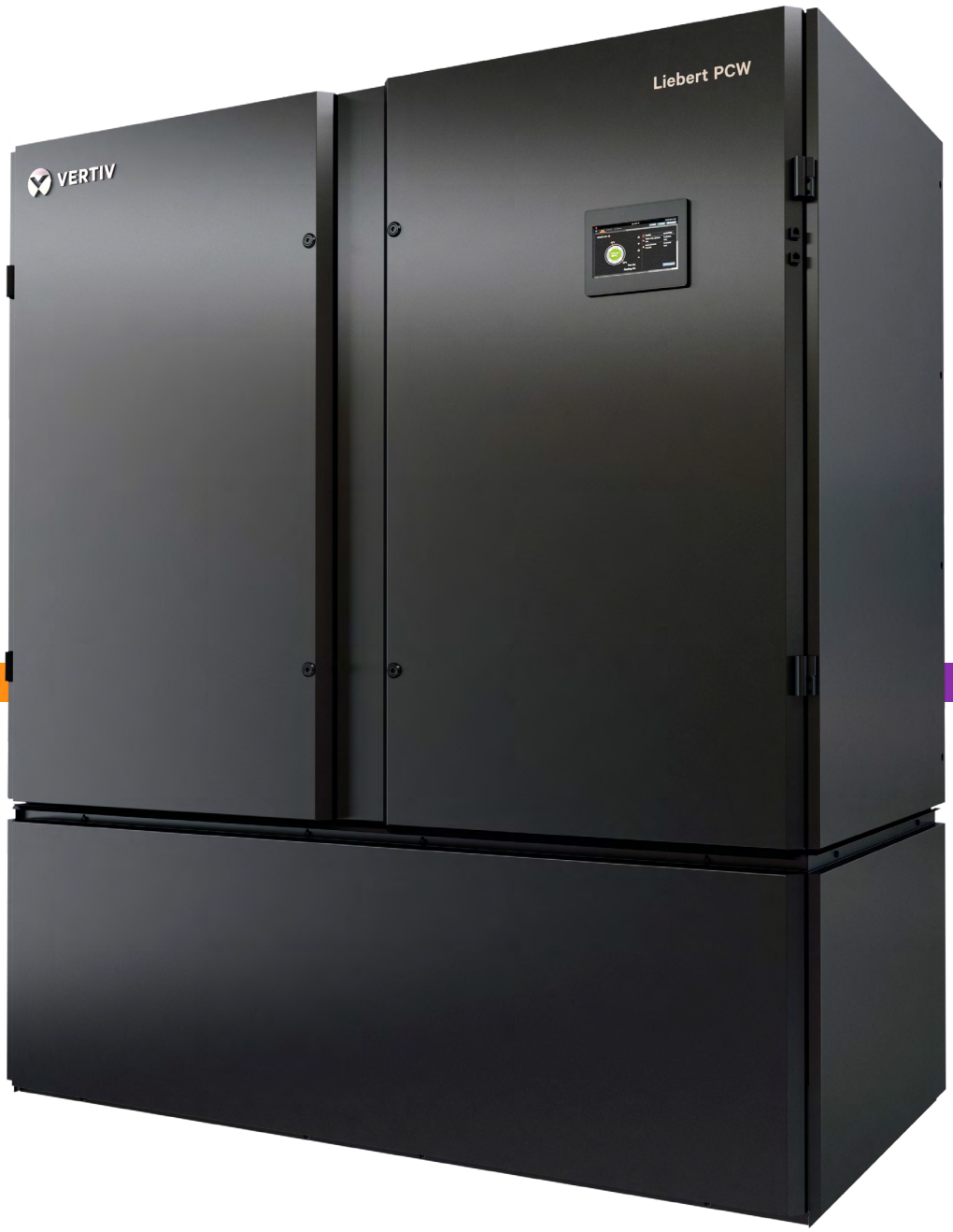
Vertiv™ Liebert® PCW

Chilled Water Perimeter Unit
from 25 to 400 kW



EUROVENT CERTIFIED PERFORMANCE
www.eurovent-certification.com

Vertiv™ Liebert® PCW | Chilled Water Perimeter Unit

Liebert® PCW is Designed to Lead the Thermal Management Market for Chilled Water Perimeter Units for All Data Center Configurations

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

Liebert PCW, due to new advanced technologies, matches requirements for cooling continuity coming from the most trusted and approved certification authorities for data center design and operation. The Liebert PCW ensures precise and constant control of airflow, temperature, and humidity under all working conditions. Cooling continuity and reliability are key factors for Liebert PCW and mission critical infrastructures.

