



Vertiv™ Liebert® CRV

from 10 to 46 kW

Efficient Cooling for IT Equipment



Vertiv™ Liebert® CRV from 10 to 60 kW

Vertiv™

Vertiv designs, builds and services mission critical technologies that enable the vital applications for data centers, communication networks, and commercial and industrial environments. We support today's growing mobile and cloud computing markets with our portfolio of power, thermal, infrastructure management products, software and solutions, all complemented by our global service network. Bringing together global reach and local knowledge, and our decades-long heritage including brands like Chloride®, Liebert®, Geist® and NetSure™, our team of experts is ready to take on your most complex challenges, creating solutions that keep your systems running — and your business moving. Together, we're building the future of a world where critical technologies always work.

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Liebert® CRV Row-Based Cooling

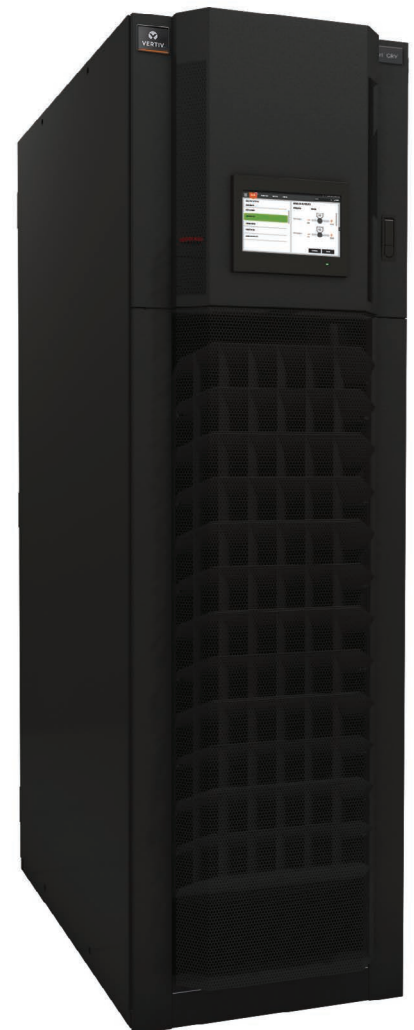
The Liebert CRV, row-based cooling unit is optimized to ensure maximum cooling capacity in a minimal footprint. Targeted for small and medium data centers, as well as edge computing locations the unit provides cooling at the server rack level.

The Liebert CRV has been designed to deliver the highest efficiency and availability, by removing heated air from the data center hot aisles, using it to return cooled air to the servers (cold aisle). The Liebert CRV is available in Direct Expansion, as well as Chilled Water versions and in two frame widths - 600 mm and a compact 300 mm. Providing full capacity and airflow modulation to match the servers' load, the unit is able to deliver energy savings via its compressor with capacity modulation, Electronic Expansion Valve and variable speed EC Fans. All this leads to very low operating costs with maximum availability. The

Liebert CRV is a comprehensive row-based solution that includes all of the main functions fundamental to cooling units, such as cooling, humidification, dehumidification, re-heating, air filtration, condensation management, temperature and humidity control, alarm functions and data communications.

Furthermore, the unit enhances its performances and energy efficiency through the Vertiv™ iCOM™ Control, capable of optimizing unit operations by leveraging on its intelligent management of system components. All components are easily accessible from the front and the rear of the unit, granting simplified service intervention.

The unit also allows ease of installation, through simplified cable and pipes routing from top and bottom of the unit.



Vertiv™ Liebert® CRV 600mm

Designed to Optimize IT Performance

The Vertiv™ Liebert® CRV in-row cooling unit is ideal for the cooling of data center rows.

The Liebert CRV is a multi-option, precision air conditioner that delivers temperature and humidity control, as well as filtration and notification management, ensuring that data center temperatures are maintained at an optimum level.

The unit is designed to continuously monitor variations in heat loads and instantly deliver the most efficient and effective cooling necessary.

Liebert CRV: Simple, Safe, Adaptable

The Liebert CRV is a plug-and-play unit with the capability of addressing the needs of both open and contained applications.

Cooling is provided at the server rack level rather than the room level. The Liebert CRV removes and filters hot air from the data center aisles, using it to return cooled air to the servers.

The integrated air diffusers accurately direct the airflow towards the necessary direction of the heat load.

Furthermore, Liebert CRV is designed to comply with mission-critical requirements and ensure that servers are maintained at the correct temperature and humidity levels.

For low operational costs, the Liebert CRV provides the exact level of cooling required by servers, modulating the airflow and cooling capacity.

