



# Liebert® PEX4™

40 - 120kW

Unsurpassed Thermal Management  
Solution with Premium Efficiency



## Emerging Trends & Technology in Data Center Cooling

Hybrid infrastructure is a growing trend in the data center industry. Studies\* predict that by 2025, 80% of companies will replace their traditional data centers with a hybrid design, which requires a more efficient cooling approach.

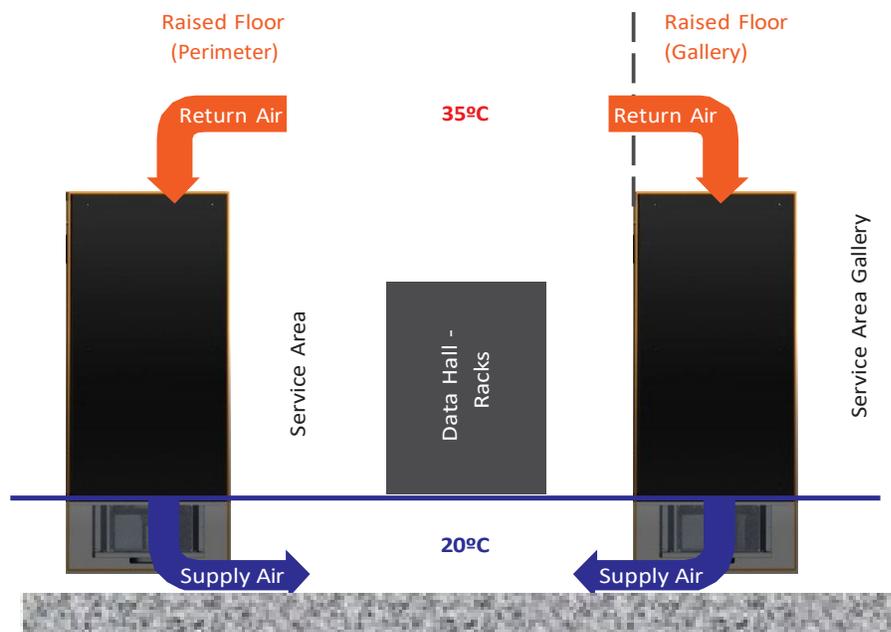
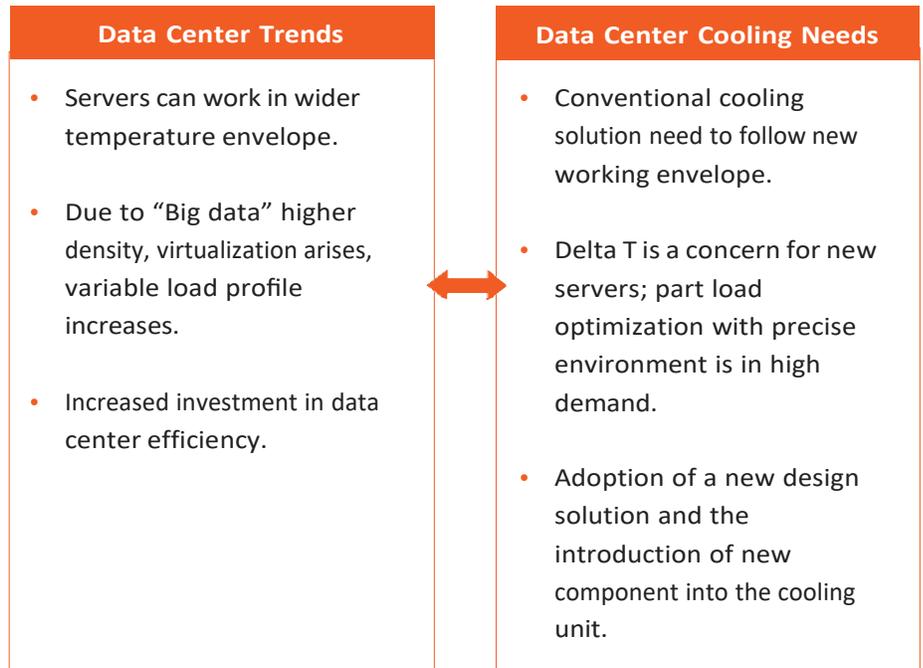
When it comes to thermal management systems, there are certain limitations in the fixed compressor or legacy variable systems as these cannot cope with extended evaporating temperatures and have finite compressor control during partial load.