Liebert PCW adapts perfectly to each data center's room air condition and water temperature requirement. A wider operating range allows users to remain a step ahead of new challenges posed by data center requirements and climate change. Liebert PCW is an extremely flexible unit able to adapt to different site needs.

Liebert PCW uses algorithms developed and perfected over fifty years of business experience and comes now with a new 7" touch screen display for quicker and easier data readability.

Value of Liebert® PCW Range

Features

- Latest generation of EC fans
- Eurovent certified performance
- Pressure independent control valve
- Multiple enhanced coils
- Cooling override function
- Virtual Display

How You Benefit

- Powerful fans increase the cooling capacity at the same unit footprint.
- Delivers performance rating accuracy, certified by an independent organization.
- System energy efficiency increased due to a better water distribution.
- Ad-hoc coils to best suit the new data center market trends.
- Even in case of a control failure, the unit can guarantee cooling continuity.
- Through a web browser, all the functionalities of the standard display can be replicated.

Vertiv™ Liebert® PCW

At Vertiv we believe that being mindful of product design, development, use, and disposal are important to the longevity of our industry.

Checkout these environmentally conscious features of the Liebert® PCW:

- The unit design minimizes the aerodynamic impact of all the internal parts ensuring a significant 10% 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.

Vertiv™ Liebert® PCW Versions

Configurations

- From 25 to 400 kW
- From 1 to 8 fans
- Single or Dual Circuit
- More than 4 air delivery configurations

Main Options:

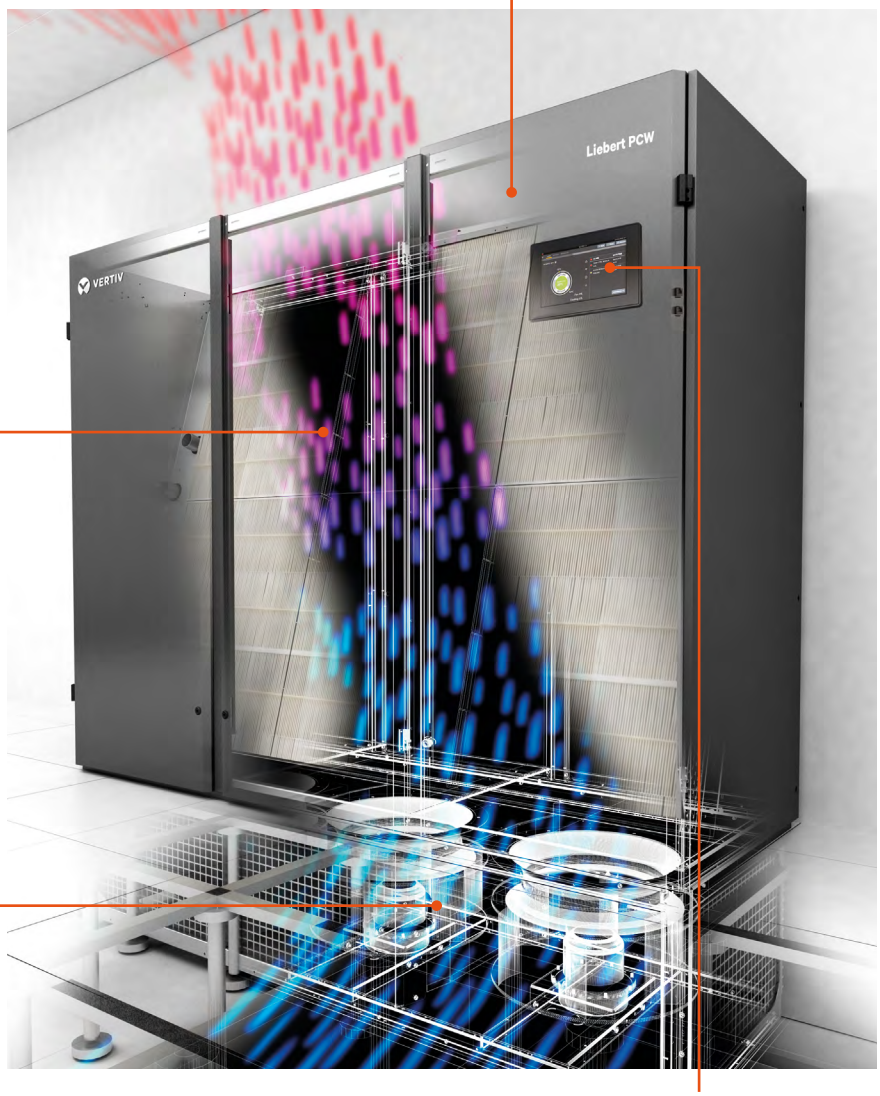
- Touch Screen Display
- Pressure Independent Control Valves
- Dual power supply with Control Power Continuity
- Electrical/Water heating system
- Electrode, Infrared or Ultrasonic humidifier
- Air Economizer for Direct Freecooling
- Damper and Extension Hood

