TODAY'S ENERGY SAVING AND WATER-WISE DATA CENTER

VERTIV.

LIEBERT® DSE™ FREECOOLING SYSTEM 250KW

FACTS

Cooling equipment accounts for as much as **40%** of data center operating costs.[1] A chilled water cooling system for a 1MW data center uses around **4 million gallons** of water annually.[2]

CHALLENGE

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

SOLUTION

The **Liebert® DSE™ Freecooling System** is the world's most efficient and reliable water-free cooling system for data centers. The Liebert DSE 250kW split-system is highly efficient, uses no water, is rapidly deployable and has an attractive total cost of ownership. It uses the proven pumped refrigerant economization technology from Vertiv deployed in more than 4,000 installations worldwide.

The Liebert® DSE™ 250kW system is the world's most reliable and efficient water-free cooling system for colocation, cloud hosting and other large data centers. The solution helps companies save money, reduce risk and more easily manage their data centers. Offering superior flexibility, the Liebert DSE 250kW system can be use in a fan array or perimeter layout, with no ductwork and reduced outdoor footprint for multi-story applications.

High Energy Efficiency

- Pumped refrigerant economizer uses less than one-tenth the power of compressors
- Highly efficient in low load/part load conditions
- Low max kW for more available IT power

Liebert MCV Outdoor Condenser and Refrigerant Pump Package

Easier Servicing

- Rear-access servicing
- No need to enter the data center
- Refrigerant pump is virtually maintenance free
- No dampers to service or outside air filters to replace

Liebert DSE 250kW Indoor Unit

Easier to Manage

- Advanced Liebert iCOM™ monitoring and control algorithms for multi-unit teamwork, automated transitions to economization and automated protection routines

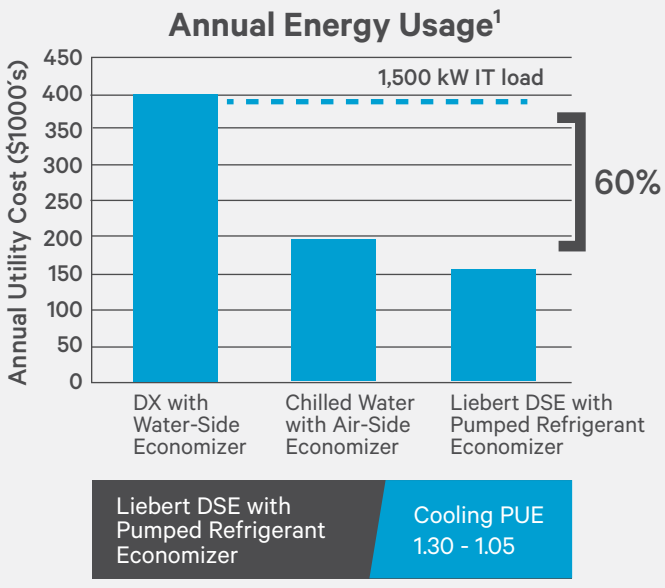
Saves White Space

- High-density design supports loads of more than 250 watts per square foot
- Units can be situated side by side to form a "fan array"
- Underfloor or front air discharge

AHRI CERTIFIED® www.ahridirectory.org Datacom Cooling AHRI Standard 1360

OPTIMIZING YOUR DATA CENTER COOLING

1 SHATTER INDUSTRY EFFICIENCY STANDARDS



The **Liebert DSE 250kW** has an annual pPUE of under 1.3 and supports a lower ΔT. Its advanced Liebert iCOM controls automatically transition operating modes to **maximize annual economization hours.** Low air leakage 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
- Lower refrigerant charge than traditional DX systems

Saves around 4 million gallons of water annually in a 1MW data center, compared to a chilled water system[2].

3 SPEED DEPLOYMENT

The Liebert DSE 250kW provides a **high-density footprint** with three airflow options and features that speed deployment:

- Liebert iCOM controls provide unit-to-unit networking and fast integration with building management systems
- Separate fan and coil sections
- Split system with ability to place units side by side
- All service from back (non-data center side)
- No hoods, ducts, dampers or other components to install, seal or weatherproof
- DX circuit pre-charged at the factory-no field brazing or charging required
- Pre-wired and pre-tested

4 MAKE MONEY, SAVE MONEY

The Liebert DSE 250kW **saves money** with a high-capacity footprint supporting densities exceeding 250 watts/square foot and additional airflow to support a lower ΔT. Advanced Liebert iCOM controls manage airflow and temperature based on indoor and ambient conditions to find the "sweet spot" for efficiency and protection.

Peak Power Usage and ΔT[3]

Cooling Unit ΔT	Capacity (kW)	Indoor Fan kW	Total Peak kW	Peak Cooling PUE	
20	178	21.9	74	1.41	Wasted Fan kW
22	190	14.2	66	1.35	Balanced "Sweet Spot"
25	199	12.7	64	1.32	
28	199	11.2	63	1.32	High Efficiency, High Return Air
32	193	7.14	59	1.30	
35	188	5.37	57	1.30	

LEARN MORE: For more information on the Liebert DSE 250kW, visit *VertivCo.com*

Sources

[1] Vertiv calculations with certification for capacity and efficiency under the Air Conditioning and Heating Institution (AHRI) 1360 Program for Computer Room Air Conditioning.

[2] Vertiv calculations of average gallons saved in U.S. locations.