Below are some of the emerging trends in the data center trends thermal management space:

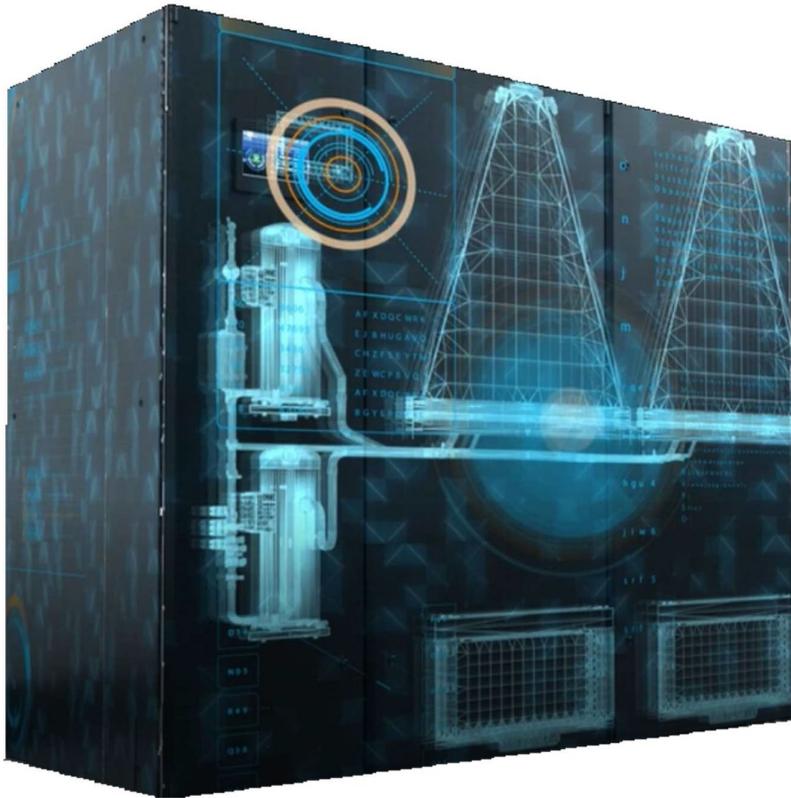
*\*Reference Source:  
(<https://blogs.gartner.com/smarterwithgartner/author/kcostello/>, 2018)*

As server power consumption changes in proportional to computational loads, it affects the required airflow through the server.

Additionally, virtualization is commonly deployed to improve the server utilization ratio, which can result in varying power requirements. Thermal management systems must provide variable cooling capacity and variable airflow to properly match the variable power and variable airflow of today's technology rooms.



- Increasing Delta T on the server arguments server efficiency (less fan power).
- To optimize the cooling effect in IT infrastructure and energy efficient operation; higher working-temperature envelope is very useful.

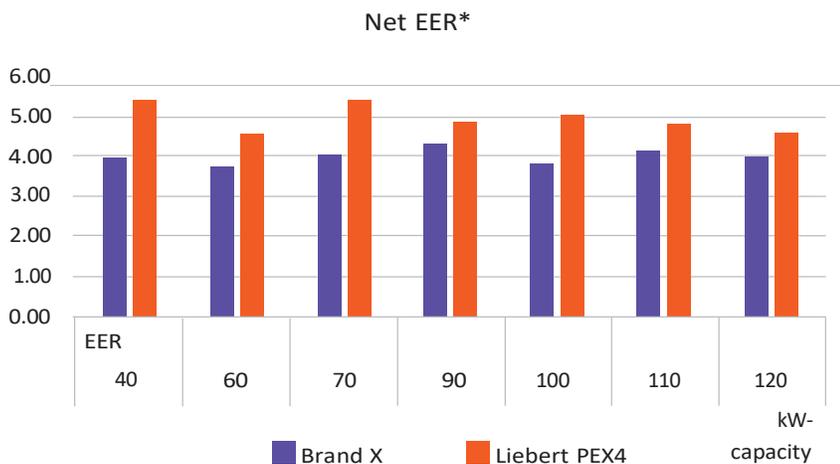


## Introducing Next-Gen Thermal Management Solution for Data Center

**Liebert® PEX4™** is a direct expansion R410a gas heat exchanger with enhanced capacity fit into compact footprint.

Combining the best accessories such as inverter compressor, EC fan, EEV & microchannel coil, Liebert PEX4 with superior technology allows modern data centers to enjoy abundant load variations with premium efficiency.

