Precision Cooling
For *Business-Critical Continuity™*

Liebert® CW™ 26-181kW

Chilled Water Cooled Precision Air Conditioning For Data Centers

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DATA CENTER SOLUTIONS
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Sales@PTSdcs.com

EMERSON
Network Power

A Chilled Water Precision System That Handles The Most Demanding Conditions

EC Plug Fans are available on downflow models. Shown in underfloor configuration.

Based on the historically reliable design of the Liebert Deluxe System/3, the Liebert CW continues this reputation for dependability, and improves upon the design with energy saving upgrades. The Liebert CW chilled water based precision cooling system is specifically designed to handle the high heat loads generated by computers and other electronic equipment, using an existing building chiller as a source of chilled water cooling.

Built to the highest specifications in the industry with proven components and design, the Liebert CW is ideal for critical applications including:

- Data centers
- Telecommunications central switching offices.
- Industrial process control centers.
- Laboratories.
- Medical facilities.

The Industry's Premier Chilled Water System

Flexibility

- Provides a complete environmental control package, including both precision air conditioning and humidity control.
- Both upflow and downflow configurations are available to cover raised floor and non-raised applications.
- Liebert iCOM control system brings high-level supervision to multiple units, allowing them to work together as a single system to optimize room performance.

Higher Availability

- Designed with the highest quality components selected for their proven reliability and performance.
- Provides around-the-clock operation to protect critical installations.
- Operates with a high sensible heat ratio, assuring that proper humidity levels will be maintained.
- Liebert iCOM control system adds automatic sequencing of components to even wear and extend service life.

Lowest Total Cost of Ownership

- Uses existing building chilled water systems to provide cooling.
- Higher efficiency fan options include EC Plug Fan on larger downflow models and variable speed drive centrifugal fans available on all models.

Service Solutions

Liebert Services capabilities can increase the availability of your precision cooling equipment by reducing downtime due to component failure. This is especially valuable to companies who do not have a dedicated technician on-site to troubleshoot equipment. Field service is provided by a nationwide network of locally-based, factory-trained technicians for installation, support and maintenance of Liebert precision environmental products. Liebert Services offerings include warranty service, emergency coverage and preventive maintenance. We also offer an environmental equipment site management program that creates a customized solution for your site by offering a single point of contact for your service needs.

A Choice Of Configurations

More Configurations to Fit More Applications

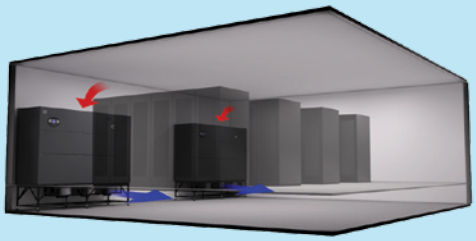
High performance, sensitive electronic equipment requires precise, reliable control of room temperature, humidity and airflow for proper operation. Liebert CW meets these needs for environmental control in computer dependent operations. It is available in sizes from 26-181kW, and in airflow configurations to meet unique applications.

Downflow Supply

Designed for raised-floor applications, the downflow air supply configuration is commonly found in data centers and other similar facilities housing sensitive electronic equipment.

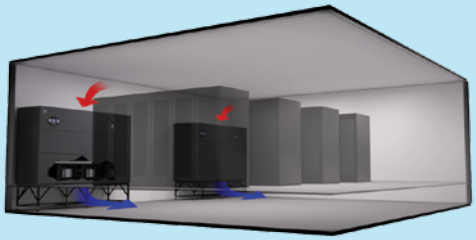
EC Plug Fans — Under Floor Configuration

With EC Plug Fans below unit in raised floor space, the system is 30 percent more energy efficient than centrifugal blowers, while providing more efficient airflow.



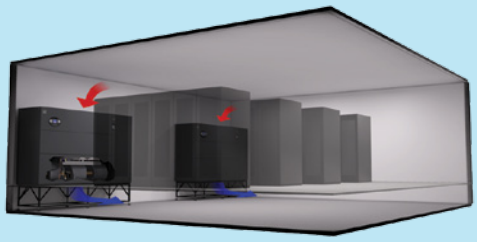
EC Plug Fans — In-Unit Configuration

Designed for applications with limited under floor space, the fans are located within the Liebert CW unit itself. This configuration provides significant energy savings over standard centrifugal fans.



Centrifugal Fans With Variable Speed Drives

Variable speed fans are located within the Liebert CW unit. This option offers considerable savings over standard fans, and is available for both upflow and downflow system configurations.



Top Front Supply With Plenum & Grille And Front Return

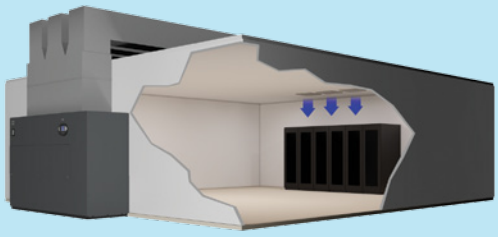
In-the-space applications without ductwork, such as Telecommunications, Networks and Switching Centers, benefit from this economical configuration. Optional high filtration may be desirable.

