Next Generation Critical Cooling
for Room and Row

Liebert PEX

Efficiency And Reliability For High Availability Cooling

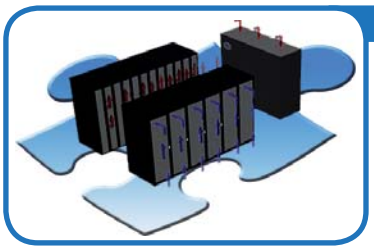
EMERSON
Network Power

We Invented Precision Cooling

Emerson Network Power knows precision cooling. After all, we invented it back in 1965! Over the years, our cooling systems have been proven as the world's standard for reliable operation. In fact, there are Liebert precision cooling systems in the field that have been in constant use for over 30 years. Installed in thousands of critical data centers around the world, our latest precision cooling portfolio offers the highest efficiency without compromising reliability.

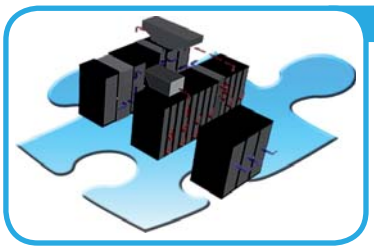
Understanding the 3 Rs of Precision Cooling

Despite the claims of different vendors promoting their own, specialized solutions, there is no silver bullet when it comes to precision cooling for every application. There is only the most appropriate cooling solution for your infrastructure, and an understanding of each cooling design can help determine which cooling approach and solution can best meet your business goals and infrastructure requirements.



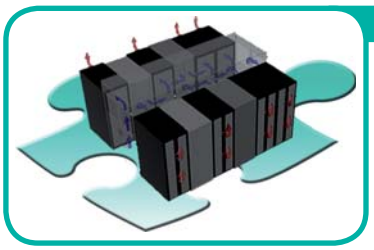
Room Cooling

While densities are climbing steadily, standard density facilities remain the norm. Traditional room cooling uses precision air conditioners and is the most appropriate solution for these standard density environments. The standard complexity, ease of deployment and precision humidity and filtration control of these systems have seen hundreds of thousands of units deployed in critical facilities across Asia, with more added every day. Combined with a raised floor, precision air conditioners deliver the best value for money and represents significant increased efficiency over building or comfort cooling.



Row Cooling

If energy efficiency is top concern, row cooling can improve efficiency over the standard room approach by more than 30 percent. It supports high density applications by the utilization of cold aisle containment. Row cooling with SmartAisle™ can further improve efficiency and provide uniform and predictable temperature and humidity control to equipment with or without raised floor.



Rack Cooling

One of the proven best-practice approaches to dealing with high density heat issues is by bringing cooling technologies closer to the source of heat. Specialized precision cooling solutions for racks can support ultra-high-density applications, up to and above 30kW per rack. This dedicated cooling approach specifically cools a rack by providing the best direct air flow intake of the critical equipment.

What's Inside

Liebert PEX

The Liebert PEX: More Than A Single Energy Efficient component

- The efficiency of the Liebert PEX is engineered into the product. Each component that goes into the Liebert PEX is carefully tested to ensure that it will contribute to its overall efficiency.
- All enchancements to energy efficiency are designed to reduce operating time and cycling of key components and increase reliability.
- In addition to having components that are individually engineered to provide the best efficiency, how these components work and interact with each other also contribute to the energy savings you get with the Liebert PEX.

Key Features Contributing To The Superior Efficiency Of The Liebert PEX

1 EC Fan

The EC fan technology regulates airflow and reduces the fan input power. In-floor configuration further reduces energy consumption in downflow units. This significantly reduces energy consumption and provides longer component life. Managed through Liebert iCOM controls, EC fans deliver airflow for the optimal operating conditions for IT equipment.

2 Digital Scroll Compressor

Liebert PEX with Digital Scroll Technology is highly reliable and is designed to achieve efficiency with flexibility and to lower TCO. The use of digital scroll technology actively manages capacity modulation from 20 percent to 100 percent. During the loaded state, cooling units consume full load power. On the other hand, during the unloaded state, the units run freely, consuming only about 10 percent of the full load.

3 iCOM Controller

The teamwork mode in the iCOM Controller, a key feature of the Liebert PEX, ensures efficiency by allowing multiple units to work together as a single system to optimize room performance.

4 Infrared Humidifier

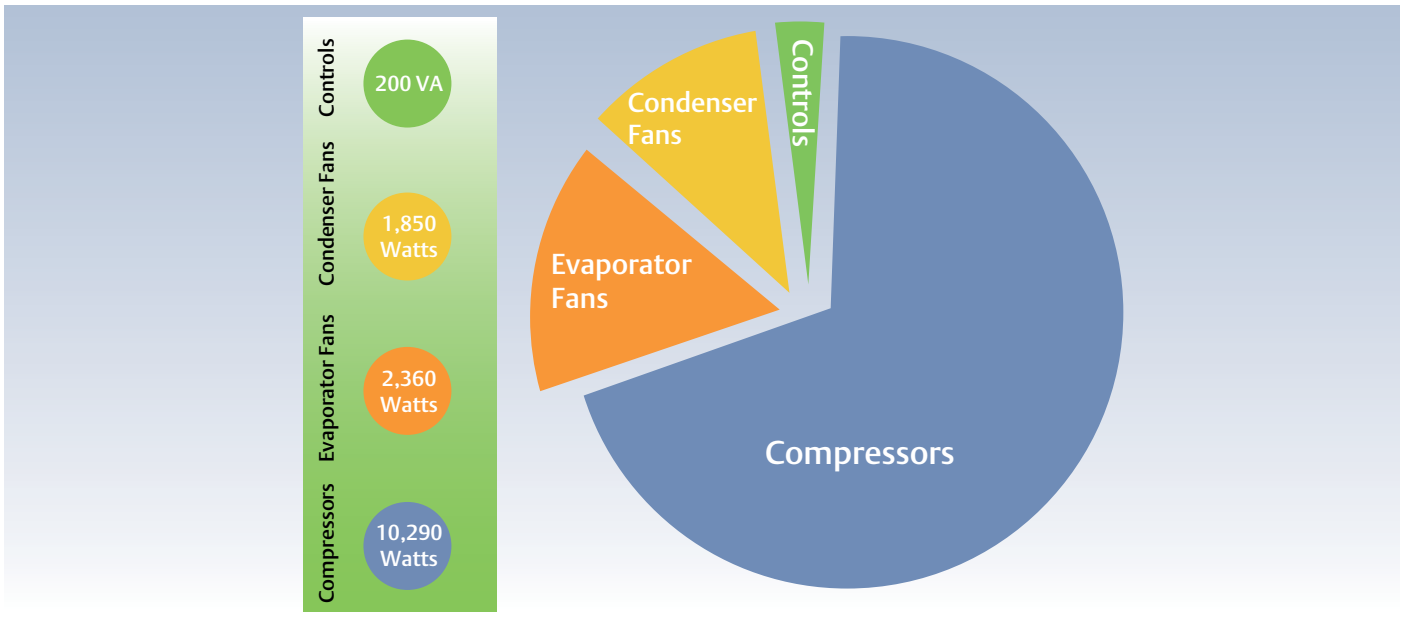
The Infrared Humidifier has been a feature on Liebert environmental control systems for over 45 years. Its rapid response and the ability to handle varying water conditions has made it an industry standard in applications that demand precise, particle-free humidity control.