The unit is available in two versions to meet various installation demands:

- A stand-alone, direct expansion system with variable capacity up to 36 kW, available in both 300 mm and 600 mm versions, complete with roof or wall-mounted condenser
- A chilled water system with up to 46 kW of capacity available in both 300 mm and 600 mm versions

Features and Performance

- Units ranging from 10 to 46 kW with chilled water and direct expansion versions
- Industry's highest energy saving levels achieved - increase of up to 50% when the Liebert CRV is combined with Vertiv™ SmartAisle™ cold aisle containment
- Best-in-class Thermal Management unit for row-based applications
- On-site adjustment capability of air diffuser distribution direction maximizes cooling results
- Integrated Vertiv ICOM™ Control for management of capacity and airflow through EC Fans and variable capacity Compressor
- Ideal for scalable IT infrastructure - increased cooling capacity, reduced noise levels and enhanced efficiency when compared with similar chilled water and direct expansion configurations.



Ensuring Availability Under All Working Conditions

Maintaining IT Infrastructure Availability

With integrated Vertiv™ ICOM™ Control, the Liebert® CRV is able to monitor variations in temperature and humidity, instantly adapting its performance to meet variations in load conditions.

This furthermore ensures increased availability and safety of protected IT equipment.

The Liebert CRV's constant temperature monitoring and control capabilities ensure the availability of servers in all working conditions.

Furthermore, its parallel load sharing functionality enables the management of N+1 configurations.

Meeting Primary IT Requirements

The Liebert CRV's ability to modulate capacity allows for constant, accurate room temperature and humidity levels to be maintained.

The variable capacity capability of the Liebert CRV, contributes to increasing data center availability during both standard operations and in the event of load variations.

A reduction in its start/stop cycling function further contributes to increasing data center availability, as well as lengthening the life of critical components.

The integrated compressors with cooling capacity modulation are designed to avoid peaks in absorbed power, thus reducing the stress placed on components. The Liebert CRV uses a dedicated control that also enables the compressor to operate when the external air temperature increases above standard limits.

Extreme Flexibility for Open and Closed Architectures

Suitable For a Wide Range of Installations

The Liebert CRV addresses the cooling needs of both new and existing data center space, regardless of raised floor availability. It is ideally suited to data centers with up to 50 racks, irrespective of heat load.

Configuration Flexibility

The Liebert CRV can be configured to perform temperature as well as humidity control. The Liebert CRV 300 mm and 600 mm width versions have been designed to specifically meet the requirements of data centers in need of optimizing space occupancy, as well as capital and running costs.

The Ideal Airflow

EC Fans and compressors with variable cooling capacity, managed through integrated Vertiv ICOM Control, achieve flexible capacity and airflow for the ideal operating conditions of IT equipment.

The Liebert CRV, designed using advanced, computer-aided dynamic fluid technology, delivers optimum air distribution across rack installations. The exceptional levels of air distribution have been proven as a result of wide-scale laboratory and field testing



Customer Monitoring Interfaces

Monitoring and Control Through Existing Network Via your Web Browser

The Liebert® CRV system can be fitted with a Vertiv monitoring card allowing full advantage to be taken of the Ethernet network and remote monitoring from your computer desktop, network operations center or any network access simply utilizing a standard web browser. A standard web browser, via HTTP protocol or Network Management System software via SNMP protocol, can be used to access the unit information.

Monitoring Integration with Existing Building Management System

If required, by installing the optional monitoring card, the Liebert CRV can be monitored and controlled by an existing Building Management System. The monitoring card provides Modbus, Bacnet and SNMP protocol support.



Vertiv™ Liebert® CRV from 10 to 60 kW

Liebert® CRV Technical Data

Model	Direct Expansion				Water/Glycol			Chilled Water	
	CRD10	CR019	CR020	CR035	CR019	CR020	CR035	CR032	CR040
Net Sensible Cooling Capacity (kW)	10	20	23	36	21	23	37	27	46
Nominal Airflow (CFM)	1883	2610	2216	1615	2610	2216	1615	2500	3620
Unit Weight (lb)	509	507	739	805	545	772	849	418	728
Unit Width (mm)	300	300	600	600	300	600	600	300	600
Unit Depth (mm)	1132	1100	1100	1100	1100	1100	1100	1100	1100
Unit Height (mm)	2000	2000	2000	2000	2000	2000	2000	2000	2000

Note: Cooling Capacity tested at an air inlet temperature of 95°F, outdoor temperature for DX and W/G units of 95°F, and CW temperature delta of 10°F. For more information, please reference the CRV Data Sheet. CRD10 performance tested at Return air 29.4°C (85°F), 32% RH & 35°C (95°F) Outdoor temperature.

