

Thermal Management System
For Business-Critical Continuity

Liebert® PEX+

High Efficiency. Modular-Type Precision Air Conditioning Unit.



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Network Power



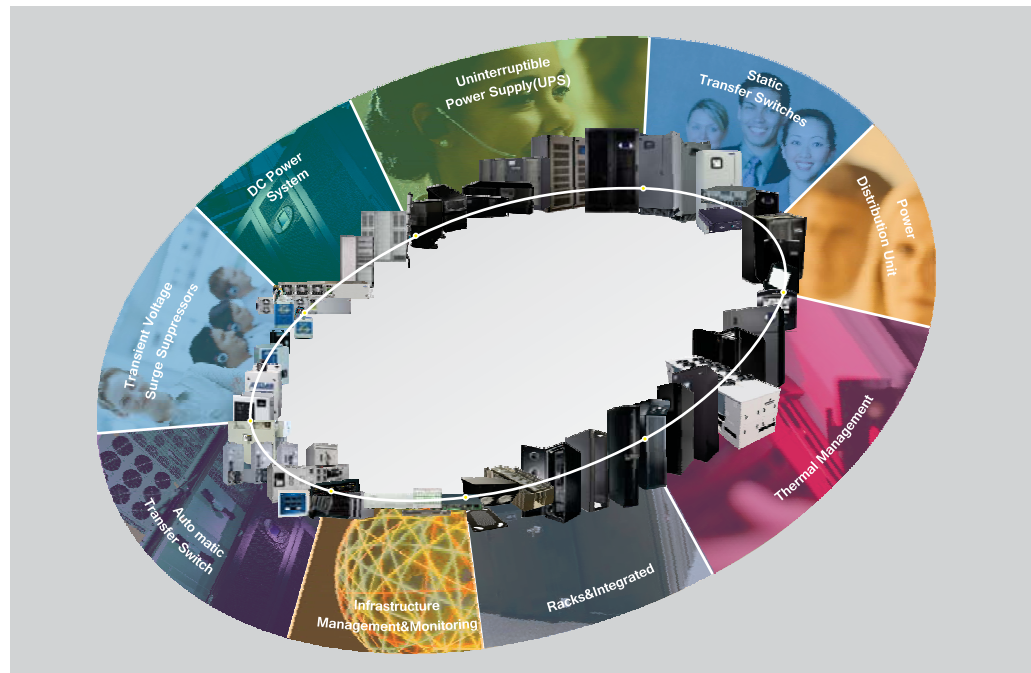
Emerson Network Power, a business of Emerson, a global company that leads by applying a unique combination of industry expertise, technology, and resources to make the future of our customers' enterprises and networks possible.

We are Emerson

Emerson Network Power's broad technology base and global expertise support a full spectrum of enterprise wide solution for today's business needs . We have been providing tailored solutions for protecting the operation of critical electronic systems in virtually every business segments right from customer premise equipment to global network .

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Customers call on Emerson when the stakes are the highest. Why? Because they know that we bring them technology and engineering to create solutions for their success. Whatever their challenge, they know that with Emerson by their side, they can "Consider It Solved."



Supported by our right combination of knowledge, experience, product selection and service capability. We are The true solution provider of our customer's IT infrastructures right from grid to chip level.

When the stakes are high, partner with Emerson Network Power to optimize your technology with "high-nines" reliability solutions specific to your infrastructure.

In today's data center, the cooling infrastructure accounts the most of the total energy consumption. Besides reliability and capacity, the improvement of efficiency is a significant cooling challenge for many IT and facility managers.

Introducing Liebert® PEX+, a new generation high efficiency cooling solution from Emerson Network Power.

The Liebert® PEX+ is designed as a modular-type room-based precision cooling system for IT critical equipment that requires high level of sensible heat elimination, precise temperature and humidity control. It is available in both air-cooled (20 - 100kW) and chilled water (30 - 210kW) configurations to cover a wide range of room applications.

This cooling solution delivers the best combination of availability, capacity and energy-efficiency. It meets today's data center demands, which keeping the energy costs low. The modular design of Liebert® PEX+ high-efficiency precision cooling system features easy deployment to accommodate rapid growth and change of critical loads.

Liebert PEX+



Liebert® PEX+ Cooling Unit delivers Efficiency Without Compromise

Efficiency Without Compromise provides a path to optimize data center infrastructure around design, operating and management efficiency – while maintaining or improving availability.



ECO AVAILABILITY
Balancing high levels of availability and efficiency



HIGH DENSITY
Delivering high power in lowest footprint



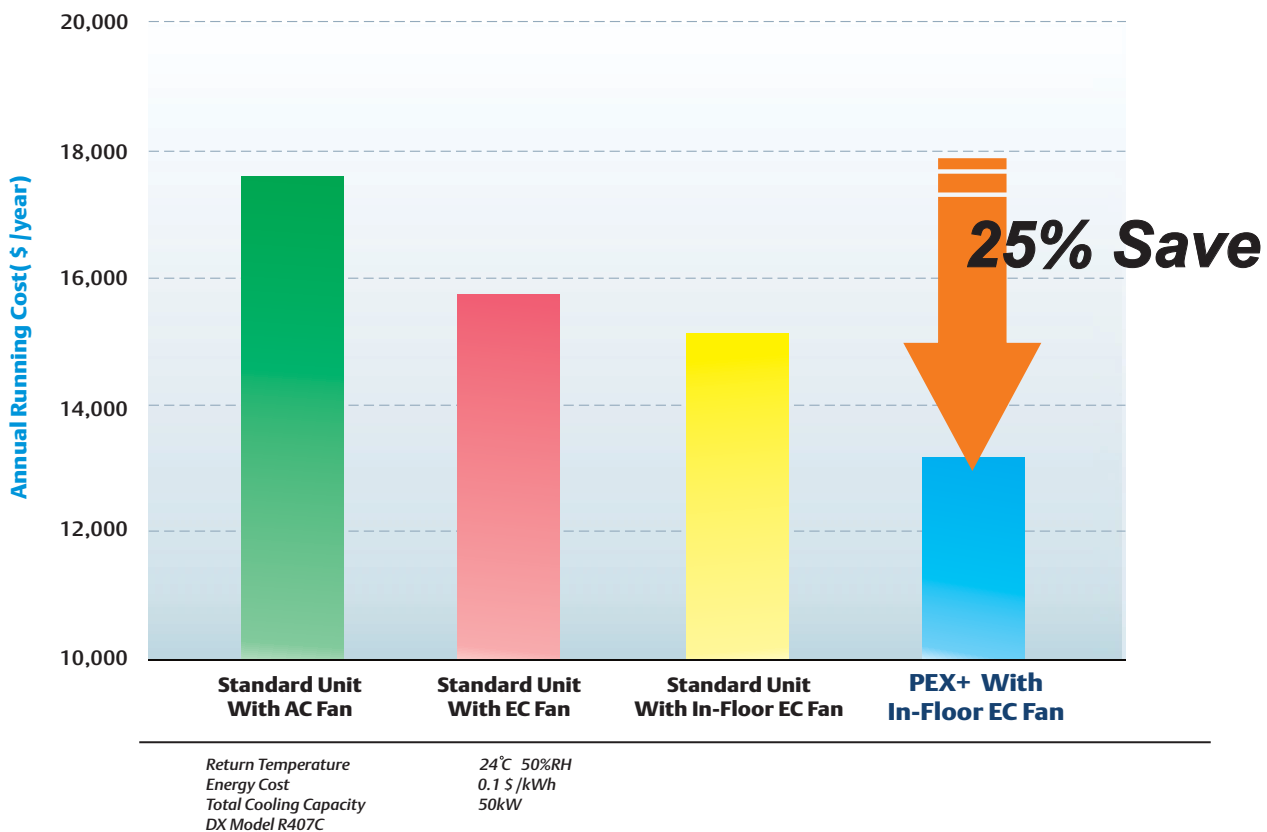
FLEX CAPACITY
Adapting to IT changes for continuous optimization and design flexibility