5 Dual Cool Option

This option a provides a second coil that utilises the central building Chiller system water supply. The unit can function either as a DX (compressorized) or a Chilled water system. During times when the chiller supply is available compressorized operation is eliminated, reducing energy costs. In addition this option can provide increased redundancy and flexibility to the environmental control system.

6 Free Cool Option

Optional GLYCOOL free-cooling system permits compressorless operation in colder ambient conditions.

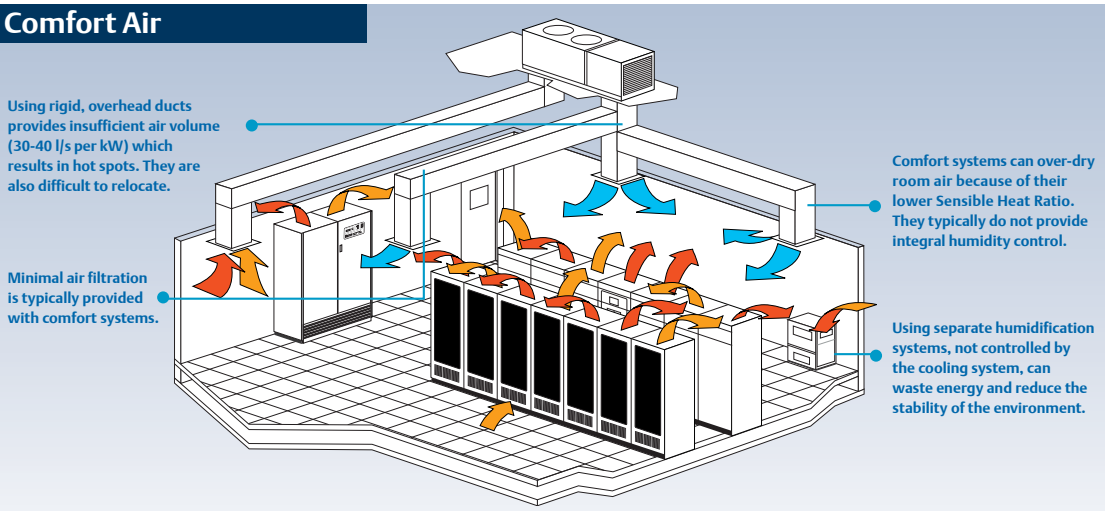


Why Precision Cooling?

Traditional approaches to cooling are only effective and efficient to a point. Unfortunately, a number of IT organizations still rely on commercial air conditioners to cool their critical facilities. Commercial air conditioning, known for its low upfront costs, is both ineffective and problematic. It does not address the needs of sensitive electronics such as year-round cooling, humidity & temperature control and air filtration, which makes Precision Cooling the only real solution for these applications.

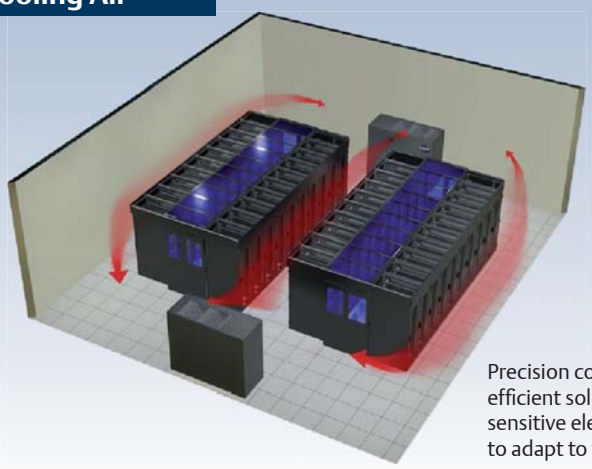
Comfort Cooling vs. Precision Cooling

Comfort Air



Comfort cooling systems are not designed for continuous operations. These systems lack the scalability, adaptability and precision required to effectively cool the server racks being deployed today.

Precision Cooling Air



Precision cooling provides a cost-effective, energy-efficient solution to the requirements of today's sensitive electronics, while enabling the flexibility to adapt to whatever the future brings.

Why run the risk of relying on building air?

- **RISK:** These systems shut down overnight on weekends
- **RISK:** Systems designed to operate 5 x 8 vs. Continuous Operation.
- **RISK:** Insufficient filtration for IT equipment and no humidity control
- **RISK:** Building air removes too much moisture, introducing the risk of static discharge
- **RISK:** Insufficient airflow causes overheating in IT equipment (Airflow designed for comfort not correct delivery for IT)
- **COST:**
  - Building air is designed to cool people (heat and sweat)
  - As a consequence a lot of energy (cost) goes into removing that moisture
  - This energy is wasted where building air is used to cool machines

* *SMB study June 2008*

Room Cooling Attributes

Energy Efficiency

Communications and Monitoring

System Supervision and Management

Multiple Configurations

Space Savings

When to Select Room Cooling

- Standard / Medium / High density environments
  - in room / raised floor
- Open architecture
  - Delivers filtration and humidity control
  - Thermal Mass minimizes risk of thermal runaway
  - Low complexity / ease of deployment
  - Broad capacity range
  - Redundancy / load sharing
  - Widest choice of cooling mediums
- Suitable for Mega Data Centers
  - For affordable and realistic redundancy
- Proven and time tested
  - Over 200,000 units deployed in Asia

Liebert PEX: Energy Efficient Room Cooling Solution

Liebert PEX is the most accessible for the broadest range of business needs. It represents a straightforward and effective solution to the majority of low to medium density applications. It reliably services the thermal requirements of a critical data center. The solution requires nothing more than direct front access for installation and routine servicing. This means that users can achieve 100% space utilization around the unit and not suffer dead space caused by service access requirements on the sides and rear.

Improved Energy Efficiency

EC Fan

The innovative energy efficient EC fan technology integrated with continuous speed control across the full operating range provides greatest value to the end user. The technology offers a simple and cost effective way of introducing energy efficient technology into the Liebert PEX. EC fan technology regulates airflow and reduces the fan input power. This significantly reduces energy consumption and provides longer component life. Managed through Liebert iCOM controls, EC fans deliver airflow for the optimal operating conditions for IT equipment.