Cooling Continuity

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

Energy Efficiency

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



Flexibility

Vertiv™ Liebert® PCW perfectly adapts to each data center's room air condition and water temperature requirements. This unit is extremely flexible, with regards to airflow configurations, chilled water connections type, and electrical arrangements.

Vertiv™ Liebert® iCOM™ Smart Control

The Liebert® iCOM™ control manages and optimizes the overall system. It is fully-programmable via an advanced and user-friendly touch display and can be linked with common BMS protocols, allowing remote supervision.

Energy Efficiency

- The unit design minimizes the aerodynamic impact of all the internal parts; any detail like coil shape, coil size, coil angle, electrical panel design, fan separator has been optimized, ensuring a significant 10% reduced internal air pressure drop that immediately becomes a benefit in terms of reduced unit power consumption.
- Eurovent certified performance guarantees independent testing, thus delivering rating accuracy and enhancing the unit's reliability. The new IT Cooling program updates performance tolerance, introducing stricter values than previous ones.*
- 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.
- Pressure independent control valves regulate and maintain a constant flow to the unit as water pressure in the system varies. Delivering better water distribution and thus increasing overall system energy efficiency.

Cooling Continuity

- Dual circuit units integrate in the same frame two independent chilled water circuits, which can be connected to two different water loops. In case the first circuit fails, the second one can substitute and provide the necessary cooling back 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.
- The airflow continuity is guaranteed until the last unit fan is able to run.
- In case of control sensor failure, the unit automatically adapts in order to grant the necessary cooling/airflow continuity. A redundant sensor can be installed and activated only if the first one breaks or is missing.

Flexibility

- Multiple enhanced coils permit to best suit the different market trends, in terms of room air conditions and water temperature requirements, adapting perfectly to each data center's working condition.
- More than 4 airflow configurations, chilled water connections provided in three different positions with different terminals allow the units to adapt to any data center layout and configuration.
- Electrically, units can be fed with two power sources combined with an ATS for full back-up or with two separate lines, one for the main devices and the other for the auxiliaries. Control power continuity can keep the CPU and BMS on for at least 1 minute during a power outage.
- The maximum return air working temperature is up to 45°C, this permits the infrastructures facing the challenges of modern IT applications to develop an extremely efficient environment.

Vertiv™ Liebert® iCOM™ Smart Control

- 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).
- The Liebert® iCOM™ software embeds a comprehensive algorithm library with more than 10 different strategies to control temperature/humidity & airflow developed for adapting perfectly to the different data center solutions.
- A virtual display can replicate, through a web browser, all the functionalities of the standard display, either remotely or connecting a laptop on the ethernet port directly to the frontal door.
- Unit power consumptions and cooling gross capacity can be calculated thanks to specific algorithms and the direct communication between the control, sensors and the EC fans motor. This allows the monitoring of the unit energy efficiency through the BMS system.