INFRASTRUCTURE MANAGEMENT
Improving performance of the IT infrastructure and environment

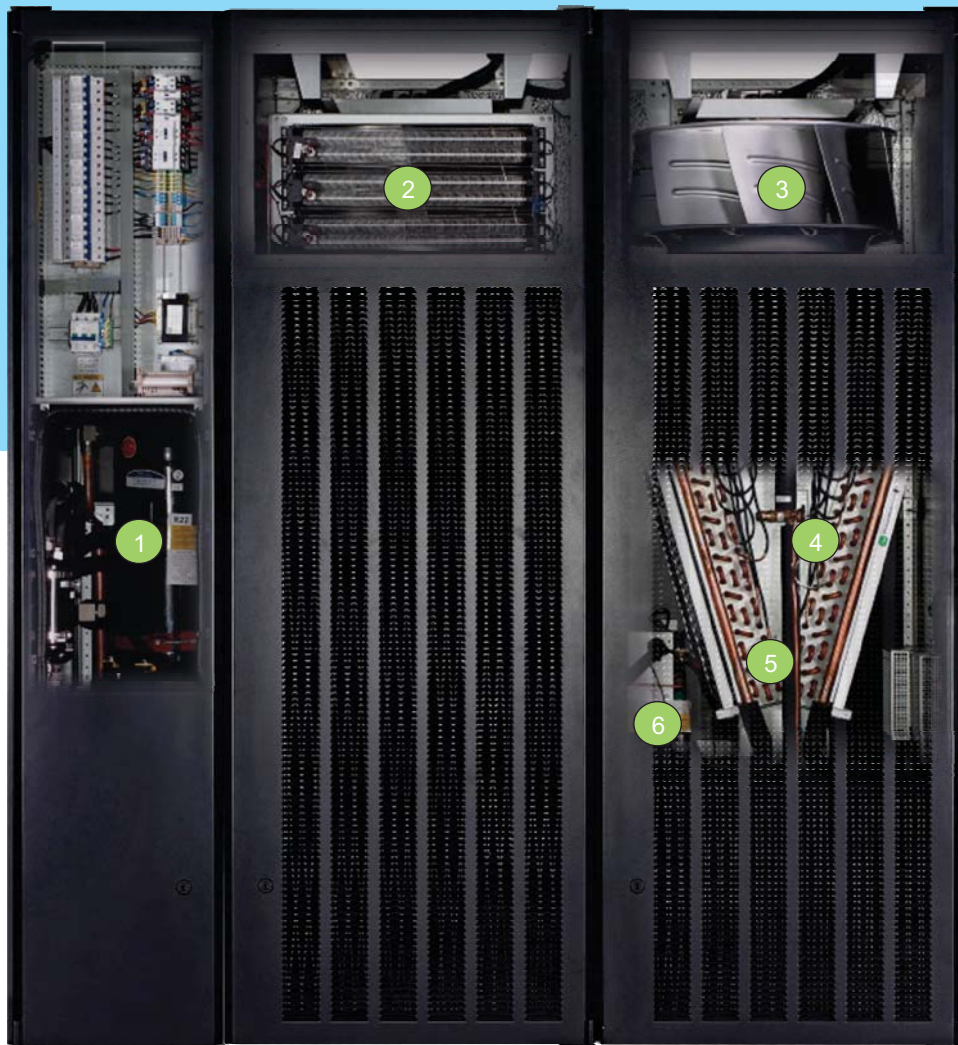


Liebert® PEX+: Data Center Precision Cooling for Maximum Energy Saving



Key Features Towards High Efficiency

- Unique integrated aerodynamic airflow pattern
- New coil design with enhanced efficiency
- Larger evaporator and filters to further reduce pressure drop by 40%
- In-floor EC Fan configuration
- Less airflow restriction due to the separation of control and cooling cabinet
- Choice of Digital Scroll Compressor offers higher efficiency, adaptability and reliable operation



* *Upflow Air-Cooled Unit*

1 Scroll Compressor (Optional Digital Scroll)
 More reliable and durable with a robust design, easy service and maintenance, operate at a lower sound and vibration level, higher efficiency over the entire operating range.

2 PTC Heater
 Aluminium sheet mechanical sheet thermistor, features fast temperature rising speed, automatic regulation of air temperature and power consumption, safety and reliability.

3 Electronically-Commutated Fan (EC Fan)
 Built by corrosion resistant aluminium wheel and permanent-magnet brushless DC motor within the rotor, variable speed control matched to the load, free-maintenance fan operation.

4 Thermal Expansion Valve (Optional EEV)
 Automatically regulates the refrigerant flow to evaporator for performance optimization in the varying of temperature and pressure condition.

5 A-Frame or V-Frame Evaporator Coil
 Larger frame coil design features optimise heat transfer efficiency and minimise air pressure drop, polymetric coating on coils protects against corrosion due to harsh environment, double-angled condensate tray for proper water drainage.

6 Infrared Humidifier
 High-intensity quartz lamps shine on water creating instantaneous moisture using almost any water quality.



Innovation, Efficiency and Better Value Offerings

Modular Design Benefit

Unlike the legacy precision air conditioning unit, the latest Liebert® PEX+ model has higher efficiency to accommodate the energy efficient markets with even larger cooling capacity of 77.98 kW/m², thanks to its compact design.

The compact design in Liebert® PEX+ model features a combination of power/ control cabinet and cooling cabinet, which promotes front door service, easy installation and convenient transport by lift at site. This modular design also gives flexibility in future capacity expansion simply by adding the cooling cabinet.