Features and Benefits

- 10-30% less energy than average standard AC motor
- Backward curved, corrosion resistant aluminum fan impeller
- Electronically commutated motor, AC to DC conversion
- Direct driven with integrated electronics
- True soft start with inrush current lower than full load current

Liebert PEX Down Flow Unit

Down Flow EC Fan Assembly

Up Flow EC Fan Assembly

Merging Cooling Technologies

The Liebert PEX becomes the ultimate solution by combining the most reliable cooling technologies in the industry - The EC fan and Digital Scroll (DS) compressor technology. EC fan plays an integral role in the Liebert PEX by providing effective capacity control while retaining high energy efficiency and low noise levels. The DS compressor technology in the Liebert PEX enables superior room condition, humidity and temperature control by adapting to changing sensible heat load and latent conditions.

Digital Scroll

Liebert PEX with Digital Scroll technology is highly reliable and is designed to achieve efficiency with flexibility and to lower TCO. Emerson Precision Cooling units with Digital Scroll technology actively manage achieving capacity modulation from 20 percent to 100 percent. During the loaded state, cooling units consume full load power. On the other hand, during the unloaded state, the units run freely, consuming down to about 10 percent of the full load. Scalable, the Liebert Digital Scroll automatically adjusts to yearly increases in heat load. It is available on air cooled, water cooled, glycol cooled, dual cool and free cool models.

Single compressor models utilize Digital Scroll compressor while dual compressor models utilize two Digital Scroll compressors to provide the maximum energy benefit at part loads and system cooling and dehumidification cycles.

Emerson Digital Scroll Compressor

Features and Benefits

- Up to 30% less energy
- Variable capacity compressor can improve efficiency at less than peak capacity / on part load condition
- More precise control of the environment
- Save power at reduced duty (lower loads)
- Fast regulation to rapidly changing loads
- Powered by 50/60 Hz AC without frequency converter
- Lower EMC compared to variable frequency drives

Digital Scroll Compressor Liebert PEX Up Flow Model

Managed by the iCOM control system, the combination of these technologies not only provides precise temperature control but also provides relative humidity control without initially resorting to dehumidifying or humidifying. It helps lower operating costs and reduces energy consumption by as much as 30 percent, compared to standard cooling solutions.

Ensuring Availability

Proactive Control and Monitoring of Critical Systems

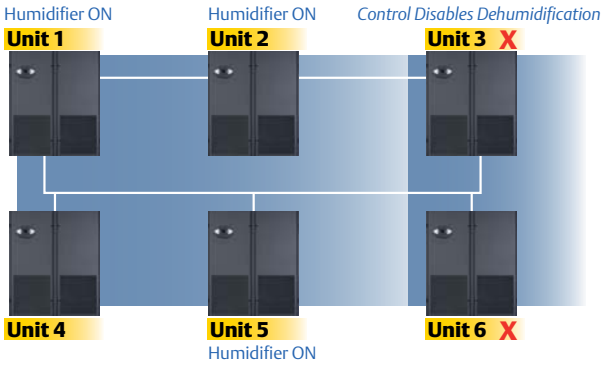
High-Level Supervision to Multiple Units with the Liebert iCOM Control System

1 Energy Efficiency With Teamwork Mode

The Liebert iCOM control system featured on the Liebert PEX brings high-level supervision to multiple units allowing them to work together as a single system to optimize room performance.

2 Additional Views Available with Large Graphic Displays

The optional Large Graphic Display features a 320x240 dot matrix backlit screen with helpful system and maintenance views. It allows you to see the average operation of the "system" or all units that are working together in Unit to Unit (U2U) Communication mode for Teamwork or Lead/Lag from a centralized location.



3 Easy Serviceability With The Liebert iCOM

Monitors all system functions and reports alarm.

Removable display makes servicing easier

Unit Diary

Free field areas are within the unit memory where unit maintenance shares history with any authorized users or logged-in service contacts, including record of what others have done.

Enterprise Management with Liebert SiteScan® Web Software

For customers who require extensive management of critical system equipment that may span multiple locations in an ever-moving global enterprise, Liebert SiteScan® Web will centrally manage your critical equipment and give you the power to move beyond the event-responsive service paradigm.

SiteScan Web does it all

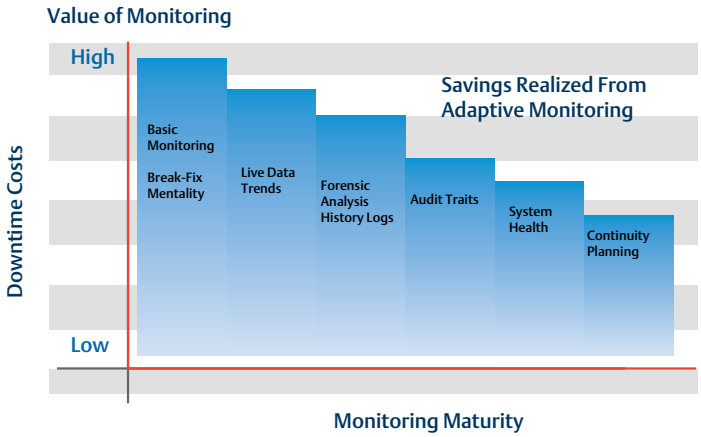
- Real-Time Monitoring and Control
- Event Management and Reporting
- Data Analysis and Trending
- Building Management Integration

Liebert SiteScan® Web is a comprehensive critical systems management solution dedicated to ensuring reliability through graphics, event management and data extrapolation. The standard Web interface allows users easy access from anywhere at anytime.

- Single and multi-site applications
- Event management and unit control
- Trend and historical data captures and reporting
- Full ASHRAE BACnet compatibility
- Java based
- Windows 2000, XP and 2003 compatible

Adaptive Monitoring: Increase Availability and Reduce Support Costs

Adaptive monitoring technologies allow easy information maneuverability to key resources, whether you need to integrate critical system data with your Network Management System, Building Management System or enable a Web browser interface.



Liebert's monitoring technology puts critical systems information at the fingertips of support personal - wherever they are - addressing the increasing concern for improved internal communication between management groups surrounding a data center.