* Check ongoing Eurovent certification validity: www.eurovent-certification.com

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

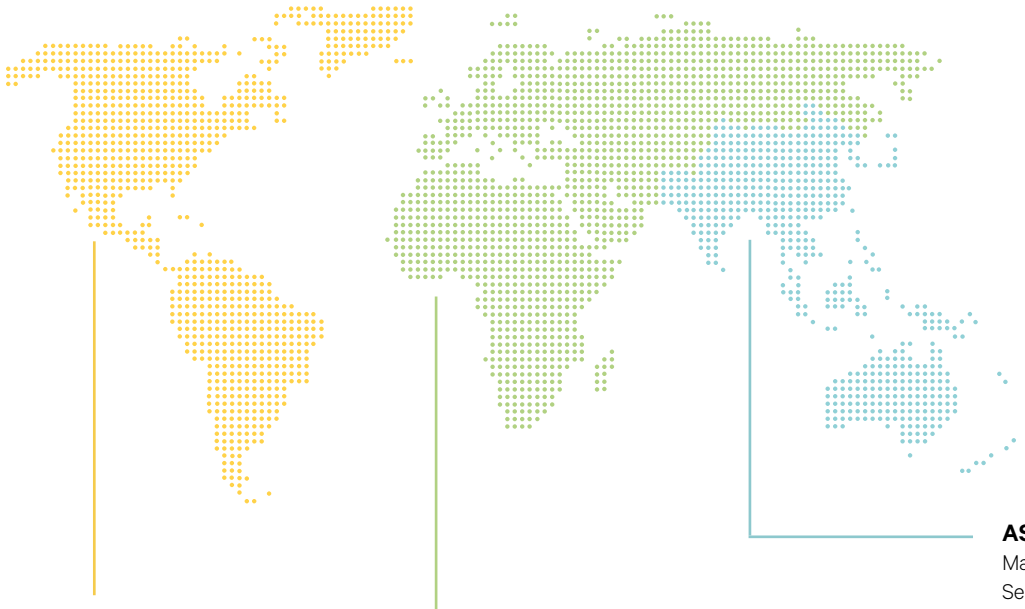
Who is better prepared to meet the service needs for your thermal management system than the company that pioneered the precision air conditioning market? We're a world leader in research and development of innovative products that protect mission-critical thermal applications and have been supporting 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 3,300 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 250 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**

Vertiv™ Liebert® PCW | Chilled Water Perimeter Unit

Vertiv™ Liebert® PCW - Standard Height			PW025	PW030	PW035	PW040	PW045	PW060	PW070	PW080	PW095	PW110	PW145	PW170
Single Circuit Cooling Capacity	Net Sensible Cooling Capacity Legacy Coil	kW	29	34.3	38.1	44	47.9	68.5	74.6	87.2	105.4	120.6	144	170.9
	Net Sensible Cooling Capacity Smart Coil	kW	-	35.7	-	45.8	-	77.2	-	91.6	-	126	143	170.4
	Net Sensible Cooling Capacity Eco Coil	kW	28.4	-	39.2	-	51.5	68	76.1	-	104.6	-	-	-
Dual Circuit Cooling Capacity	Net Sensible Cooling Capacity Legacy Coil	kW*	-	-	-	35.3	-	52.7	-	63.7	-	87.2	99.7	119.3
Power input		kW	1.39	1.83	1.45	1.69	1.56	2.85	2.67	3.63	4.2	5.37	6	7.39
Airflow Range [%]		m3/h	2600 12000	2900 12000	3400 16000	3400 16000	5300 18000	5400 27000	6700 30400	7200 30000	9000 41000	10300 42000	12000 50000	13000 55000
Spare Capacity		%	25	15	20	20	20	20	25	15	20	20	15	20
Dimension	Length	mm	844	844	1200	1200	1750	1750	2050	2050	2550	2550	2950	3350
	Width	mm	890	890	890	890	890	890	890	890	890	890	890	890
	Height	mm	1970	1970	1970	1970	1970	1970	1970	1970	1970	1970	1970	1970
Unit Configuration	Down Flow UP Fans Over the Raised Floor		•	•	•	•	•	•	•	•	•	•	•	•
	Up Flow		•	•	•	•	•	•	•	•	•	•		
	Frontal		•	•	•	•	•	•	•	•	•	•		
	Downflow Down Fans in Raised Floor				•	•	•	•	•	•	•	•	•	•