EC Direct Drive Fan

- High efficiency, external rotor electronically commutated (EC) motor with integrated electronics
- True soft start characteristics
- Maintenance free design and construction
- High external static pressure (ESP) motor options available

All downflow units with EC fans are enabled to operate under an 'in-floor' fan configuration for providing the ultimate in energy saving. This feature increases the airflow velocity, thus the supply air is delivered to heat source effectively. Fans are pre-wired and easily lowered into the floor during unit positioning, without any assembly of other components.

Excellent Achievement In Smart Control Development by Emerson Network Power



The new Liebert® **PACC** controller, integrated into every Liebert® PEX+, enables the multiple units in a data centre to operate together intelligently to optimize the performance and efficiency. With this advanced microprocessor control system, you can have a variety of functions as follows:-

- Easy operation interface with multiple password protection
- Programming auto-restart operation after power is restored
- 200 historical records storage
- Operating hours calculation of most important components
- Malfunction diagnosis system for the ease of maintenance purpose

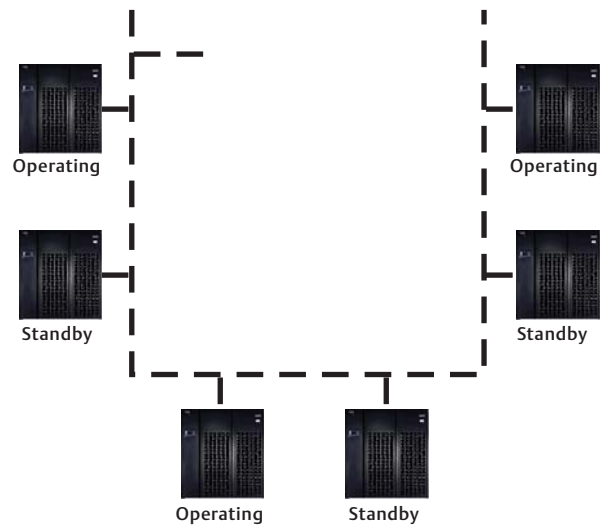
The microprocessor controller can monitor and configure the following parameters:

- Temperature setting is 18°C - 32°C
- Humidity setting is 20%RH - 80%RH
- Supply air temperature setting limit is 8°C - 30°C

The PACC control board allows a single point connection to interface up to 32 units in a local network. The PACC network provides a choice of Teamwork, Lead/ Lag and Cascade functions.

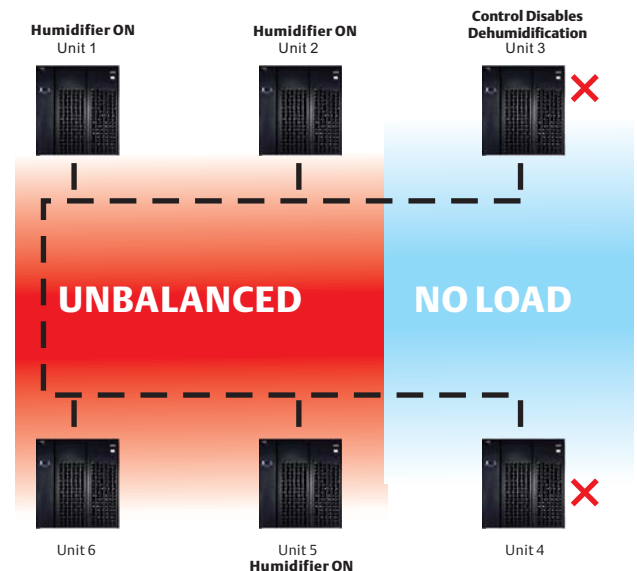
U2U Configuration

Rotation mode and auto standby mode.



Teamwork

Operation mode of avoiding competition. Units work together to offer optimized cooling performance in an unbalanced load condition.

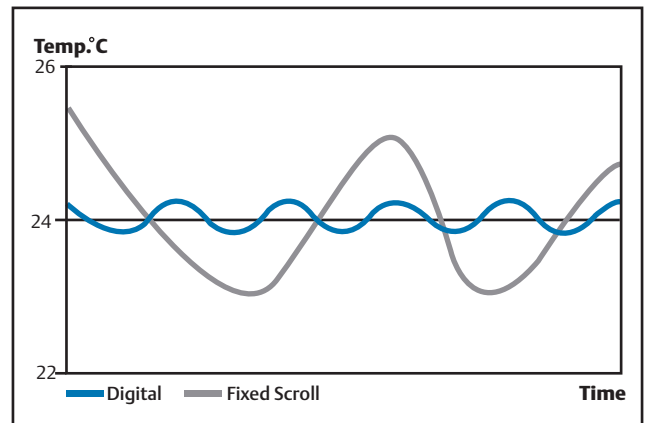




Energy Efficiency Optimization With Digital Scroll Technology



Digital technology provides a wide range of benefits to a scroll compressor compared to a standard compressor. At first a Digital Scroll is able to work at different partial loads without the use of an external inverter, thanks to its unique technological solution. Digital Scroll technology gives infinitely variable capacity modulation that easily adapts to changing load conditions while providing a precise temperature control. This approach is 30 percent more efficient than traditional hot-gas bypass.

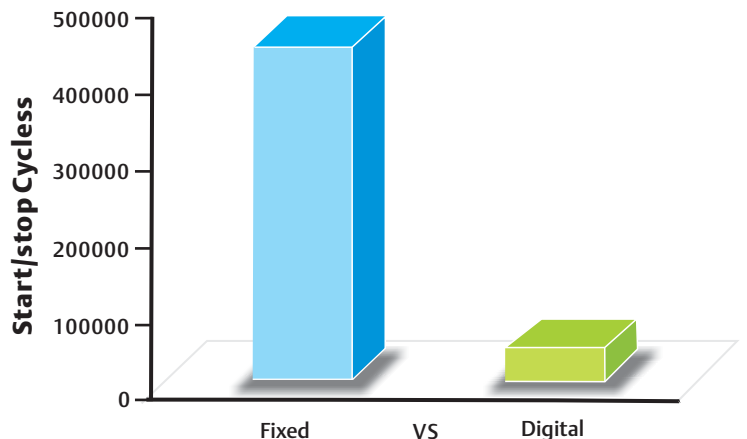
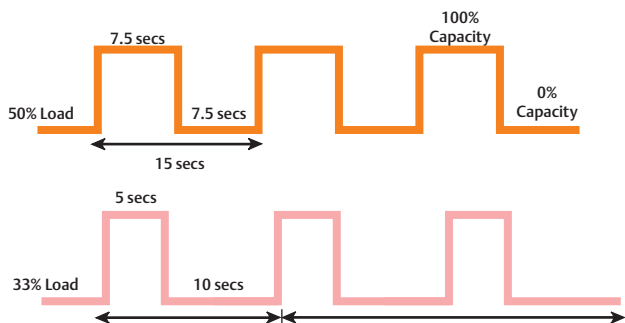


Comparison on Temperature Room Control between Fixed Scroll and Digital one.