Cooling Options Available on Your Liebert PEX

Configure The Liebert PEX to meet your specific needs

Up Flow

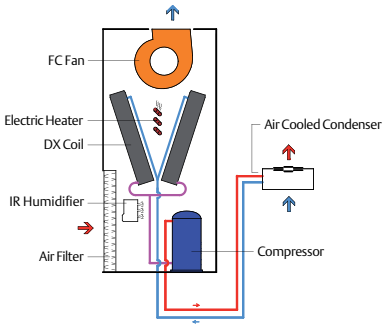
Designed for in-room or ducted applications

Down Flow

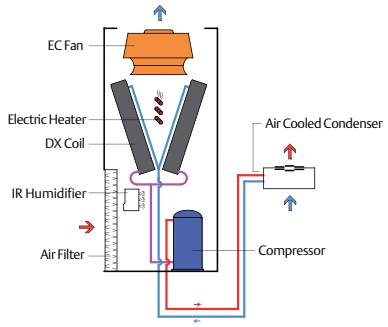
Designed for raised floor applications

Cooling Types

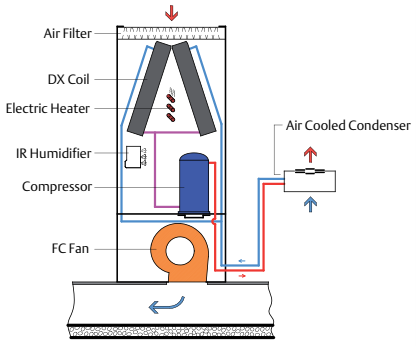
DX Air Cooled with Air Cooled Condenser Units



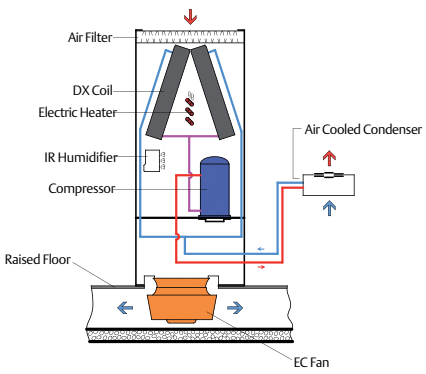
UP FLOW - FC FAN



UP FLOW - EC FAN

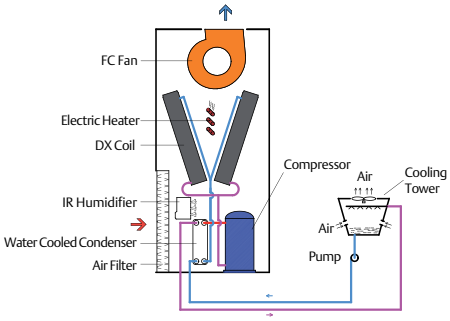


DOWN FLOW - FC FAN

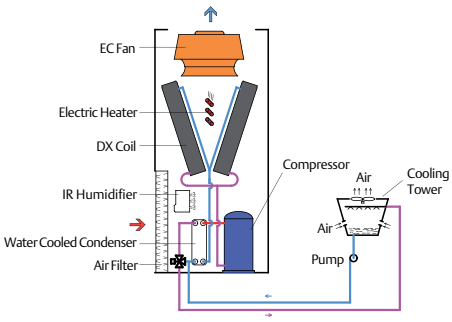


DOWN FLOW - EC FAN

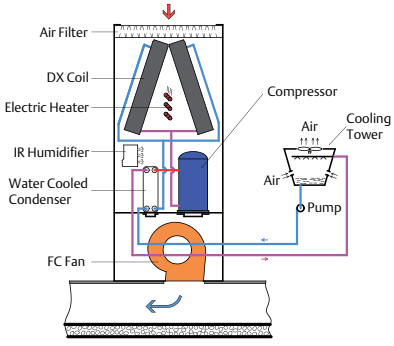
DX Water Cooled with Cooling Tower Units



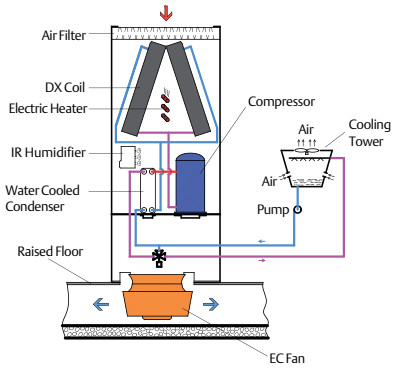
UP FLOW - FC FAN



UP FLOW - EC FAN

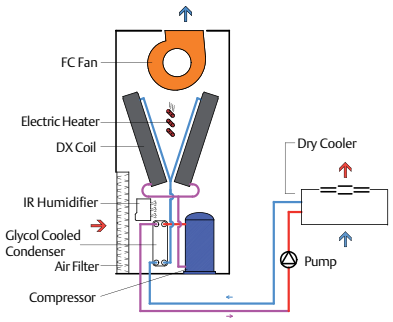


DOWN FLOW - FC FAN

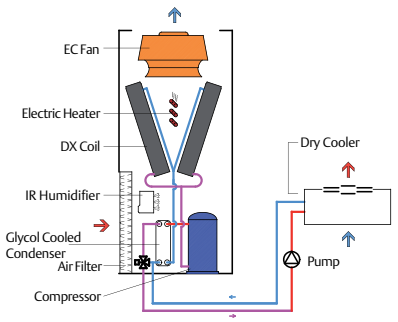


DOWN FLOW - EC FAN

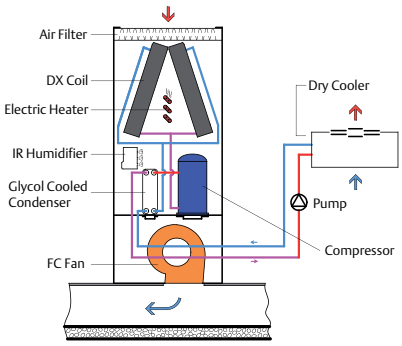
DX Glycol Cooled with Closed Circuit Units



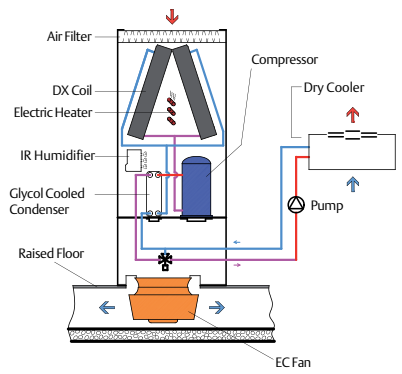
UP FLOW - FC FAN



UP FLOW - EC FAN



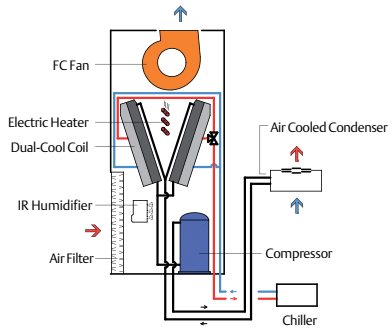
DOWN FLOW - FC FAN



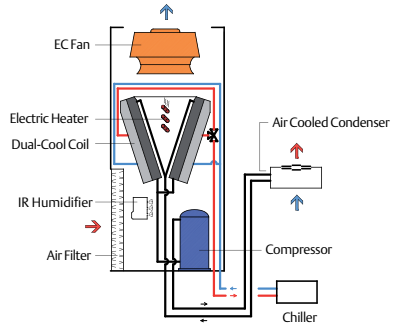
DOWN FLOW - EC FAN

All cooling types are available in single and dual compressors. Single compressor diagrams are shown above for clarity.