### Premium Efficiency brought by VERTIV

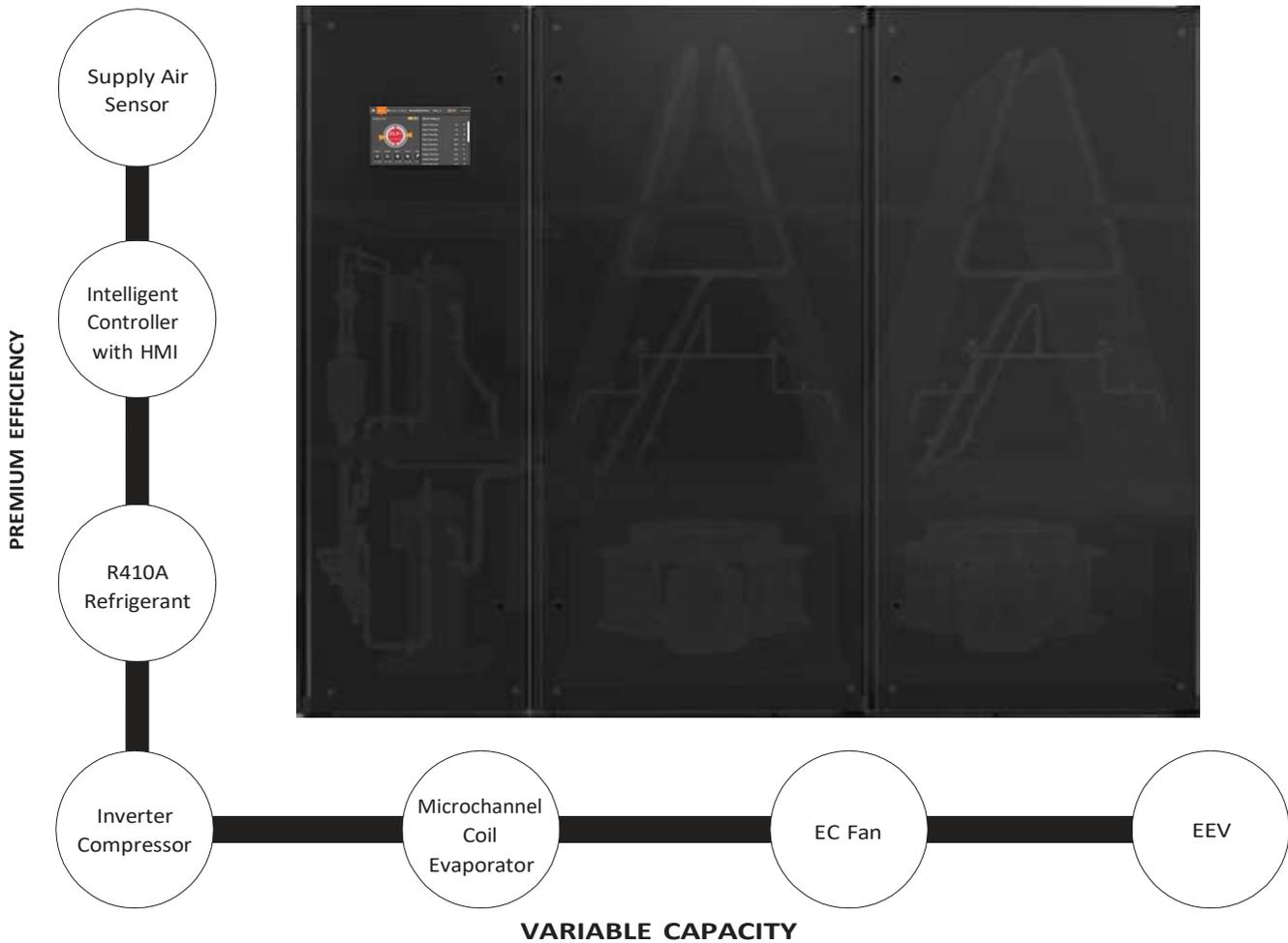


\* EER is calculated at return air condition of 33°C RH & condensing temp of 45°C