Another important advantage is that, at partial load, a Digital Scroll doesn't work with ON-OFF configuration. This prevents peak in adsorbed power and reduces the motor stress on start-up. This will increase the unit's lifespan and reduce failure due to fatigue.

Due to its modulated mechanical operation, Digital Scroll system generates negligible electromagnetic interference during the loading and unloading state. It is safer for the critical equipments operating under such condition without any harmonic current distortion concern.

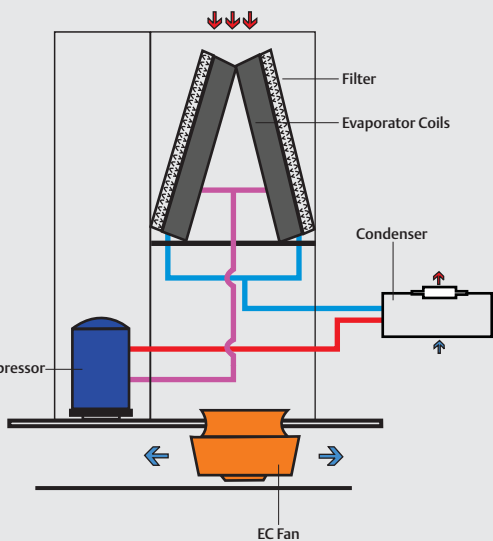
Digital Scroll Capacity Control Diagram



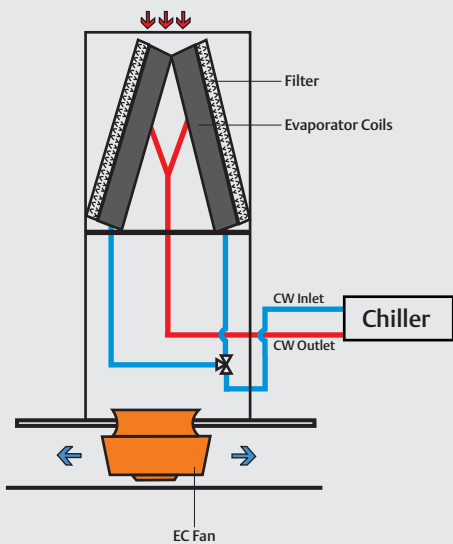


Liebert® PEX+ Configurations

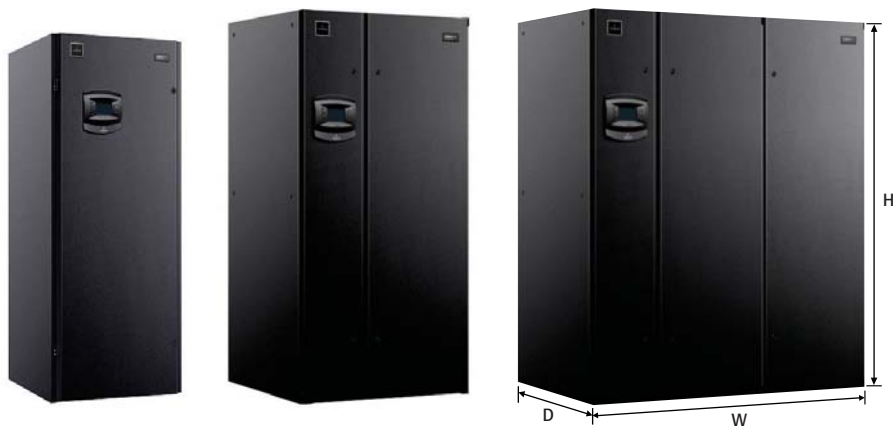
Air-Cooled Model



Chilled Water Model



Downflow Unit



Upflow Unit



Technical data of the DOWNFLOW air-cooled unit (R407C)

Model	P1020 DA13C	P1025 DA13C	P1030 DA13C	P1035 DA13C	P1035 DA13S	P1040 DA13C	P1040 DA13S	P1050 DA13C	P1050 DA13S
Gross Cooling capacity and Sensible cooling capacity^{1,2}(kW)									
Cooling capacity (24°C DB 50%RH)	21.6	29.8	35.5	40.7	39.8	45.1	44.8	52.9	54.0
Sensible cooling capacity (24°C DB 50%RH)	19.5	26.9	32.1	36.9	36.1	40.7	40.5	47.8	48.8
Fan³									
Standard air volume (m ³ /h)	5500	6700	8000	9000	9000	10600	10600	12200	12200
Fan number	1	1	1	1	1	1	1	1	1
Fan power (kW)	0.7	1.0	1.7	2.3	2.3	1.5	1.5	1.8	1.8
Compressor⁴									
Number	1	1	1	1	2	1	2	1	2
Evaporator coil⁵									
Number	2	2	2	2	2	2	2	2	2
Electric heater⁶									
Power (kW)	6	6	6	6	6	9	9	9	9
Infrared humidifier									
Humidifying capacity (kg/h)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Humidifying pan	Stainless steel								
Filter⁷									
Number	1	1	4	4	4	4	4	4	4
Interface dimensions of indoor unit									
Liquid pipe ID (mm)	16	16	16	16	16	16	16	16	16
Liquid pipe number	1	1	1	1	2	1	2	1	2
Discharge pipe/water cooled air discharge pipe ID (mm)	22	22	22	22	22	22	22	22	22
Discharge pipe number	1	1	1	1	2	1	2	1	2
Infrared humidifier water in pipe OD (mm)	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Condensation water drainage pipe (mm)	19	19	19	19	19	19	19	19	19
Dimension									
Unit dimension (W*D*H) (mm)	853*874 *1970	853*874 *1970	1130*995 *1975	1130*995 *1975	1130*995 *1975	1330*995 *1975	1330*995 *1975	1330*995 *1975	1330*995 *1975
Weight									
Net weight (kg)	320	340	400	420	440	460	480	530	570
Electrical parameter									
FLA ⁸ (A)	28	33.2	32.8	35.7	33.6	43.2	42.4	48.2	51
Circuit breaker (A)	40	50	50	50	50	63	63	63	63

Notes: 1. For net capacities, deduct fan input power. Refer to the Liebert® PEX+ Rating for specific input conditions, air flow, and configuration.

2. The above cooling capacity is based on condensing temperature of 45°C.

3. The residual pressure out of units is 20Pa.

4. Scroll compressor, R407C refrigerant.

5. V type, copper tube, aluminium fin.

6. PTC heater

7. Based on ASHRAE52.1-1992, manual weighting method, the average filter efficiency is more than 90%, and the filter efficiency class is G4(EN779)

8. The full load current. The maximum full load current value of unit is not the sum of rated maximum full load current value of all components, but the sum of rated maximum full load current value of the operating components which may operate at the same time on the working condition of maximum load, including the current of outdoor unit.