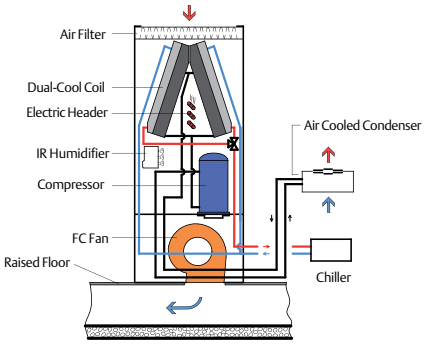
Air Cooled with Dual Cool Units



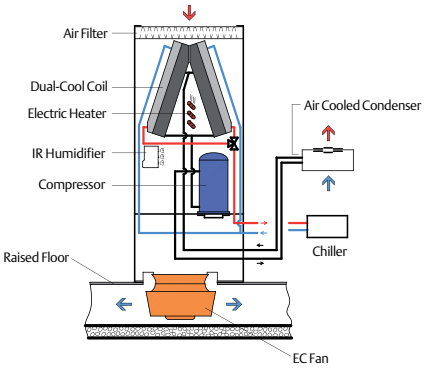
UP FLOW - FC FAN



UP FLOW - EC FAN

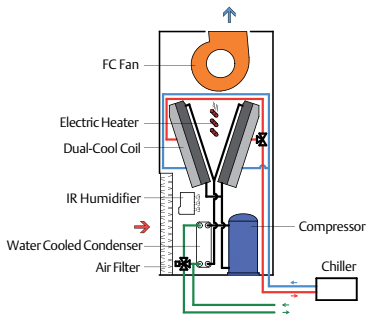


DOWN FLOW - FC FAN

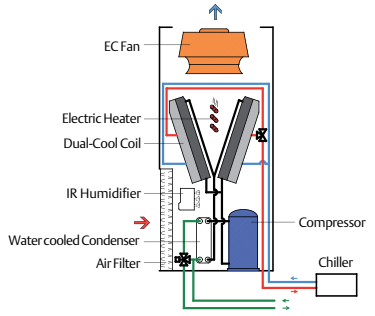


DOWN FLOW - EC FAN

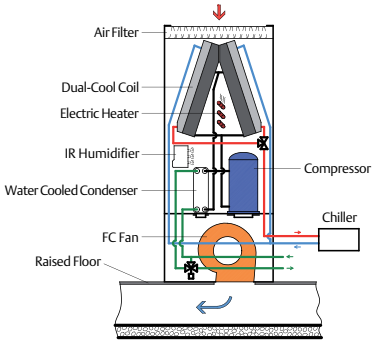
Water Cooled with Dual Cool Units



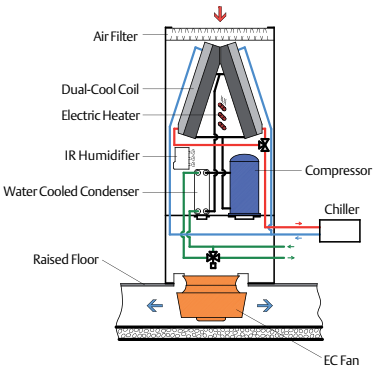
UP FLOW - FC FAN



UP FLOW - EC FAN

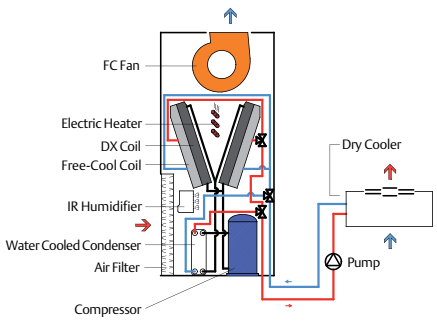


DOWN FLOW - FC FAN

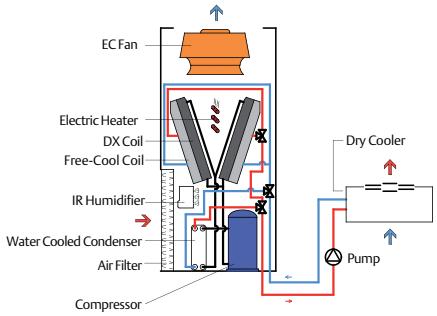


DOWN FLOW - EC FAN

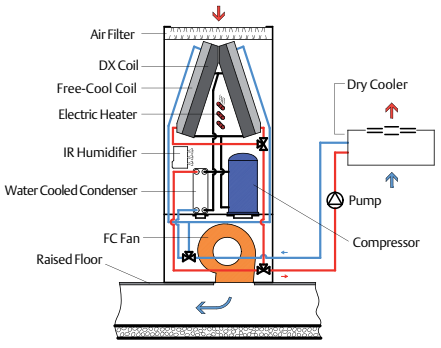
Free Cool Units



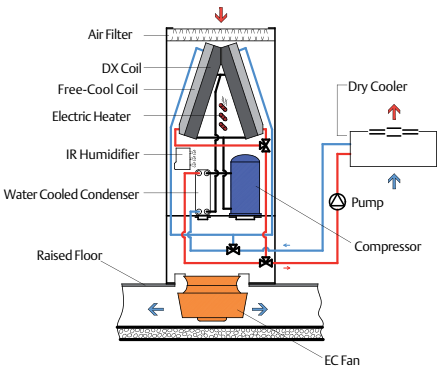
UP FLOW - FC FAN



UP FLOW - EC FAN



DOWN FLOW - FC FAN



DOWN FLOW - EC FAN

All cooling types are available in single and dual compressors. Single compressor diagrams are shown above for clarity.

