VERTIV

Liebert® CWA

Chilled Water Thermal Wall Unit
from 200 to 500 kW

Vertiv™ Liebert® CWA | Chilled Water Thermal Wall Unit

Liebert® CWA is a Thermal Wall designed to rise the technology threshold of Chilled Water, indirect expansion Units for slab floor application installed in the gallery side.

Liebert CWA provides a ready to use Thermal Wall for data center application. The product has been engineered to maximize the cooling density for footprint. Furthermore, all the main components are factory installed, minimizing the installation costs on site.

Liebert CWA, thanks to its design, minimizes running costs for the entire cooling system. All components and control strategies are driven to provide an extremely efficient solution for infrastructures facing the challenges of modern IT applications.

Liebert CWA matches requirements for cooling continuity coming from the most trusted and approved certification authorities for data center design and operation. Cooling continuity and reliability are key factors for Liebert® CWA and mission critical infrastructures.

Liebert CWA embeds specific algorithms developed specially for non-raised floor application, ensuring precise and constant control of airflow and temperature under all working conditions. A wider operating range allows users to remain a step ahead of new challenges posed by data center requirements and climate change.

Vertiv™ Liebert® CWA Versions

Configurations

- From 200 to 500 kW
- From 4 to 8 fans
- Unit structure according Standards IBC 2018

Main Options:

- Touch Screen Display
- Pressure Independent Control Valves
- Dual power supply with Control Power Continuity
- Flanges connections
- Damper

Vertiv™ Liebert® CWA - Environmentally conscious features

- The unit design minimizes the aerodynamic impact of all the internal parts, ensuring a reduction in the internal air pressure drop that translates in reduced unit power consumption.
- The latest generation EC fans technology, compliant with the ErP directive, results in highly efficient units.
- The pressure independent control valve regulates and maintains a constant flow improving water distribution.

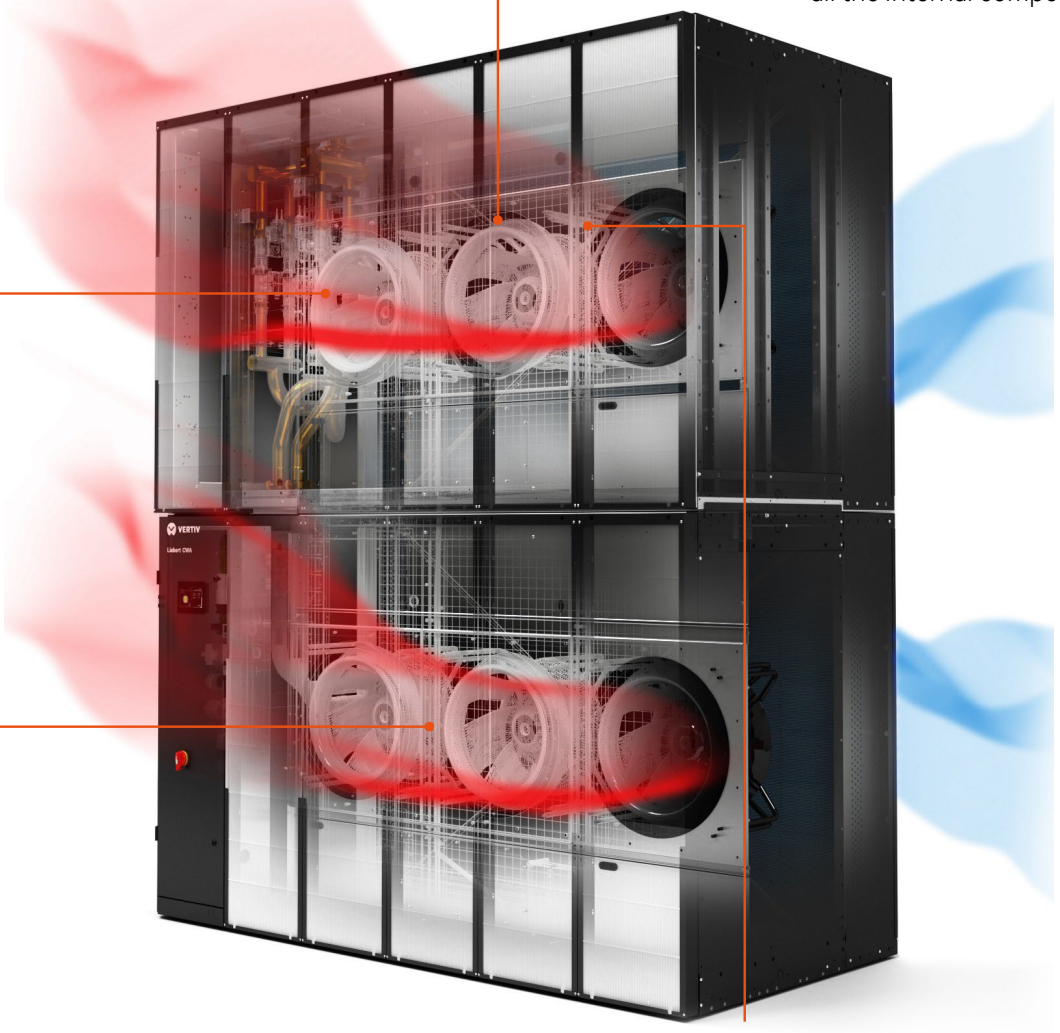
Feature	How You Benefit
• Latest generation of EC fans	• Powerful fans increase the cooling capacity at the same unit footprint.
• Pressure independent control valve	• System energy efficiency increased due to a better water distribution.
• Multiple enhanced coils	• Ad-hoc coils to best suit the new data center market trends.
• Cooling override function	• Even in case of a control failure, the unit can guarantee cooling continuity.
• Virtual Display	• Through a web browser, all the functionalities of the standard display can be replicated.

