



**VERTIV™**

**SmartAisle™**

Datacenter Efficiency  
Management Platform



Using SmartAisle™ solution most of the traditional approach limitations can be significantly improved. SmartAisle™ solution increases space efficiency with heat load limit up to 12kW/rack with Liebert PDX/PCW units and up to 20 kW/rack with Liebert CRV cooling units.

SmartAisle™ provides always uniform and predictable temperature to all IT equipment controlling directly cold aisle temperature and humidity. Optimized cooling system efficiency is achieved by optimizing the return air temperature without compromising reliability.

In combination with free cooling chilled water system it can provide up to 50%+ efficiency increase and consequently fast return of investment (ROI).

SmartAisle™ allows easy retrofit and low initial investment as it fits existing Knurr racks



## FEATURES

- Physical separation of cold and warm air zones
- The Liebert® iCOM® control system featured on Thermal Management products brings high-level control and supervision to multiple units, allowing up to 32 cooling units to work together as a single system to optimize room performance
- **SmartAisle™** solution in combination with chilled water system with free cooling is the best practice how to maximize energy efficiency. This result has been reached by enhancing free cooling effect thanks to using higher fluid temperature.
- **SmartAisle™** solution in combination with direct expansion system can offer more than 34% saving thanks to intelligent control of Digital Scroll Compressor capacity and accurate fan speed management driven by cold aisle conditions. SmartAisle™ solution provides consistently hot return air for more effective precision cooling system performance.
- Flexibility and the best efficiency is achieved using EC fan technology and SmartAisle™ control logic

### Savings - Chilled Water System

**36.7%**

**47.9%**

|              | Traditional Approach | With Cold Aisle Containment | With SmartAisle™ |
|--------------|----------------------|-----------------------------|------------------|
| Chiller*     | 54.8%                | 41.5%                       | 35.2%            |
| Pumps*       | 10.5%                | 9.7%                        | 9.6%             |
| Cooling Unit | 34.7%                | 12.0%                       | 7.4%             |
| <b>Total</b> | <b>100%</b>          | <b>63.3%</b>                | <b>52.1%</b>     |

### Savings - Direct Expansion System

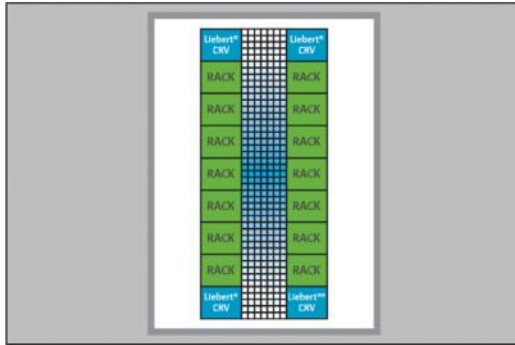
**20,2%**

**34,3%**

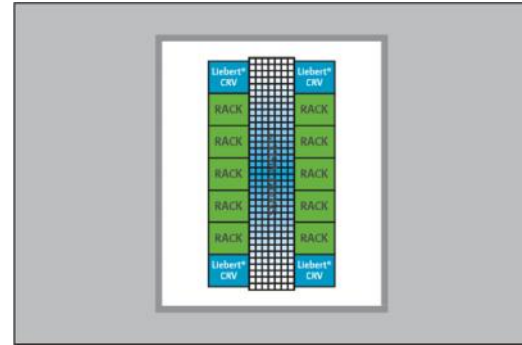
|                | Traditional Approach | With Cold Aisle Containment | With SmartAisle™ |
|----------------|----------------------|-----------------------------|------------------|
| Compressor     | 72.2%                | 59.2%                       | 55.2%            |
| Condenser      | 5.8%                 | 5.8%                        | 5.8%             |
| Evaporator Fan | 22.0%                | 14.9%                       | 4.7%             |
| <b>Total</b>   | <b>100%</b>          | <b>79.8%</b>                | <b>65.7%</b>     |