Top Front Supply And Front Return

Engineered for in-the-space applications utilizing duct work, this airflow design is commonly used for Telecommunications or Industrial applications. High static pressure and filtering options may be selected.

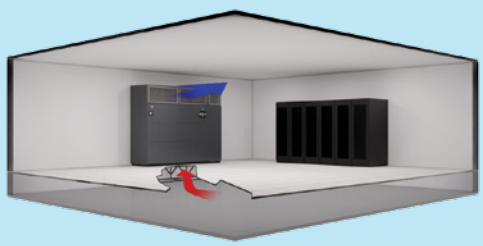
Top Rear Supply And Rear Return

Designed for use in out-of-space applications, this configuration is typical for Industrial Processes such as Control Rooms, and Labs. Many of these sites will select a higher static pressure and optional high efficiency filters. (Customer ducted supply and return)



Top Front Supply With Plenum & Grille And Bottom Return

Specifically designed for use in raised floor, in-the-room applications, this configuration takes advantage of typical computer room construction. Additional filtering may be requested to protect sensitive computers and peripherals.



Economical Chilled Water Systems

By taking advantage of your existing central air conditioning chiller, the Liebert CW provides economical, durable cooling and humidity control around the clock, throughout the year.

The Liebert CW chilled water system offers rugged, yet affordable cooling and humidity control where a central water chiller is available as a year-round cooling source. In these applications, a single chiller can be used for multiple air conditioning units, providing savings on additional heat rejection components.

The full line of Liebert chilled water systems use Liebert iCOM microprocessor-based controls to maintain precise temperature and humidity levels, while the cooling hardware is designed and built for continuous, trouble-free operation.

More Cooling Capacities

Available in ten cooling capacities, with either upflow or downflow configurations.

Chilled Water Control Valve

The chilled water valve provides proportional control action in response to room temperature and humidity as sensed by the microprocessor control. It includes operating linkage and electronic motor. Unlike other systems of this nature it requires no over-travel linkage or end switches to be adjusted. The control uses “intelligent logic” to eliminate valve hunting, thus greatly increasing the life of the valve. The valve can be a 3-way or 2-way to meet the appropriate requirements of the installed system.

EC Plug Fans in underfloor configuration
(available on downflow models)

EC Plug Fans in-unit configuration
(available on downflow models)

Every Feature Contributes To Absolute Reliability

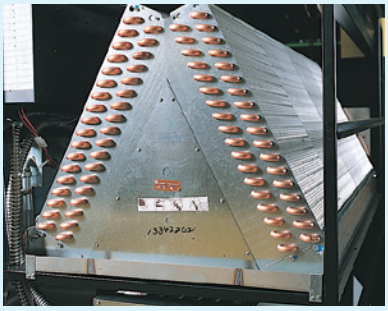
When the demand is for around the clock operation, you simply can't take shortcuts. Liebert CW is designed with robust components that operate reliably under the most demanding conditions, ensuring uptime for sensitive electronics in critical applications.

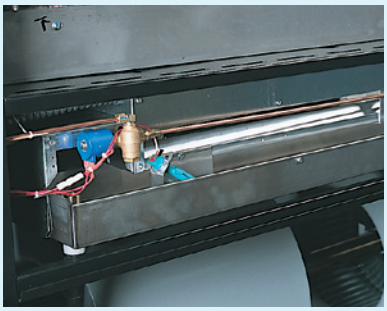
Fans And Motors

Clean, even air distribution is supplied by large capacity fans, which are balanced to minimize vibration. The fans draw filtered air through the system. An EC Plug Fan option is available for Liebert CW downflow models.

Draw-Through Airflow

The fans draw air evenly and at low velocity through the cooling coil, reheat and humidification systems. The result is fat less turbulence with superior efficiencies in heat transfer. Clean air at the right temperature and humidity is fed positively and evenly into the room.





Premium efficiency centrifugal fans, and optional Variable Speed Drive fan motors, are available on all models

A-Frame Coil

This Liebert designed and manufactured A-Frame coil features a large face area/low face velocity design for maximum cooling and even air distribution.

Infrared Humidifier

The infrared humidifier design consists of quartz lamps mounted above a stainless steel water reservoir. The lamps never come in contact with the water. When humidification of room air is required, infrared rays generate water vapor—without impurities or odor, within seconds.