Features Summary

Energy Efficiency

- Infrared Humidifier for precise humidity control
- iCOM controller for optimized room performance
- Combined technologies of EC Fan and Digital Scroll Compressor yield higher level of efficiency
- EC Fan with infloor configuration
- Efficient dehumidification cycle

Space Savings

- 15% more kW per square meter compared to industry average
- Requires nothing more than direct front access
- Downflow EC fans serviceable from above floor without disturbing the raised floor
- Units can be dismantled and reassembled for difficult site jobs

Communications and Monitoring

- Teamwork Mode allows units to work together in rooms with unbalanced loads
- Spare parts list allows speedy identification of parts
- Unit diary shares history with any authorized users or service contacts

System Supervision and Management

- Enhanced remote communications and control with Liebert Intellislot card
- Centralized Management with Liebert Nforms software
- Enterprise Management with Liebert SiteScan Web Software

Multiple Configurations

- Twelve different configurations for Upflow and Downflow units
- Configure for your specific needs

Dual Cool

- Second coil that utilizes the central building Chiller system water supply
- Unit can function either as a DX (compressorized) or a Chilled water system
- Reduces energy cost
- Increases redundancy and flexibility to the environmental control system

Free Cool

- Glycol Free Cool System
- Unit can function as a DX (compressors), or Free Cool or mixed for energy savings
- Reduces energy costs in colder climates

Technical Specifications

Downflow - DX															
Model Size	1020	1025	1030	1035	2035	2045	2055	2040	2050	2060	2070	3070	3080	3090	3100
DX - Air, Water, Glycol, Free Cool based on 24°C DB, 50% RH, 45°C Condensing															
Digital Scroll compressor - EC Fan															
DX Total kW	20.3	23.2	27.6	33.2	37.0			41.3	47.2	55.1	67.0	74.0			
Sensible kW	20.1	22.6	26.4	30.4	35.2			39.2	44.9	52.8	62.4	72.4			
Air Flow m^3/h	6,500	7,500	7,800	8,500	10,000			11,200	13,800	15,500	17,600	23,000			
Scroll compressor - EC Fans															
DX Total kW	20.3	23.2	30.4	33.2	37.0	45.8	54.0	41.3	47.2	60.9	67.0	74.0	82.7	89.8	100.0
Sensible kW	20.1	22.6	28.2	30.4	35.2	44.6	53.1	39.2	44.9	57.4	62.4	72.4	78.4	86.1	92.8
Air Flow m^3/h	6,500	7,500	8,300	8,500	10,000	14,000	16,000	11,200	13,800	17,000	17,600	23,000	25,000	25,500	25,800
Scroll compressor - FC Fans															
DX Total kW	20.0	23.1	30.1	33.1	36.6	45.0	53.2	41.0	46.4	60.6	66.9	73.9	81.4	89.3	100.0
Sensible kW	18.9	21.5	26.6	29.4	35.1	41.7	47.3	38.5	43.2	53.5	59.0	68.2	71.1	79.6	88.4
Air Flow m^3/h	5,670	6,660	8,280	8,190	9,900	12,240	13,680	10,980	12,960	16,200	16,020	20,160	20,160	23,940	23,760
Dual Cool - 24°C DB, 50% RH, 45°C condensing. CW Based on 7°C EWT, 12°C LWT															
Digital Scroll compressor - EC Fan															
DX Total kW	20.3	23.2	27.4		37.0			41.3	47.2	55.6	67.0	74.0			
Sensible kW	20.1	22.6	25.1		35.2			39.2	44.9	51.2	62.4	72.4			
CW Total kW	25.7	28.0	28.7		48.6			52.2	59.0	63.1	67.3	92.6			
Sensible kW	22.2	24.6	25.3		38.9			42.2	49.1	53.3	58.1	79.0			
Air Flow m^3/h	6,500	7,500	7,800		10,000			11,200	13,800	15,500	17,600	23,000			
Scroll compressor - EC Fans															
DX Total kW	20.3	23.2	30.2		37.0	45.8	54.0	41.3	47.2	61.0	67.0	74.0	82.7	90.1	100.0
Sensible kW	20.1	22.6	26.8		35.2	44.6	51.0	39.2	44.2	55.3	62.4	72.4	78.4	82.9	92.8
CW Total kW	25.7	28.0	29.4		48.6	59.7	63.5	52.2	59.0	66.1	67.3	92.6	97.2	97.8	99.0
Sensible kW	22.2	24.6	26.3		38.9	49.6	54.4	42.2	49.1	56.7	58.1	79.0	83.8	84.9	86.1
Air Flow m^3/h	6,500	7,500	8,300		10,000	14,000	16,000	11,200	13,800	17,000	17,600	23,000	25,000	25,500	25,800
Scroll compressor - FC Fans															
DX Total kW	20.0	23.1	30.1		36.6	45.0	53.2	41.0	46.4	60.6	66.9	73.9	81.4	89.3	100.0
Sensible kW	18.9	21.5	26.6		35.1	41.7	47.3	38.5	43.2	53.5	59.0	68.2	71.1	79.6	88.4
CW Total kW	23.9	26.2	29.4		48.2	54.9	58.6	51.4	57.0	64.2	63.6	86.3	86.3	94.8	95.3
Sensible kW	20.2	22.6	26.3		38.6	45.1	48.8	41.6	47.0	54.9	54.4	72.0	72.0	81.3	81.4
Air Flow m^3/h	5,670	6,660	8,280		9,900	12,240	13,680	10,980	12,960	16,200	16,020	20,160	20,160	23,940	23,760
Evaporator Fan - Backward curve EC motor, direct drive / Forward curve centrifugal fan, HE motor, auto tensioning drive															
No. of fan assemblies	1	1	1	1	2	2	2	2	2	2	2	3	3	3	3
Standard EC Motor kW	2.3	2.3	3.1	3.1	2.3	2.3	2.3	2.3	2.3	3.1	3.1	2.3	2.3	3.1	3.1
Standard FC Motor kW	2.2	2.2	3.0	3.0	2.2	2.2	2.2	2.2	2.2	3.0	3.0	2.2	2.2	3.0	3.0
Compressor - Copeland Compliant Scroll with Crankase Heater															
No. of compressors	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
Unit cooling steps	2 via HGBP							2 via Compressors							
Compressor - Copeland Digital Scroll with Crankase Heater															
No. of compressors	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
Capacity modulation	20% to 100%							10% to 100%							
Humidification															
Standard Infrared - kg/h	4.5	4.5	4.5	4.5	10	10	10	10	10	10	10	10	10	10	10
Reheat - electric heater elements															
Standard 1 stage - kW	6	6	6	6	9	9	9	9	9	9	9	12	12	12	12
Optional 2 stage - kW	12	12	12	12	18	18	18	18	18	18	18	24	24	24	24
Electrical 400V 50Hz 3Phase - Std DX unit only															
RFLA	22.7	24.8	31.3	33.2	40.0	45.8	53.4	39.4	43.6	56.6	60.4	61.4	67.2	76.9	86.9
Unit Dimensions & Weight															
Width - mm	853	853	853	853	1703	1703	1703	1703	1703	1703	1703	2553	2553	2553	2553
Depth - mm	873	873	873	873	873	873	873	873	873	873	873	873	873	873	873
Height - mm	1970														
Unit Weight - kg	350	360	370	380	600	610	630	650	670	700	720	970	990	1030	1050
Unit Footprint															
Unit only - m^2	0.74	0.74	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49	2.23	2.23	2.23	2.23
Incl. Service area - m^2	1.47	1.47	1.47	1.47	2.93	2.93	2.93	2.93	2.93	2.93	2.93	4.40	4.40	4.40	4.40
Service Access min - mm	850														