Standardize Unit

Vertiv™ Liebert® CWA provides a ready-to-use air handling unit generating for data center application. The product design allows to factory install all the main components and options, minimizing the installation costs on site. The product layout is divided into two modules with the same capacity for field assembly..

Energy Efficiency

Vertiv™ Liebert® CWA is designed to set new efficiency standards on chilled-water thermal wall cooling systems for data centers. The unit's internal design combines market-leading technologies and optimize the aerodynamic impact of all the internal components.



Cooling Continuity

Vertiv™ Liebert® CWA maximizes cooling continuity and reliability, matching the requirements coming from the most trusted and adopted certification authorities for data center design and operation.

Vertiv™ Liebert® iCOM™ Smart Control

Liebert® iCOM™ microprocessor control manages and optimizes the overall system, embedding specific algorithms developed specially for non-raised floor application, ensuring precise and constant control of airflow and temperature under all working conditions.

Standardized Unit

- The product layout has been engineered to maximize the cooling density for footprint, this allowing to get more space for the IT equipment.
- Multiple options, accessories and features are available as standard. Furthermore, all the main components are factory installed, minimizing the installation costs on site.
- The product is a ready-to-use-solution, which allows quick responsiveness in each project, improving the timing to finalize the data centre design and accelerating speed-to-market.

Energy Efficiency

- The unit's internal design combines market-leading technologies and optimize the aerodynamic impact of all the internal components. Any details like filter surface, electrical panel design or piping positioning ensure a significant reduction of the internal air pressure drop comparing with a standard AHU that immediately becomes a benefit in terms of reduced unit power consumption.
- As a result of the latest evolution of the EC fans technology, unit energy efficiency improves. Utilizing powerful fans, unit cooling capacity increases more than 5% with the same unit footprint.
- The unit performance is certified by laboratory tests, thus delivering high rating accuracy. The performance tolerance respects strict parameters, granting an enhanced unit's reliability.

Cooling Continuity

- The cooling redundancy execution allows to split the unit in two independent models inside the same frame. In case the first model fails, the second one doesn't need to stop and can keep cooling the IT equipment without any interruption. The two models are directly connected to the same control brain, in this way avoiding in this way any interference with a cooling request from the IT equipment.
- The maximum return air working temperature is up to 45°C, this permitting the infrastructures facing the challenges of modern IT applications to develop an extremely efficient environment. Furthermore, the unit operating range can be extended up.
- The cooling override function is the best answer to increase the unit reliability, in case of control failure and during the re-booting time, limiting cooling interruptions to the IT equipment.

Smart Control

- Vertiv™ Liebert® iCOM™ embeds specific algorithms developed specially for non-raised floor application, ensuring precise and constant control of airflow and temperature under all working conditions
- Ready for Teamwork of up to 32 units with optimization based on installation type, furthermore it allows for advanced control functionality (sharing sensor's data, standby rotation, lead-lag, cascade operation and rotating master function).
- Unit power consumptions and cooling gross capacity can be calculated thanks to specific algorithms and the direct communication between the control, sensors, valves, and the EC fans. This allows the monitoring of the unit energy efficiency through the BMS system.

Vertiv's Customer Experience Center located in Tognana (Padova - Italy)

The site includes 6 different laboratories and is specifically designed for customers to interact with Thermal Management data center technologies. Lab 7 is dedicated to test and validate Large Indoor units including Vertiv™ Liebert® CWA.

