

TODAY'S ENERGY SAVING AND WATER-FREE DATA CENTER



LIEBERT® DSE™ PACKAGED SOLUTION, 400-500kW

FACTS

Cooling equipment accounts for as much as **40%** of data center operating costs. A 1 MW data center using a chilled water cooling system with a water-cooled chiller plant uses around 6.75 million gallons of water annually.¹

CHALLENGE

Colocation, cloud hosting and other large data centers need cooling solutions with low total cost of ownership - solutions that save energy, eliminate water usage, reduce risk and simplify thermal management.

SOLUTION

The **Liebert® DSE™** Packaged Solution is the world's most efficient and reliable water-free cooling system for data centers. Available as a 400kW or 500kW packaged solution for building perimeter or rooftop installations, the Liebert DSE provides a very competitive total cost of ownership solution.

The Liebert® DSE™ Packaged Freecooling Solution, 400-500kW system is the world's most reliable and efficient water-free cooling system for colocation, cloud hosting and other large data centers. Offering superior reliability, the Liebert DSE uses proven pumped refrigerant economization technology from Vertiv, deployed in more than 6000 installations worldwide.

Low Max kW

- Nearly 300 square feet of condenser surface and multiple refrigerant circuits reduce operating and peak power

Low Air Leakage

- No volumetric displacement of outside air, in contrast to heat wheel solutions
- Thermal break construction for less condensation

Easy Service Access

- All components serviced from rear of unit
- Units capable of being placed side-by-side



Rapid Deployment

- Multiple configurations on perimeter or rooftop deployments
- Reduced weight and footprint

Optimal Annual Energy Usage

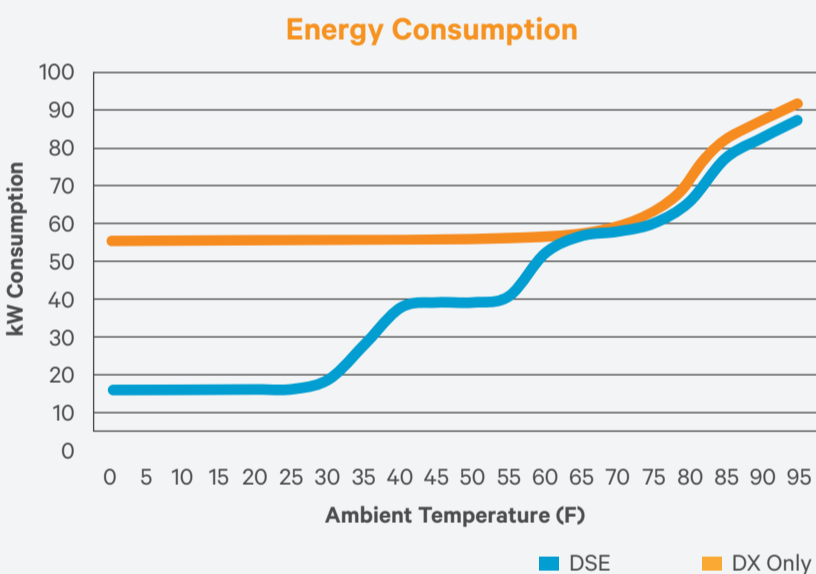
- DSE Optimization control improves efficiency by up to 50 percent
- Automatic, smooth transitions between economizer modes via Liebert iCOM Autotuning capture more economizer hours
- Efficient in low load / part load conditions

Less Maintenance

- No heat wheels, seams or motors to maintain
- Liebert pump basically maintenance free
- No outside air dampers or outside air filters

OPTIMIZING YOUR DATA CENTER COOLING

1 SHATTER INDUSTRY EFFICIENCY STANDARDS



The **Liebert DSE** Packaged Solution has an annual mechanical PUE of under 1.20. Its advanced Liebert iCOM™ controls automatically transition operating modes to maximize annual economization hours, compared to units running only in DX (direct expansion) mode. Additionally, low air leakage compared to heat wheels means less capacity is required for makeup air and conditioning.

2 CONSERVE WATER AND REDUCE COMPRESSOR RUNTIME

Reliable, low-maintenance pumped refrigerant economizer optimizes performance

- No water usage
- No water treatment
- No dampers and louvers to adjust and maintain
- Automatic switchover to maximize economizer hours
- Less refrigerant charge than traditional DX systems



Saves around 6.75 million gallons of water annually, compared to a 1MW data center with a chilled water cooling system with a water-cooled chiller plant.¹

3 SPEED DEPLOYMENT

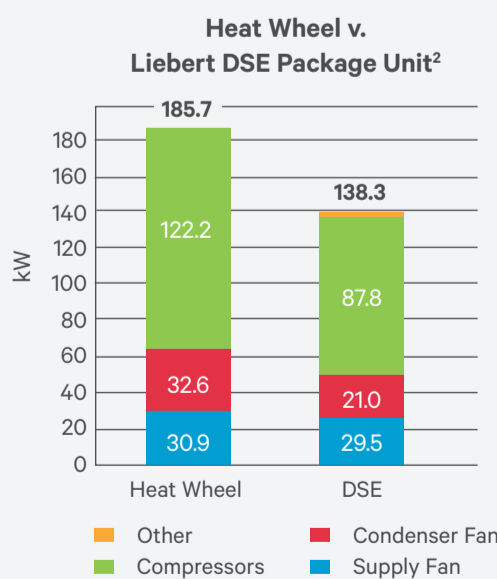
The Liebert DSE Packaged Solution provides a high-density footprint with multiple outdoor configurations, and is designed with features that speed deployment:

- Ships as a single unit that is pre-wired and fully tested
- No hoods, outside air dampers or other components to install, seal or weatherproof
- DX circuit pre-charged at the factory - no field brazing or charging required
- Low unit weight of under 25,000 pounds allows use of smaller, more accessible cranes
- Liebert iCOM controls provide unit-to-unit networking and fast integration with building management systems



4 MAKE MONEY, SAVE MONEY

The Liebert DSE Packaged Solution uses lower peak power than heat wheels, allowing you to reduce electrical infrastructure or have more IT power capacity for use or for sale to customers.



In a 4.2MW data center, that provides:

- 463 KW more annual IT power capacity

OR

- 7.6 percent smaller power infrastructure

LEARN MORE: For more information visit VertivCo.com

Sources

¹Uptime Institute, June 2016

²Data center conditions: 104° F Ambient; 60,300 ACFM; 420 KW; 22° F ΔT