4000x1475x1300 | 1500x2950x1300 | 2950x2950x1300 | 4000x2950x1300 |

\* The dimensions shown refer to standard models but can be customised according to application requirements



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