Notes

All rated capacities are nominal values based on an ESP for Downflow 20pa and for Upflow 50Pa, at sea level, for R407c and R22. For net capacities, deduct fan input power. Refer to the Liebert PEX Rating Program for specific input conditions, air flow, and configuration. Minimum unit depth without front panels and hinges is 841mm. Minimum raised floor height 325mm for EC fan units. Weights shown are for water cooled DX models only. Input power supply 400V +/-15%, 50Hz +/- 2. RFLA is for the standard configuration unit only and excludes all heat rejection equipment, Chillers and Pumps etc.. RFLA is based on standard unit with EC fan. Refer to Liebert PEX Rating Program & User Manual for electrical data on optional equipment. All information and Technical Data are subject to change without notice

Technical Specifications

Upflow - DX																
Model Size		1020	1025	1030	1035	2035	2045	2055	2040	2050	2060	2070	3070	3080	3090	3100
DX - Air, Water, Glycol, Free Cool based on 24°C DB, 50% RH, 45°C Condensing																
Digital Scroll compressor - EC Fans																
DX	Total kW	19.9	22.4	26.7	32.8	36.6			40.7	45.8	54.3	66.3	71.9			
	Sensible kW	19.8	22.3	26.1	29.4	35.0			39.0	44.6	52.7	60.2	71.4			
	Air Flow m^3/h	6,500	7,500	7,800	8,500	10,000			11,200	13,800	15,500	17,480	23,000			
Scroll compressor - EC Fans																
DX	Total kW	19.9	22.4	29.5	32.8	36.6	44.5	53.3	40.7	45.8	59.5	66.3	71.9	80.0	88.0	98.7
	Sensible kW	19.8	22.3	28.0	29.4	35.0	44.2	52.9	39.0	44.6	57.1	60.2	71.4	77.8	85.2	88.9
	Air Flow m^3/h	6,500	7,500	8,300	8,500	10,000	14,000	16,000	11,200	13,800	17,000	17,480	23,000	25,000	25,170	25,170
Scroll compressor - FC Fans																
	Total kW	19.4	22.1	29.2	32.4	36.5	44.4	52.0	39.5	45.7	57.9	65.9	71.8	79.4	87.2	97.9
	Sensible kW	18.3	20.7	25.9	28.0	34.8	40.7	46.1	37.2	42.0	51.6	56.3	66.2	69.2	77.5	83.9
	Air Flow m^3/h	5,400	6,300	7,870	7,920	9,720	11,610	13,030	10,440	12,240	15,390	15480	19,190	19,190	22,770	22,860
Dual Cool - 24°C DB, 50% RH, 45°C Condensing. CW Based on 7°C EWT, 12°C LWT																
Digital Scroll compressor - EC Fans																
DX	Total kW	19.9	22.4	26.5		36.6			40.7	45.8	54.2		71.9			
	Sensible kW	19.8	22.3	24.9		35.0			39.0	44.6	50.4		71.4			
CW	Total kW	25.7	28.0	28.7		48.6			52.2	59.0	63.1		92.6			
	Sensible kW	22.2	24.6	25.3		38.9			42.2	49.1	53.3		79.0			
	Air Flow m^3/h	6,500	7,500	7,800		10,000			11,200	13,800	15,500		23,000			
Scroll compressor - EC Fans																
DX	Total kW	19.9	22.4	29.3		36.6	44.5	52.2	40.7	45.8	59.3		71.9	80.0	87.5	
	Sensible kW	19.8	22.3	26.6		35.0	44.2	50.5	39.0	44.6	54.9		71.4	77.8	81.9	
CW	Total kW	25.7	28.0	29.4		48.6	59.7	63.5	52.2	59.0	66.1		92.6	97.2	97.8	
	Sensible kW	22.2	24.6	26.3		38.9	49.6	54.4	42.2	49.1	56.7		79.0	83.8	84.9	
	Air Flow m^3/h	6,500	7,500	8,300		10,000	14,000	16,000	11,200	13,800	17,000		23,000	25,000	25,170	
Scroll compressor - FC Fans																
DX	Total kW	19.4	22.1	29.2		36.5	44.4	52.0	39.5	45.7	57.9		71.8	79.4	87.2	
	Sensible kW	18.3	20.7	25.9		34.8	40.7	46.1	37.2	42.0	51.6		66.2	69.2	77.5	
CW	Total kW	23.2	25.3	28.5		47.5	53.4	57.3	50.0	54.9	62.7		83.6	83.6	91.9	
	Sensible kW	19.5	21.7	25.4		38.0	43.4	47.2	40.1	45.1	53.0		69.5	69.5	78.5	
	Air Flow m^3/h	5,400	6,300	7,870		9,720	11,610	13,030	10,440	12,240	15,390		19,190	19,190	22,770	
Evaporator Fan - Backward curve EC motor, direct drive / Forward curve centrifugal fan, HE motor, auto tensioning drive																
No. of fan assemblies		1	1	1	1	2	2	2	2	2	2	2	3	3	3	3
Standard EC Motor kW		2.3	2.3	3.1	3.1	2.3	2.3	2.3	2.3	2.3	3.1	3.1	2.3	2.3	3.1	3.1
Standard FC Motor kW		2.2	2.2	3.0	3.0	2.2	2.2	2.2	2.2	2.2	3.0	3.0	2.2	2.2	3.0	3.0
Compressor - Copeland Compliant Scroll with Crankase Heater																
No. of compressors		1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
Unit cooling steps		2 via HGBP							2 via Compressors							
Compressor - Copeland Digital Scroll with Crankase Heater																
No. of compressors		1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
Capacity modulation		20% to 100%							10% to 100%							
Humidification																
Standard Infrared - kg/h		4.5	4.5	4.5	4.5	10	10	10	10	10	10	10	10	10	10	10
Reheat - electric heater elements																
Standard 1 stage - kW		6	6	6	6	9	9	9	9	9	9	9	12	12	12	12
Optional 2 stage - kW		12	12	12	12	18	18	18	18	18	18	18	24	24	24	24
Electrical 400V 50Hz 3Phase - Std DX unit only																
RFLA		22.7	24.8	31.3	33.2	40.0	45.8	53.4	39.4	43.6	56.6	60.4	61.4	67.2	76.9	86.9
Unit Dimensions & Weight																
Width - mm		853	853	853	853	1703	1703	1703	1703	1703	1703	1703	2553	2553	2553	2553
Depth - mm		873	873	873	873	873	873	873	873	873	873	873	873	873	873	873
Height - mm		1970														
Unit Weight - kg		350	360	370	380	600	610	630	650	670	700	720	970	990	1030	1050
Unit Footprint																
Unit only - m^2		0.74	0.74	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49	2.23	2.23	2.23	2.23
Incl. Service area - m^2		1.47	1.47	1.47	1.47	2.93	2.93	2.93	2.93	2.93	2.93	2.93	4.40	4.40	4.40	4.40
Service Access min - mm		850														