Technical data of the DOWNFLOW air-cooled unit (R407C)

Model	P2060DA13S	P2070DA13S	P2080DA13S	P2090DA13S	P2100DA13S
Gross Cooling capacity and Sensible cooling capacity^{1,2} (kW)					
Cooling capacity (24°C DB 50%RH)	71	78.4	89.6	99.8	105.8
Sensible cooling capacity (24°C DB 50%RH)	64.3	71	81	90.2	95.6
Fan³					
Standard air volume (m ³ /h)	16000	18000	21200	24400	24400
Fan number	2	2	2	2	2
Fan power (kW)	3.5	4.6	3.0	3.7	3.7
Compressor⁴					
Number	2	2	2	2	2
Evaporator coil⁵					
Number	4	4	4	4	4
Electric heater⁶					
Power (kW)	9	9	12	12	12
Infrared humidifier					
Humidifying capacity (kg/h)	10	10	10	10	10
Humidifying pan	Stainless steel				
Filter⁷					
Number	8	8	8	8	8
Interface dimensions of indoor unit					
Liquid pipe ID (mm)	16	16	16	16	16
Liquid pipe number	2	2	2	2	2
Discharge pipe/water cooled air discharge pipe ID (mm)	22	22	22	22	22
Discharge pipe number	2	2	2	2	2
Infrared humidifier water in pipe OD (mm)	6.4	6.4	6.4	6.4	6.4
Condensation water drainage pipe (mm)	19	19	19	19	19
Dimension					
Unit dimension (W*D*H) (mm)	1830*995*1975	1830*995*1975	2230*995*1975	2230*995*1975	2230*995*1975
Weight					
Net weight (kg)	690	730	770	810	810
Electrical					
FLA ⁸ (A)	61.0	66.8	77.2	82.2	87.2
Circuit breaker (A)	80	80	100	100	125

Notes: 1. For net capacities, deduct fan input power. Refer to the Liebert® PEX+ Rating for specific input conditions, air flow, and configuration.

2. The above cooling capacity is based on condensing temperature of 45°C.

3. The residual pressure out of units is 20Pa.

4. Scroll compressor, R407C refrigerant.

5. V type, copper tube, aluminium fin.

6. PTC heater

7. Based on ASHRAE52.1-1992, manual weighting method, the average filter efficiency is more than 90%, and the filter efficiency class is G4(EN779)

8. The full load current. The maximum full load current value of unit is not the sum of rated maximum full load current value of all components, but the sum of rated maximum full load current value of the operating components which may operate at the same time on the working condition of maximum load, including the current of outdoor unit.

Technical data of the UPFLOW air-cooled unit (R407C)

Model	P1020 UA13C	P1025 UA13C	P1030 UA13C	P1035 UA13C	P1035 UA13S	P1040 UA13C	P1040 UA13S	P1050 UA13C	P1050 UA13S
Gross Cooling capacity and Sensible cooling capacity^{1,2} (kW)									
Cooling capacity (24°C DB 50%RH)	21.6	29.8	35.5	40.7	39.8	45.1	44.8	52.9	54.0
Sensible cooling capacity (24°C DB 50%RH)	19.5	26.9	32.1	36.9	36.1	40.8	40.5	47.8	48.8
Fan³									
Standard air volume (m ³ /h)	5500	6700	8000	9000	9000	10600	10600	12200	12200
Fan number	1	1	1	1	1	1	1	1	1
Fan power (kW)	0.8	1.2	1.9	2.5	2.5	1.8	1.8	2.2	2
Compressor⁴									
Number	1	1	1	1	2	1	2	1	2
Evaporator coil⁵									
Number	2	2	2	2	2	2	2	2	2
Electric heater⁶									
Power (kW)	6	6	6	6	6	9	9	9	9
Infrared humidifier									
Humidifying capacity (kg/h)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Humidifying pan	Stainless steel								
Filter⁷									
Number	1	1	4	4	4	4	4	4	4
Interface dimensions of indoor unit									
Liquid pipe ID (mm)	16	16	16	16	16	16	16	16	16
Liquid pipe number	1	1	1	1	2	1	2	1	2
Discharge pipe/water cooled air discharge pipe ID (mm)	22	22	22	22	22	22	22	22	22
Discharge pipe number	1	1	1	1	2	1	2	1	2
Infrared humidifier water in pipe OD (mm)	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Condensation water drainage pipe (mm)	19	19	19	19	19	19	19	19	19
Dimension									
Unit dimension (W*D*H) (mm)	853*874 *1970	853*874 *1970	1130*995 *1975	1130*995 *1975	1130*995 *1975	1330*995 *1975	1330*995 *1975	1330*995 *1975	1330*995 *1975
Weight									
Net weight (kg)	320	340	400	420	440	460	480	530	570
Electrical									
FLA ⁸ (A)	28	33.2	32.8	35.7	33.6	43.2	42.4	48.2	51
Circuit breaker (A)	40	50	50	50	50	63	63	63	63

Notes: 1.For net capacities, deduct fan input power. Refer to the Liebert® PEX+ Rating for specific input conditions, air flow, and configuration.

2.The above cooling capacity is based on condensing temperature of 45°C.

3. The residual pressure out of units is 50Pa.

4.Scroll compressor, R407C refrigerant.

5.V type, copper tube, aluminium fin.

6.PTC heater

7.Based on ASHRAE52.1-1992, manual weighting method, the average filter efficiency is more than 90%,and the filter efficiency class is G4(EN779)

8.The full load current. The maximum full load current value of unit is not the sum of rated maximum full load current value of all components, but the sum of rated maximum full load current value of the operating components which may operate at the same time on the working condition of maximum load, including the current of outdoor unit.

Technical data of the UPFLOW air-cooled unit (R407C)

Model	P2060UA13S	P2070UA13S	P2080UA13S	P2090UA13S	P2100UA13S
Gross Cooling capacity and Sensible cooling capacity^{1,2} (kW)					
Cooling capacity (24°C DB 50%RH)	71	78.4	89.6	99.8	105.8
Sensible cooling capacity (24°C DB 50%RH)	64.3	71.1	81	90.3	95.7
Fan³					
Standard air volume (m ³ /h)	16000	18000	21200	24400	24400
Fan number	2	2	2	2	2
Fan power (kW)	3.7	5	3.5	4.4	4.4
Compressor⁴					
Number	2	2	2	2	2
Evaporator coil⁵					
Number	4	4	4	4	4
Electric heater⁶					
Power (kW)	9	9	12	12	12
Infrared humidifier					
Humidifying capacity (kg/h)	10	10	10	10	10
Humidifying pan	Stainless steel				
Filter⁷					
Number	8	8	8	8	8
Interface dimensions of indoor unit					
Liquid pipe ID (mm)	16	16	16	16	16
Liquid pipe number	2	2	2	2	2
Discharge pipe/water cooled air discharge pipe ID (mm)	22	22	22	22	22
Discharge pipe number	2	2	2	2	2
Infrared humidifier water in pipe OD (mm)	6.4	6.4	6.4	6.4	6.4
Condensation water drainage pipe (mm)	19	19	19	19	19
Dimension					
Unit dimension (W*D*H) (mm)	1830*995*1975	1830*995*1975	2230*995*1975	2230*995*1975	2230*995*1975
Weight					
Net weight (kg)	690	730	770	810	810
Electrical					
FLA ⁸ (A)	61.0	66.8	77.2	82.2	87.2
Circuit breaker (A)	80	80	100	100	125

Notes: 1. For net capacities, deduct fan input power. Refer to the Liebert® PEX+ Rating for specific input conditions, air flow, and configuration.