Liebert iCOM®

Optimizing Cooling System Performance For Efficiency And Energy Savings

The Liebert iCOM control system offers a variety of advantages:

- Saves energy using predictive humidity control.
- Built-in lead/lag functions for enhanced system reliability.
- Wellness calculation alerts service personnel before problems occur.
- Unit-to-unit communications allows teamwork settings to keep multiple units working together to optimize energy efficiency.

iCOM At A Glance

The Status menu shows setpoints, environmental conditions, operational status, alarm conditions and system health.

- Graphical view
- Simple view
- Display icons
- Access levels—user, service, advanced
- Help menu layout
- Temperature and humidity graphs
- Online help menus

Small Graphic Display Model

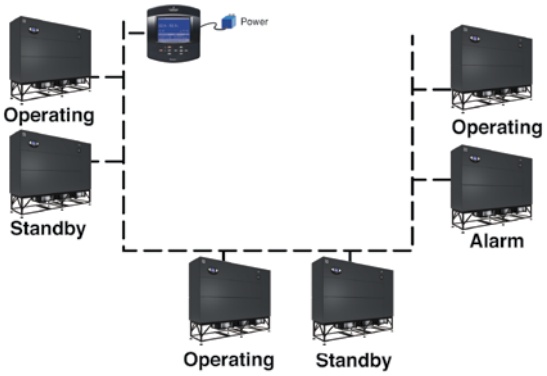
The Liebert iCOM with small display has a 128 x 64 dot matrix screen that simultaneously shows two menu icons, along with descriptive text. This display is capable of controlling only the unit it is directly connected to. Views include:

- Event log
- Temperature and humidity graphs
- Standby/lead/lag
- Unit wellness
- Service contact information

Large Graphic Display Model

The Liebert iCOM with large display has a 320 x 240 dot matrix screen that shows up to 16 menu icons at a time, as well as descriptive text. This display can be used to control a single cooling unit or any cooling unit on a network, regardless of how it is connected—either integrated into a cooling unit or simply connected to the network and mounted remotely. It provides the same information as the small display plus these additional views:

- Spare parts list
- Unit diary
- View status of all cooling units
- Control any cooling unit on network
- View system averages of entire cooling unit network



U2U Configuration 2
Liebert CW units with Small Graphic Display may be centrally monitored and controlled with the Optional Wall Mounted Display.

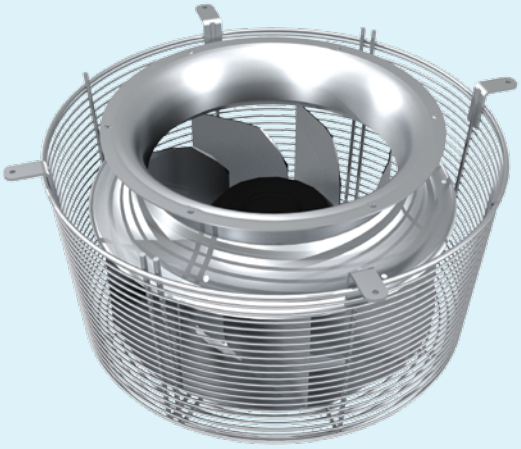
The Optional Wall Mounted Large Graphic Display provides centralized monitoring and control of connected Liebert CW units.

The optional vNSA with iCOM combines a Wall Mounted Large Graphic Display along with a network switch to facilitate U2U wiring in one convenient cabinet.

A Choice Of Fans To Fit Every Application Requirement

Our downflow floormount Liebert CW models are now available with energy efficient EC Plug Fans.

These energy efficient fans add to the superior efficiency already achieved by the use of a traditional variable speed drive system. In fact, many utility companies offer a rebate for using these energy efficient options—check with your local utility for details.



The Liebert CW with EC Plug Fan delivers energy efficiency gains via the fan system. These electrically commutated fans are a backward curved motorized impeller powered by a direct drive DC Motor with integrated AC-DC conversion.

This design uses less energy than standard centrifugal blowers by lowering motor kW. The EC Plug Fan uses 10-30% less energy on average than standard AC motors.

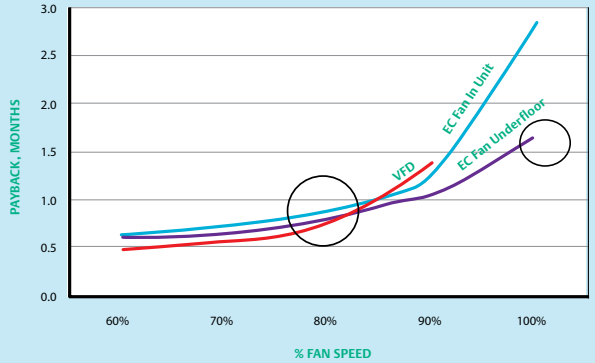
The EC Plug Fan is located in the area beneath the raised floor or within the unit. Superior energy savings can be realized with the fans located beneath the raised floor. Placing the fan in the raised floor space, is 30 percent more energy efficient than centrifugal blowers. The EC Plug Fan also provides greater energy savings than variable speed drives.