STANDARD FEATURES AND OPTIONS

DX Version

- High Efficiency Scroll/Rotary Compressor with Capacity Modulation (CRD10 utilizes an Inverter Driven Compressor)
- EC plug fans
- R410A Refrigerant
- Adjustable modular baffle system
- Top/Bottom connections
- Levelling feet
- Filters with up to MERV 11 filtration class and clog filter switch
- Electrode humidifier (600mm only)
- Electric reheat 1-stage (600mm only)
- Internal condensate pump
- User friendly touchscreen display
- Remote rack temperature sensors
- Monitoring card for WEB, Modbus and BACnet
- Teamworking functionality

CW Version

- EC plug fans
- 3-way or 2-way valve with 0-10V actuator
- Adjustable modular baffle system
- Top / Bottom connections
- Levelling feet
- Filters with up to MERV 11 filtration class and clog filter switch
- Electrode humidifier (600mm only)
- Electric reheat 1-stage (600mm only)
- Internal condensate pump
- User friendly touchscreen display
- Remote rack temperature sensors
- Monitoring card for WEB, Modbus and BACnet
- Teamworking functionality

ADDITIONAL OPTIONS

DX Version

- Additional remote rack temperature sensors
- Compressor jacket (600mm models)
- Dual power supply with ATS on selected models
- Optional extension frame for height 2200 mm and depth 1200mm (CRD10 only)
- Reheat and humidifier lockout (600mm only)
- Seismic rating

CW Version

- Additional remote rack temperature sensors
- Reheat and humidifier lockout (600mm only)
- Seismic rating



Liebert® CRV 300 mm DX

Coupling Air Cooled Liebert CRV Units with Air Cooled Condensers

Model	Outdoor Temperature		
	up to 95°F	up to 40°C	up to 45°C
CRD10	up to 105°F	CCD100S-00A	CCD100S-00A
CR019RA	up to 115°F	MCM040E1	MCL055E1
CR020RA	MCS028E1	MCM040E1	MCL055E1
CR035RA	MCM040E1	MCL055E1	MCM080E1

Condensers Dimensions

		Width	Depth	Height	Weight
CCD100S-00A	[mm] / [lb]	745	450	1300	123
MCS028E1	[mm] / [lb]	1080	1287	1006	154
MCM040E1	[mm] / [lb]	1168	1453	1006	231
MCL055E1	[mm] / [lb]	1410	1727	1006	344
MCM080E1	[mm] / [lb]	1168	2674	1006	441

Coupling Water/Glycol Cooled Liebert CRV Units with Drycoolers

Model	Ambient Temperature up to 95°F	Ambient Temperature up to 100°F	Ambient Temperature up to 105°F
CR019RW	DSF112_8	DSO174_8	DSO225_16
CR020RW	DSF112_8	DSO174_8	DSO225_16
CR035RW	DSO197	DSO310_16	DSO419_16

Dry Cooler Dimensions

		Width	Depth	Height	Weight
DSF112_8	[mm] / [lb]	1107	1308	1095	435
DSO174_8	[mm] / [lb]	1107	2324	1095	540
DSO225_16	[mm] / [lb]	1107	2324	1095	620
DSO197	[mm] / [lb]	1107	2324	1095	580
DSO310_16	[mm] / [lb]	1107	3340	1095	795
DSO419_16	[mm] / [lb]	1107	4356	1095	1020

Chilled Water Cooling

Chilled water cooling units may be coupled with Vertiv™ chillers (Liebert HPC or Liebert AFC series). The Liebert HPC chiller series offers a wide range of air cooled or water cooled solutions. Available with various noise thresholds and with freecooling modes, these units significantly enhance the system's energy saving capabilities. Liebert HPC freecooling chillers are available from 40 kW to 1600 kW. The Liebert AFC, Adiabatic Freecooling Chillers, are available from 500 kW to 1700 kW and are designed to maximize data center efficiency and availability.



Vertiv™ Liebert® CRV from 10 to 60 kW

Fully integrate your IT deployments with Vertiv™ solutions

Vertiv offers an industry-leading portfolio of physical infrastructure, services, and monitoring software.

Vertiv™ VR Racks

Supports a wide variety of equipment and gives you the flexibility you need with easy installation.

Vertiv™ Aisle Containment

Maximize your efficiency and capacity from the core to the edge with adaptable hot or cold aisle containment.

Vertiv™ Geist™ rPDU

Reliably distributes power to the rack, supporting dynamic data center operations and DCIM.

Vertiv™ Liebert® CRV

Delivers highly efficient and scalable in-row cooling to maintain optimal thermal operating conditions for maximum system reliability.

Vertiv™ Liebert® GXT5

Helps protect mission critical equipment from all power disturbances due to blackouts, brownouts, sags, surges or noise interference

Vertiv™ Services

Protect your critical IT system with a host of Vertiv services for all products listed above. When your business relies on high system performance and availability, having Vertiv certified technicians on hand to provide their expertise should be your top priority.



“Services available from global leaders in data center infrastructure services. Nobody keeps more data centers up and running than Vertiv.”

Want to Learn More?

Contact us: AskTheExpert@Vertiv.com



Racks & Containment



IT Management



Power Distribution



Thermal Management



UPS Battery Backup



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