2. The above cooling capacity is based on condensing temperature of 45°C.

3. The residual pressure out of units is 50Pa.

4. Scroll compressor, R407C refrigerant.

5. V type, copper tube, aluminium fin.

6. PTC heater

7. Based on ASHRAE52.1-1992, manual weighting method, the average filter efficiency is more than 90%, and the filter efficiency class is G4(EN779)

8. The full load current. The maximum full load current value of unit is not the sum of rated maximum full load current value of all components, but the sum of rated maximum full load current value of the operating components which may operate at the same time on the working condition of maximum load, including the current of outdoor unit.

Technical data of the DOWNFLOW chilled water unit

Model ¹	P1030D	P1040D	P1050D	P1060D	P2070D	P2080D	P2090D	P2100D	P2110D
Gross Cooling capacity and Sensible cooling capacity² (kW) based on Chilled Water Temperature 7°C / 12°C									
Cooling capacity (24°C DB 50%RH)	30.4	40.6	51.2	60.6	71.8	80.8	92.7	100.5	112.5
Sensible cooling capacity (24°C DB 50%RH)	27	34.4	41.4	48.1	61	70.1	75.2	83.2	89.7
Cooling capacity (24°C DB 45%RH)	27.6	36	47.6	56.3	63.8	72.5	85.1	94.3	103.2
Sensible cooling capacity (24°C DB 45%RH)	27.6	36	43	49.9	63.8	72.5	77.6	87	92.6
Fan³									
Standard blast volume (m ³ /h)	9200	9600	10200	11200	17000	20400	18600	21300	21300
Number	1	1	1	1	2	2	2	2	2
Fan power (kW)	1.2	1.4	1.7	1.9	2.3	3.6	3	4.2	3.7
Electric heater									
Power (kW)	6	6	6	6	9	9	9	9	9
Infrared humidifier									
Humidifying amount (kg/h)	4.5	4.5	4.5	4.5	10	10	10	10	10
Humidifying water pan	Stainless steel								
Filter									
Number	4	4	4	4	8	8	8	8	8
Interface dimensions (Outer diameter)									
Chilled water in and out pipes (mm)	32	32	32	42	42	42	54	54	54
Infrared humidifier pipe (mm)	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Condensation water drainage pipe (mm)	19	19	19	19	19	19	19	19	19
Chilled water supply requirement									
Inlet water flow (l/s) (24°C DB 50%RH)	1.5	1.9	2.4	2.9	3.4	3.9	4.4	4.8	5.4
Pressure drop (kPa) (24°C DB 50%RH)	52.1	59.8	97	69.4	63.1	79.1	75.5	88	99.7
Inlet water flow (l/s) (24°C DB 45%RH)	1.3	1.7	2.3	2.7	3	3.5	4.1	4.5	4.9
Pressure drop (kPa) (24°C DB 45%RH)	43.2	47.5	84.6	60.4	50.3	64.3	64.5	78.1	85
Dimension									
Unit dimension (W*D*H) (mm)	930*995 *1975	930*995 *1975	930*995 *1975	930*995 *1975	1680*995 *1970	1680*995 *1970	1680*995 *1970	1680*995 *1970	1830*995 *1970
Weight									
Net weight (kg)	280	305	330	335	590	590	600	600	610
Electrical									
FLA ⁴ (A)	13.5	13.5	13.5	13.5	22.6	22.6	22.6	22.6	22.6
Circuit Breaker (A)	100	100	100	100	100	100	100	100	100

Notes : 1.The standard model is two-way valve, with three-way valve optional. Compression strength of the valve is 4000kPa.

2.For net capacities, deduct fan input power. Refer to the Liebert® PEX+ Rating for specific input conditions, air flow, and configuration.

3.The residual pressure out of units is 20Pa.

4.The full load current. The maximum full load current value is not the sum of rated full load current value of all components, but the sum of the rated maximum full load current of the operating components under the maximum power load operation.

Technical data of the DOWNFLOW chilled water unit

Model ¹	P2120D	P2130D	P2140D	P3150D	P3160D	P3170D	P3180D	P3190D	P3200D
Gross Cooling capacity and Sensible cooling capacity² (kW) based on Chilled Water Temperature 7°C 12°C									
Cooling capacity (24°C DB 50%RH)	120.5	131	141.9	149.2	161.7	172.1	180.4	189.1	211.8
Sensible cooling capacity (24°C DB 50%RH)	100.1	104.9	112	123.2	132.1	137.9	146	154.6	167.1
Cooling capacity (24°C DB 45%RH)	112.3	120.9	130.1	138.9	150.4	157.9	167.7	177	194.2
Sensible cooling capacity (24°C DB 45%RH)	104.3	108.5	115.3	128.3	137.4	142.3	151.7	161.3	172
Fan³									
Standard blast volume (m ³ /h)	25900	24800	25600	31400	33100	33000	35500	38200	38200
Number	2	2	2	3	3	3	3	3	3
Fan power (kW)	4.8	4.5	4.9	5.9	5.8	5.9	5.8	6.9	7.1
Electric heater									
Power (kW)	9	9	9	12	12	12	12	12	12
Infrared humidifier									
Humidifying amount (kg/h)	10	10	10	10	10	10	10	10	10
Humidifying water pan	Stainless steel								
Filter									
Number	8	8	8	12	12	12	12	12	12
Interface dimensions (Outer diameter)									
Chilled water in and out pipes (mm)	54	54	54	66.8	66.8	66.8	66.8	66.8	66.8
Infrared humidifier pipe (mm)	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Condensation water drainage pipe (mm)	19	19	19	19	19	19	19	19	19
Chilled water supply requirement									
Inlet water flow (l/s) (24°C DB 50%RH)	5.7	6.2	6.8	7.1	7.7	8.2	8.6	9	10.1
Pressure drop (kPa) (24°C DB 50%RH)	113.7	94.4	110	84.1	89.6	100.7	110.2	120.5	104.6
Inlet water flow (l/s) (24°C DB 45%RH)	5.4	5.8	6.2	6.6	7.2	7.5	8	8.4	9.3
Pressure drop (kPa) (24°C DB 45%RH)	99.8	81.1	93.4	73.8	78.5	85.9	96.2	106.6	88.9
Dimension									
Unit dimension (W*D*H) (mm)	1830*995 *1970	1830*995 *1970	1830*995 *1970	2505*995 *1970	2730*995 *1970	2730*995 *1970	2730*995 *1970	2730*995 *1970	2730*995 *1970
Weight									
Net weight (kg)	660	710	760	860	875	890	890	895	970
Electrical									
FLA ⁴ (A)	22.3	22.3	22.3	31.5	31.5	31.5	31.1	31.1	31.1
Circuit Breaker (A)	100	100	100	100	100	100	100	100	100

Notes : 1.The standard model is two-way valve, with three-way valve optional. Compression strength of the valve is 4000kPa.