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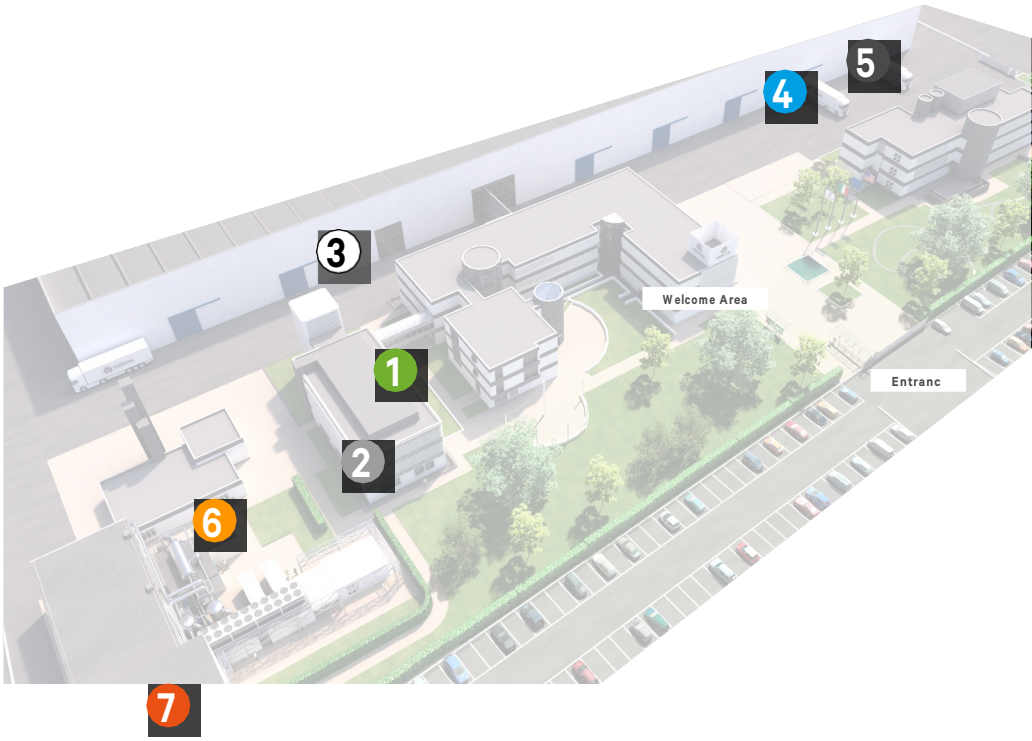


1 R&D Validation Lab 1

The Research & Development Validation Lab 1 is specifically designed to test floor-mount units and can balance a thermal load of up to 150 kW with a chamber air temperature between 0°C and 60°C.

2 R&D Validation Lab 2

Designed for conditioners belonging to the Telecom sector, the Research & Development Validation Lab 2 includes two different testing chambers: one simulating internal ambient conditions from 0°C to 60°C and the other simulating external ambient conditions from -32°C to 60°C. This validation area can balance a thermal load of up to 100 kW (50 kW in each room).

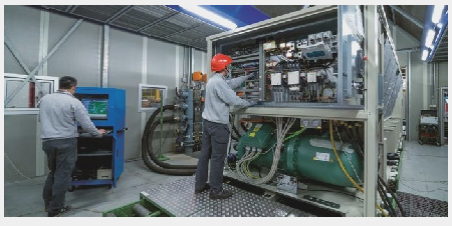
3 Floor-Mount Validation Lab

The lab is equipped with a highly automated testing chamber, this validation area can balance a thermal load of up to 200 kW and can simulate a test environment within a temperature range of 0°C to 60°C.

4 Evaporative Cooling Innovation Lab

Dedicated area to test the state-of-the-art Liebert EFC - Vertiv's highly efficient indirect evaporative freecooling unit. Testing parameters include IT loads of up to 450 kW and an airflow of up to 120,000 m^3 per hour at any external ambient temperature required to simulate typical peak conditions across the EMEA region.

5 Freecooling Chiller Validation Area



The Freecooling Chiller Validation Area is able to balance a thermal load of up to 1600 kW with a chamber air temperature between 20°C and 50°C and chiller water set point between 5°C and 20°C.

6 Adiabatic Freecooling Chiller Innovation Lab

This latest designed lab can test units with cooling capacities up to 1.5 MW with state-of-the-art accuracy in a broad range of working conditions, from -10°C to +55°C, also for adiabatic units.

7 Large Indoor Innovation Lab

This latest designed lab can test up to 400 kW and 100,000 m3/h, with operating conditions between +10°C and 50°C.

