

# Liebert® DSE Outdoor Packaged Freecooling Solution

400-500kW



## BENEFITS

### Save Money

- High-efficiency, with an operational PUE under 1.20
- DSE Optimization control improves efficiency by up to 50 percent
- Low peak power to allow downsizing of backup generator capacity or more IT power for sale
- Eliminates water usage, cost and treatment
- Lower air leakage and no volumetric displacement, eliminating the need for additional fan power or make-up air capacity
- Rapidly scalable for faster deployment and time to market
- Low operating costs for higher profitability

### Lower Risks

- Proven pumped refrigerant economization technology used in more than 6000 installations worldwide
- Multiple fans, DX circuits and other key components for ride-through

### Manage More Easily

- Advanced Liebert® iCOM™ controls that automatically manage unit lead/lag, protect against coil freeze, maximize economization and other routines
- Easy integration to BMS using onboard protocols

## More Efficient. More Flexible. Smoother Transitions.

The Liebert DSE 400-500kW solution 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. It integrates the evaporator, condenser, compressors, refrigerant economizer pumps and thermal controls in a single, easy to deploy outdoor packaged solution. The highly scalable system is available in rooftop and outdoor perimeter configurations.

### Optimal Annual Energy Usage

- New DSE Optimization control improves efficiency by up to 50 percent
- Advanced Liebert iCOM control algorithms for multi-unit teamwork, automated transitions to economization and automated protection routines
- Highly efficient in low load or part load conditions

### Low Max kW

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

### Easy to Manage

- Easy integration to BMS using onboard protocols
- Automatic, smooth economization transitions via Liebert iCOM DX Autotuning control



### Easy to Service

- All components can be serviced from the rear of the unit, allowing units to be placed side-by-side
- No heat wheel, seals, motors to clean and maintain
- Liebert economization pumps are virtually maintenance free
- No outside air dampers to service or outside air filters to replace

### Lower Air Leakage

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

### Easy Fit Up to Building

- Multiple airflow configurations
- Perimeter or rooftop deployments
- Reduced weight and footprint

The Liebert® DSE 400-500kW is the ideal solution for large data center applications requiring high efficiency, no water usage, low maintenance and rapid scalability. It offers:

- More stable data center environment, with no cross-contamination or transfer of humidity, through physical separation of heat rejection and data center air
- Low peak power, for smaller generator sizing or more IT power to sell
- Advanced Liebert® iCOM™ controls for automatic protection routines, multi-unit teamwork and greater efficiency

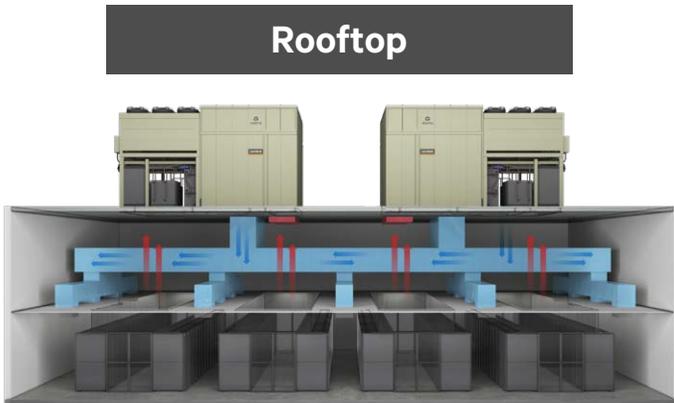
## Save More Money

Liebert DSE controls include an Optimization feature that improves upon the already industry-leading efficiency of the system.

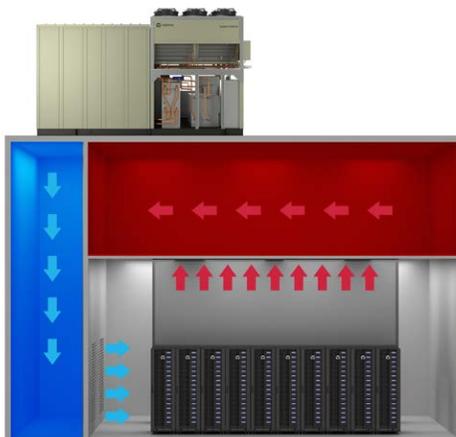


- 50% more efficient via new optimized controls
- Standard on all new Liebert DSE units
- Available as retrofit to existing Liebert DSE units
- 18 month average payback period on retrofits

### Rooftop



### Rooftop Draw-thru



### Perimeter



*The Liebert DSE freecooling solution is scalable in 400kW and 500kW unit capacities, with both perimeter and rooftop configurations to support growing and changing data center loads and site requirements.*