Notes

All rated capacities are nominal values based on an ESP for Downflow 20pa and for Upflow 50Pa, at sea level, for R407c and R22. For net capacities, deduct fan input power. Refer to the Liebert PEX Rating Program for specific input conditions, air flow, and configuration. Minimum unit depth without front panels and hinges is 841mm. Minimum raised floor height 325mm for EC fan units. Weights shown are for water cooled DX models only. Input power supply 400V +/-15%, 50Hz +/- 2. RFLA is for the standard configuration unit only and excludes all heat rejection equipment, Chillers and Pumps etc.. RFLA is based on standard unit with EC fan. Refer to Liebert PEX Rating Program & User Manual for electrical data on optional equipment. All information and Technical Data are subject to change without notice

Service Commitment

A Heritage Of Reliability and Service Commitment

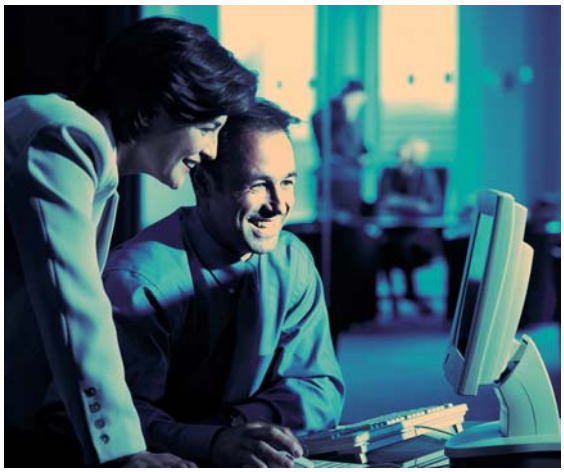
Emerson Network Power Invented Precision Air Conditioning With The First Liebert Systems

No one knows more about precision cooling than Emerson Network Power . After all, we invented it with our Liebert line back in 1965.

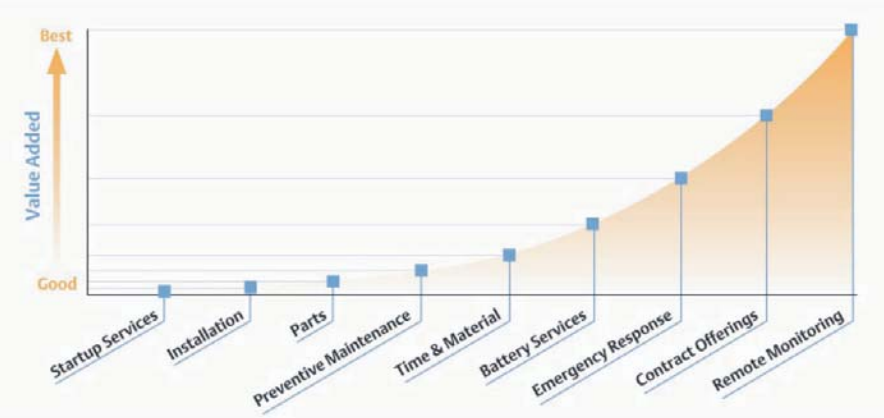
Our mission critical cooling technology has been proven in thousands of critical data centers around the world. In fact, there are Liebert mission-critical air conditioning systems in the field that have been in constant use for over 45 years, 24 hours a day!

The Global Standard For Reliability

These products are recognized as the world's standard for reliable operation. 100% of the Fortune 100 companies rely on our solutions to protect their critical networks. We have had experience in designing for an incomparable variety of applications all over the world.



Our Expertise in Precision Air Conditioning Sets Us Apart. Our Global Services Give You That Added Peace of Mind



Emerson Network Power Services delivers unmatched 24 x 7 x 365 support and service before, during and after installation. If you're an Emerson Network Power customer, you're a customer for life.

Over 140 Service Centers
Over 2000 Service Field Engineers
Over 570 Technical Support Staff
WORLDWIDE

Who is the Emerson Service Expert?

1 Factory Trained

You can be sure only 100% Factory Trained Emerson Service Experts deal with your critical precision air equipment.

2 Original Parts

You can be sure that the parts you will receive are 100% Original Parts. With our Multi-tiered parts availability program, you are ensured that parts will be made available to you when and where you need them.

3 Version Control

You are assured of 100% Version Control so that your critical business systems won't have to experience downtime due to incompatibility.

4 Support Network

We do not only help you develop Environmental Control System, but also offer a Full Support Network so that your critical systems have a full safety net every step of the way.

5 Quality Response

You do not just get prompt service; you also get 100% Quality Response. This means no useless tinkering, no wasted time - just Quality Service, straight away.

Emerson Network Power Asia

Australia
T: 1800-065345
F: 61-2-97438737

China
T: 86-755-860-10808
F: 86-755-860-10245

India
T: 91-22-67208000
F: 91-22-25828358

Indonesia
T: 62-21-2513003
F: 62-21-2510622

Japan
T: 81-3-54038594
F: 81-3-54032924

Korea
T: 82-2-34831500
F: 82-2-5927883

Malaysia
T: 603-78845000
F: 603-78845188

New Zealand
T: 64-3-3392060
F: 64-3-3392063

Pakistan
T: 92-42-36622526 to 28
F: 92-42-36622530

Philippines
T: 63-2-6203600
F: 63-2-6203693

Singapore
T: 65-64672211
F: 65-64670130

Thailand
T: 66-2-6178260
F: 66-2-6178277 / 78

Vietnam
T: 84-4-37628908
F: 84-4-37628909

Marketing.AP@Emerson.com

Emerson Network Power.
The global leader in enabling *Business-Critical Continuity*™.

- AC Power
- Connectivity
- DC Power
- Embedded Computing
- Embedded Power
- Infrastructure Management & Monitoring
- Outside Plant
- Power Switching & Controls
- Precision Cooling
- Racks & Integrated Cabinets
- Services
- Surge Protection

EmersonNetworkPower.com

AP10ENT-PEXDXV3-BR