## Case Study: Direct Expansion System With Row-Based CRAC Units

### Traditional Approach



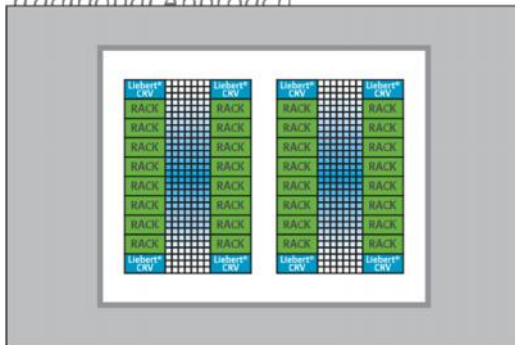
### SmartAisle™



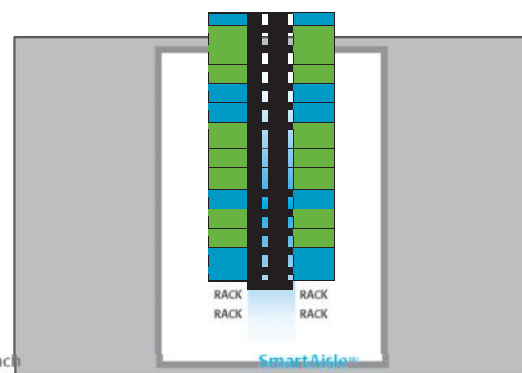
|  |                   | Traditional Approach | SmartAisle™ |
|--|-------------------|----------------------|-------------|
| Data Center Heatload                     | (kW)              | 100                  | 100         |
| Location                                 |                   | Munich, Germany      |             |
| Racks Qty                                | (-)               | 14                   | 10          |
| Min. Data Center footprint               | (m <sup>2</sup> ) | 54                   | 42          |
| Redundancy for CRAC units                | (-)               | N+1                  | N+1         |
| CRAC unit type                           | (-)               | CRO35 RA             | CRO35 RA    |
| Condenser                                | (-)               | HCR051               | HCR051      |
| CRAC Qty                                 | (-)               | 4                    | 4           |
| Heatload per Rack                        | (kW)              | 7.15                 | 10          |
| Annual energy consumption of the system: | (kWh)             | 239380               | 217868      |

## Case Study: Chilled Water System With Row-Based CRAC Units

### Traditional Approach



### SmartAisle™



|  |                   | Traditional Approach | SmartAisle™ |
|--|-------------------|----------------------|-------------|
| Data Center Heatload                     | (kW)              | 200                  | 200         |
| Location                                 |                   | Munich, Germany      |             |
| Racks Qty                                | (-)               | 32                   | 20          |
| Min. Data Center footprint               | (m <sup>2</sup> ) | 93.5                 | 66          |
| Redundancy for CRAC units                | (-)               | N+1                  | N+1         |
| CRAC unit type                           | (-)               | CR040 RC             | CR040 RC    |
| CRAC Qty                                 | (-)               | 8                    | 8           |
| Freecooling Chiller                      | (-)               | FG0023               | FG0023      |
| Fluid 35% Ethylene Glycol                | (°C)              | 10/15                | 14/19       |
| Heatload per Rack                        | (kW)              | 6.25                 | 10          |
| Annual energy consumption of the system: | (kWh)             | 304438               | 242670      |

Power input of pumps is not considered



**COSTA POWER INDUSTRIES PVT. LTD.**

209, 2nd Floor, Infinity Business Park, Behind Pendharkar College,  
MIDC Phase - 1, Dombivli(E), Thane - 421023.  
Phone No. - 9820710392 / 9372217661.  
Email - [sales@upsbatteriesindia.com](mailto:sales@upsbatteriesindia.com) / [sunil@upsbatteriesindia.com](mailto:sunil@upsbatteriesindia.com).