Operating Modes
Legacy - RAT 26°C 40% RH; Water I/O 10°C - 15°C; ESP 20Pa; Downflow Up; Fan Advance - HE
Smart - RAT 35°C 30% RH; Water I/O 18°C - 26°C; ESP 20Pa; Downflow Up; EC Fan Advance - HE
Eco - RAT 30°C 30% RH; Water I/O 8°C - 15°C; ESP 20Pa; Downflow Up; EC Fan Advance - HE

Vertiv™ Liebert® PCW - Extended Height			PW046	PW066	PW091	PW136	PW161	PW201	PW400
Single Circuit Cooling Capacity	Net Sensible Cooling Capacity Legacy Coil	kW	49.4	75.9	95.9	134.9	164.3	206	400
	Net Sensible Cooling Capacity Smart Coil	kW	53.9	61.7	73.1	103.2	119.2	147.3	400
Dual Circuit Cooling Capacity	Net Sensible Cooling Capacity Legacy Coil	kW*	39.9	61.7	73.1	103.2	119.2	147.3	
Power input		kW	2.22	2.41	3.15	4.95	6.48	9.23	15.7
Airflow Range [%]		m3/h	4600 - 18000	7600 - 31000	8300 - 33000	12000 - 47000	13000 - 50000	14600 - 61000	25000-102000
Spare Capacity		%	10	30	20	20	10	10	10
Dimension	Length	mm	1200	1750	2050	2550	2950	3350	3850
	Width	mm	890	890	890	890	890	890	1780
	Height: Coil + Fan	mm	1970 + 600	1970 + 600	1970 + 600	1970 + 600	1970 + 600	1970 + 600	1970+750+750
Unit Configuration	Filter Plenum								
	Down Flow UP Fans Over the Raised Floor		•	•	•	•	•	•	
	Down Flow UP Frontal air Delivery		•	•	•	•	•	•	
	Down Flow UP Back air Delivery		•	•	•	•	•	•	
	Up Flow		•	•	•				
	Downflow Down Fans in Raised Floor		•	•	•	•	•	•	•
	Downflow Down Back air Delivery		•	•	•	•	•	•	

Operating Modes
Legacy - RAT 26°C 40% RH; Water I/O 10°C - 15°C; ESP 20Pa; Downflow Up; Downflow Down for PW400; EC Fan Advance - HE
Smart - RAT 35°C 30% RH; Water I/O 18°C - 26°C; ESP 20Pa; Downflow Up; Downflow Down for PW400; EC Fan Advance - HE
* with one circuit running

Vertiv™ Liebert® PCW - High Chilled Water DT			PW51W	PW50W	PW60W	PW70W
Single Circuit Cooling Capacity	Net Sensible Cooling Capacity High Technology Coil	kW	111,4	135,7	152,3	173,7
Dual Circuit Circuit Cooling Capacity	Net Sensible Cooling Capacity High Technology Coil	kW*	-	99.5	112.7	128.3
Power input		kW	4,78	4,99	5,47	6,7
Airflow Range [%]		m3/h	15000 - 47500	15000 - 47500	15000 - 50000	15000 - 60200
Spare Capacity		%	25	15	10	15
Dimension	Length	mm	2550	2550	2950	3200
	Width	mm	1050	1050	1050	1050
	Height: Coil + Fan	mm	2350 + 600	2350 + 600	2350 + 600	2350 + 600
Unit Configuration	 Downflow Down Fans in Raised Floor		•	•	•	•
	 Downflow Down Back air Delivery		•	•	•	•

Operating Modes

High Temperature - RAT 35°C 30% RH; Water I/O 20°C - 32°C; ESP 20Pa; Downflow Down - Open Door; EC Fan Advance - HE

* with one circuit running

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