Optional Energy Saving Variable Speed Drive Fan Motor

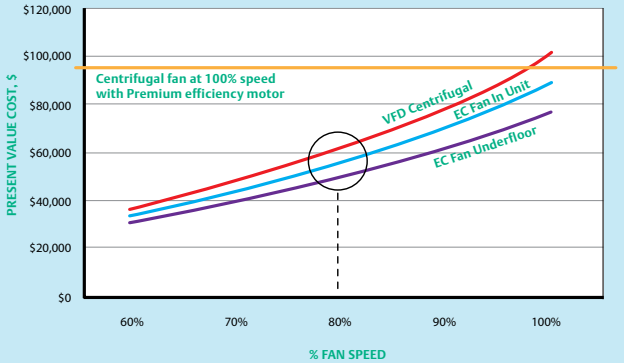
All Liebert CW models are also available with an optional variable speed drive on the fan motor used to drive centrifugal blowers, matching the motor speed to the room cooling requirements. This feature allows the unit to use far less motor energy to move room air.

This drive is controlled by the Liebert iCOM control system to match the speed of the blower with the chilled water valve position and consequently the load in the room. This option eliminates excessive energy use due to an oversized design or changing room conditions.

Real World Energy Savings



The energy saving capabilities of the Liebert CW with EC Plug Fans or variable speed drive fans result in a quick payback through lower electricity costs.



Example shows Liebert CW106 @.10/kWH.

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Ensuring The High Availability Of Mission-Critical Data And Applications.

Liebert CW Chilled Water System Specifications

Deluxe CW Capacity Data 50 Hz and 60 Hz Chilled Water Systems

CAPACITY DATA kBTU/HR (kW) [BASED ON 45°F (7.2°C) ENTERING WATER. 10°F WATER RISE

		75°F DB, 62.5°F WB (23.9°C DB, 16.9°C WB) 50% RH	75°F DB, 61°F WB (23.9°C DB, 16.9°C WB) 45% RH	72°F DB, 60°F WB (22.2°C DB, 15.5°C WB) 50% RH	72°F DB, 58.6°F WB (22.2°C DB, 14.8°C WB) 45% RH
CW026*	Total	92 (26.8)	87 (25.4)	72 (21.2)	72 (21.2)
	Sensible	86 (25.10)	87 (25.4)	72 (21.20)	72 (21.2)
CW038*	Total	130 (38.1)	121 (35.4)	104 (30.4)	100 (29.3)
	Sensible	114 (33.3)	117 (34.2)	99 (29.1)	100 (29.3)
CW041*	Total	177 (51.7)	158 (46.3)	139 (40.6)	129 (37.9)
	Sensible	137 (40.2)	140 (41.0)	121 (35.5)	125 (36.7)
CW051*	Total	196 (57.5)	184 (53.9)	155 (45.4)	152 (44.6)
	Sensible	174 (51.1)	180 (52.7)	152 (44.4)	152 (44.6)
CW060*	Total	280 (82.0)	251 (73.6)	220 (64.4)	204 (59.8)
	Sensible	216 (63.4)	221 (64.8)	191 (55.9)	198 (57.9)
CW076*	Total	279 (81.8)	256 (75.1)	219 (64.3)	211 (61.7)
	Sensible	238 (69.7)	244 (71.6)	208 (60.9)	211 (61.7)
CW084*	Total	359 (105.1)	320 (93.8)	282 (82.6)	262 (76.7)
	Sensible	278 (81.5)	284 (83.2)	245 (71.9)	253 (74.2)
CW089**	Total	395 (115.6)	353 (103.5)	313 (91.8)	286 (83.9)
	Sensible	296 (86.8)	301 (88.2)	262 (76.8)	270 (79.0)
CW106*	Total	410 (120.2)	373 (109.2)	322 (94.3)	305 (89.3)
	Sensible	339 (99.4)	348 (102.0)	298 (87.3)	305 (89.3)
CW114*	Total	517 (151.5)	463 (135.7)	409 (119.8)	372 (109.0)
	Sensible	392 (114.8)	400 (117.10)	346 (101.4)	356 (104.3)
CW146**	Total	567 (166.1)	515 (150.9)	450 (131.8)	422 (123.5)
	Sensible	456 (133.6)	469 (137.3)	405 (118.5)	418 (122.4)
CW181**	Total	811 (237.7)	725 (212.3)	645 (189.0)	589 (172.5)
	Sensible	600 (175.7)	608 (178.2)	531 (155.4)	546 (159.9)

Capacity data is certified to ASHRAE 127-2007 standard. Fan motor heat has been subtracted, resulting in "net" capacity.

*Available with Centrifugal or downflow EC Plug Fan. Centrifugal Fan capacity shown.
** Only available in downflow configuration with EC Plug Fan.

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