### Quick Facts

- Exceptional efficiency at partial load, almost 25% more efficient than other make.
- Regulation of the inverter driven compressor between 30 and 100% of the rated value.
- Microchannel based evaporator coil with multiple electronic expansion valves maximize heat transfer and minimizes power consumption.

# Liebert® PEX4™ 40-120kW



### Additional Options

- Steam Humidifier
- Infrared Humidifier
- One/Two Stage Heater

Smart and Intelligent Microprocessor Controller features a unique algorithm and touch screen display for managing PEX4 operation, ensuring maximum reliability under all conditions.

Advance technology based ® Liebert PACC™ controller with touch screen display acts as the brain of the precision cooling system, providing the optimum performance under varying load conditions, resulting in huge savings in operating expenses, control of the unit includes the automatic restart functions after a power failure, BacNet BMS communication interface, includes input for remote on/off contacts.

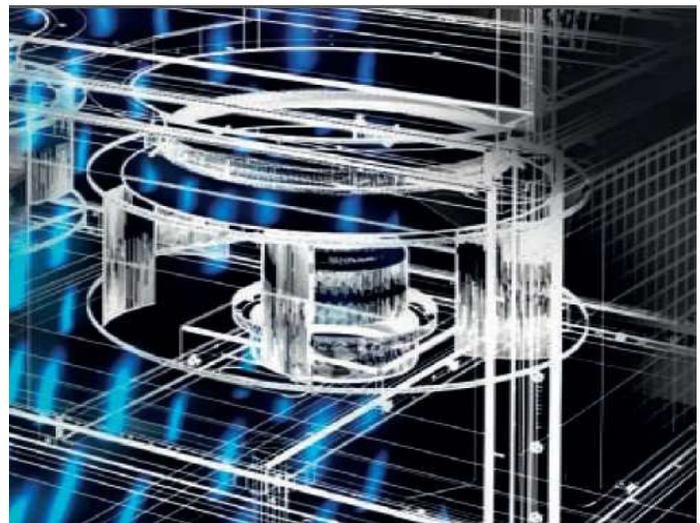


## Scroll Compressor

- Optimized variable speed design through efficient BPM motor, wide speed range 1000 ~ 7200 RPM for part load efficiency.
- Expanded operating envelope for a wide range of cooling applications also contributes to premium efficiency. Special care is taken for EMF with filter.
- Intelligent oil circulation logic during low speed performance & reliability.
- Coupled with environment friendly refrigerant (R410A) & EEV, premium efficiency is achieved as compared to legacy solution; part load COP as high as > 5.5.

## EC Fan

- The unit is equipped with a direct, high efficiency, single inlet, backward curved, variable frequency for speed control, centrifugal plug type innovative EC fan(s) with IP54 electrical motor protection.
- The EC fan technology regulates airflow and reduces the fan input power. In-floor configuration further reduces energy consumption in downflow units.
- Liebert EC 2.0 fan modulates the fan speed according to load density; saving nearly 30% of energy consumption.



# Liebert® PEX4™ 40-120kW

## Enhanced efficiency achieved with a new evaporator coil design Introducing an Aluminum **Microchannel Coil**, first ever used in PEX design