Vertiv™ Liebert® CWA | Chilled Water Thermal Wall Unit

Vertiv™ Liebert® CWA Chilled Water Thermal Wall	CA40	CA60	CA80
Single Circuit - Cooling Capacity			
Net Sensible Cooling Capacity - High Technology Coil [kW]	250	350	500
Power input [kW]	10.2	12.1	21.7
Airflow Range [m3/h]	47500	110000	150000
Number of Fans	4	6	8
Dimensions			
Length (mm)	1480	1480	1480
Width (mm)	2230	3050	3960
Height (mm)	3670	3670	3670
Operating Modes			
Smart Coil RAT 36°C 30% RH; Water I/O 20°C - 32°C; ESP 20Pa			
EC Fan Advance - HE			

Rely on a Higher Level of Service Expertise for Thermal Management in Your Data Center

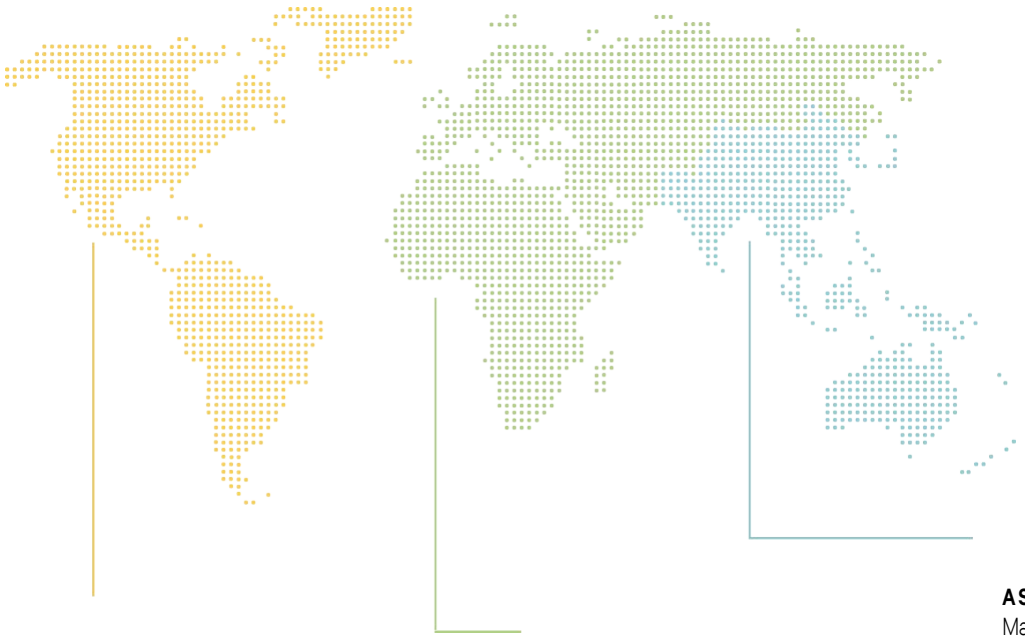
Who is better prepared to meet the service needs for your thermal management system than the company that pioneered the precision air conditioning market? We're a world leader in research and development of innovative products that protect mission-critical thermal applications and have been supporting data centers around the world for decades.

After all, there's a vast difference in the expertise necessary to address the comfort cooling needs of a normal building and the thermal management needs of your sensitive and sophisticated data center. An incorrect repair procedure by improperly trained technicians, or the use of non-genuine parts, can have a profound effect on your equipment performance, your data center availability, and your energy costs.

The factory trained and certified technicians of Vertiv know the difference. We are equipped to maximize the performance and efficiency of your thermal management system as no one else can.

Supporting Your Business Around the Globe

We bring our combination of strengths to life on a global scale, ensuring that we're able to serve you wherever you do business. Vertiv has the largest factory-trained service force with more than 2,700 field engineers, together with the capability to support you remotely with a comprehensive range of remote Services and Software Solutions. Our service team members are located in virtually every major country across the globe and are backed by more than 330 technical support/response personnel. This means that no matter where you operate, you are covered by the most knowledgeable engineers and technicians available, giving you relief from any concern.



Our Presence

GLOBAL PRESENCE

Manuf. and Assembly Locations **23**
Service Centers **290+**
Service Field Engineers **3,300+**
Technical Support/Response **250+**
Customer Experience Centers/Labs **14**

AMERICAS
Manuf. and Assembly Locations **10**
Service Centers **170+**
Service Field Engineers **1,500+**
Technical Support/Response **105+**
Customer Experience Centers/Labs **5**

EUROPE, MIDDLE EAST AND AFRICA
Manuf. and Assembly Locations **9**
Service Centers **65+**
Service Field Engineers **620+**
Technical Support/Response **75+**
Customer Experience Centers/Labs **5**

ASIA PACIFIC AND INDIA
Manuf. and Assembly Locations **4**
Service Centers **55+**
Service Field Engineers **1,190+**
Technical Support/Response **70+**
Customer Experience Centers/Labs **4**

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