2.For net capacities, deduct fan input power. Refer to the Liebert® PEX+ Rating for specific input conditions, air flow, and configuration.

3.The residual pressure out of units is 20Pa.

4.The full load current. The maximum full load current value is not the sum of rated full load current value of all components, but the sum of the rated maximum full load current of the operating components under the maximum power load operation.

Technical data of the UPFLOW chilled water unit

Model ¹	P1030U	P1040U	P1050U	P1060U	P2070U	P2080U	P2090U	P2100U	P2110U
Gross Cooling capacity and Sensible cooling capacity² (kW) based on Chilled Water Temperature 7°C / 12°C									
Cooling capacity (24°C DB 50%RH)	30.4	40.6	51.2	60.6	71.8	80.8	92.7	100.5	112.5
Sensible cooling capacity (24°C DB 50%RH)	27	34.4	41.4	48.1	61	70.1	75.2	83.2	89.7
Cooling capacity (24°C DB 45%RH)	27.6	36	47.6	56.3	63.8	72.5	85.1	94.3	103.2
Sensible cooling capacity (24°C DB 45%RH)	27.6	36	43	49.9	63.8	72.5	77.6	87	92.6
Fan³									
Standard blast volume (m ³ /h)	9200	9600	10200	11200	17000	20400	18600	21300	21300
Number	1	1	1	1	2	2	2	2	2
Fan power (kW)	1.4	1.6	1.9	2.1	2.8	4.3	3.6	5	4.4
Electric heater									
Power (kW)	6	6	6	6	9	9	9	9	9
Infrared humidifier									
Humidifying amount (kg/h)	4.5	4.5	4.5	4.5	10	10	10	10	10
Humidifying water pan	Stainless steel								
Filter									
Number	4	4	4	4	8	8	8	8	8
Interface dimensions (Outer diameter)									
Chilled water in and out pipes (mm)	32	32	32	42	42	42	54	54	54
Infrared humidifier pipe (mm)	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Condensation water drainage pipe (mm)	19	19	19	19	19	19	19	19	19
Chilled water supply requirement									
Inlet water flow (l/s) (24 °C DB 50%RH)	1.5	1.9	2.4	2.9	3.4	3.9	4.4	4.8	5.4
Pressure drop (kPa) (24 °C DB 50%RH)	52	57.2	97	69.4	63.1	79.1	75.5	88	99.7
Inlet water flow (l/s) (24 °C DB 45%RH)	1.3	1.7	2.3	2.7	3	3.5	4.1	4.5	4.9
Pressure drop (kPa) (24 °C DB 45%RH)	43.1	47.5	84.6	60.4	50.3	64.3	64.5	78.1	85
Dimension									
Unit dimension (W*D*H) (mm)	930*995*1975	930*995*1975	930*995*1975	930*995*1975	1680*995*1970	1680*995*1970	1680*995*1970	1680*995*1970	1830*995*1970
Weight									
Net weight (kg)	280	305	330	335	590	590	600	600	610
Electrical									
FLA ⁴ (A)	13.5	13.5	13.5	13.5	22.6	22.6	22.6	22.6	22.6
Circuit Breaker (A)	100	100	100	100	100	100	100	100	100

Notes : 1.The standard model is two-way valve, with three-way valve optional. Compression strength of the valve is 4000kPa.
 2.For net capacities, deduct fan input power. Refer to the Liebert® PEX+ Rating for specific input conditions, air flow, and configuration.
 3.The residual pressure out of units is 50Pa.
 4.The full load current. The maximum full load current value is not the sum of rated full load current value of all components, but the sum of the rated maximum full load current of the operating components under the maximum power load operation.