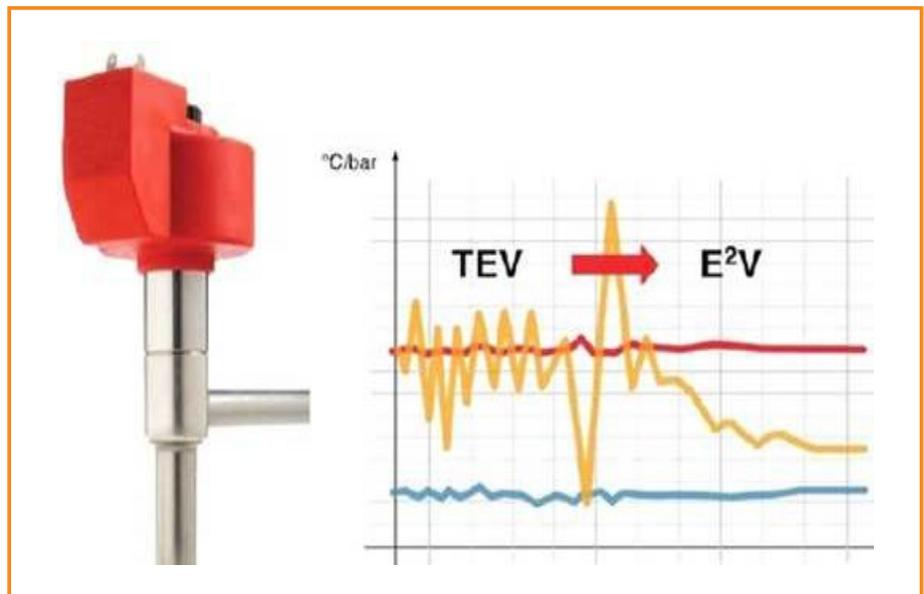


- Enhanced efficiency through evaporator coil powered by 32mm flat tube Microchannel Aluminum coils single row.
- Multiple micro channels improve heat transfer.
- Flat tube results in lesser air side pressure drop, less power consumption.
- Compact design & less also resulting in reduced unit weight.
- Each cooling module consists of a “V” shaped microchannel coil & is configured with two EEVs with common driver. More than 60kW capacity PEX4 unit does have two cooling modules with dual electronic expansion valves in each module with same driver arrangement for two EEVs.

### **ELECTRONIC EXPANSION VALVE**

Necessary for integrated and optimal variable capacity control.

Maintain constant superheat & dehumidification assistance.



## Technical Parameters

Parameters	P1035	P1045	P1050	P1060	P2070
Dimensions (WxDxH) (mm)	1330 × 995 × 1975			2430 × 995 × 1975	
Operational Weight (kg)	425	430	460	465	750
Test condition & Loading : RAT 35°C/26%RH, Condensing temp 45°C & 100% loading					
Net Sensible Cooling Capacity (kW)*	39.7	46.2	51.1	61.4	73.0
Air Flow (m <sup>3</sup> /h)	13000	13500	14200	14200	14800
Power Consumption (KW)	20.4	22.8	28.9	34.8	41.1
EC Fan ESP (Pa)	Available ESP : 50 ~ 200; Standard for down flow: 50Pa & up flow: 50Pa				
Type of filter	Dry media type (EU4/MERV8 rating)				
Electrical Characteristics	380V ~ 415V 3P+N; 50Hz/60Hz				

Parameters	P2080	P2090	P2100	P2110	P2120
Dimensions (WxDxH) (mm)	2430 × 995 × 1975				
Operational Weight (kg)	755	760	780	785	790
Test condition & Loading : RAT 35°C/26%RH, Condensing temp 45°C & 100% loading					
Net Sensible Cooling Capacity (kW)*	81.6	92.4	101.8	112.3	123.2
Air Flow (m <sup>3</sup> /h)	16900	19000	21200	22350	24400
Power Consumption (KW)	42.4	45.6	46.2	47.7	49.9
EC Fan (ESP) (Pa)	Available ESP : 50 ~ 200; Standard for down flow: 50Pa & up flow: 50Pa				
Type of filter	Dry media type (EU4/MERV8 rating)				
Electrical Characteristics	380V ~ 415V ; 3P+N; 50Hz/60Hz				

### Note:

- \*Net sensible cooling capacity is calculated at above given condition
- P1035~P1060 equipped with 1 X Scroll compressor driven by inverter drive, single heat rejection
- P2070~P2120 equipped with 2 X Scroll compressor driven by inverter drive, single heat rejection
- 1 or 2 stage heater & Infra red/bottle type humidifier are available on request
- F5 filter is available on request
- Specification are subject to change without any prior notice.



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TM-EN-AP-15-1-0-19-06