Technical data of the UPFLOW chilled water unit

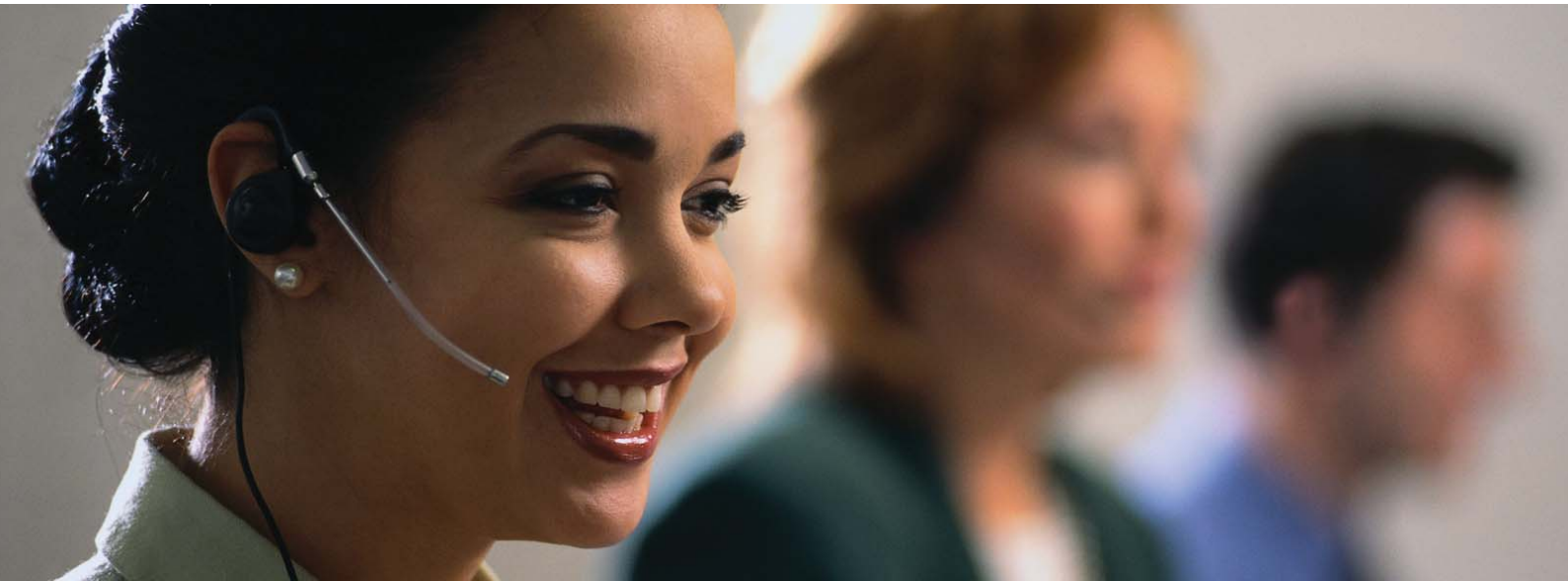
Model ¹	P2120U	P2130U	P2140U	P3150U	P3160U	P3170U	P3180U	P3190U	P3200U
Gross Cooling capacity and Sensible cooling capacity² (kW) based on Chilled Water Temperature 7°C 12°C									
Cooling capacity (24°C DB 50%RH)	120.5	131	138	149.2	161.7	172.1	180.4	189.1	207
Sensible cooling capacity (24°C DB 50%RH)	100.1	104.9	108.4	123.2	132.1	137.9	146	154.6	162.6
Cooling capacity (24°C DB 45%RH)	112.3	120.9	126.5	138.9	150.4	157.9	167.7	177	189.8
Sensible cooling capacity (24°C DB 45%RH)	104.3	108.5	111.5	128.3	137.4	142.3	151.7	161.3	167.3
Fan³									
Standard blast volume (m ³ /h)	25900	24800	24600	31400	33100	33000	35500	38200	36900
Number	2	2	2	3	3	3	3	3	3
Fan power (kW)	5.2	5.3	5.3	7.2	7.0	7.1	7.3	7.9	8.0
Electric heater									
Power (kW)	9	9	9	12	12	12	12	12	12
Infrared humidifier									
Humidifying amount (kg/h)	10	10	10	10	10	10	10	10	10
Humidifying water pan	Stainless steel								
Filter									
Number	8	8	8	12	12	12	12	12	12
Interface dimensions (Outer diameter)									
Chilled water in and out pipes (mm)	54	54	54	66.8	66.8	66.8	66.8	66.8	66.8
Infrared humidifier pipe (mm)	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Condensation water drainage pipe (mm)	19	19	19	19	19	19	19	19	19
Chilled water supply requirement									
Inlet water flow (l/s) (24°C DB 50%RH)	5.7	6.2	6.6	7.1	7.7	8.2	8.6	9	9.9
Pressure drop (kPa) (24°C DB 50%RH)	113.7	94.4	104.3	84.1	89.6	100.7	110.2	120.5	100.3
Inlet water flow (l/s) (24°C DB 45%RH)	5.4	5.8	6	6.6	7.2	7.5	8	8.4	9
Pressure drop (kPa) (24°C DB 45%RH)	99.8	81.1	88.5	73.8	78.5	85.9	96.2	106.6	85.1
Dimension									
Unit dimension (W*D*H) (mm)	1830*995*1970	1830*995*1970	1830*995*1970	2505*995*1970	2730*995*1970	2730*995*1970	2730*995*1970	2730*995*1970	2730*995*1970
Weight									
Net weight (kg)	660	710	760	860	875	890	890	895	970
Electrical									
FLA ⁴ (A)	22.3	22.3	22.3	31.5	31.5	31.5	31.1	31.1	31.1
Circuit Breaker (A)	100	100	100	100	100	100	100	100	100

Notes : 1.The standard model is two-way valve, with three-way valve optional. Compression strength of the valve is 4000kPa.

2.For net capacities, deduct fan input power. Refer to the Liebert® PEX+ Rating for specific input conditions, air flow, and configuration.

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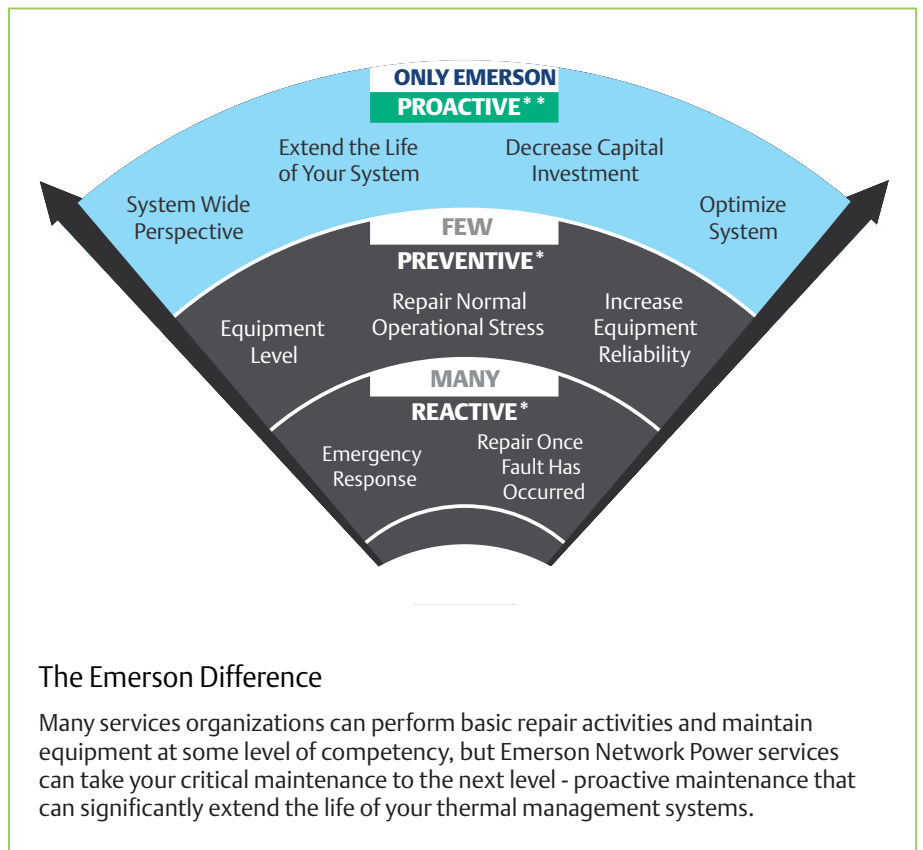


SUPPORT

Maximizing the performance and efficiency of your data center's precision air conditioning units and other critical power systems require they be properly maintained by factory-trained technicians.

Emerson Network Power, Liebert® Services is the only service organization in the world that has been factory trained on Liebert® cooling equipment and is continuously supported and updated by the engineers who built the equipment.

Our Customer Engineers have a better knowledge of how to maintain Liebert® equipment and integrate it into the overall data center infrastructure support strategy than any service provider.



Emerson Network Power, Liebert® Services

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As long as data centers have existed, Liebert® Services has been supporting data center infrastructures and providing integrated services for mission-critical environments.

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Unparalleled Responsiveness

With Liebert® Services, you have 24/7 access to a network of data center infrastructure specialists armed with

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