



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%
Total	100%	63.3%	52.1%

Savings - Direct Expansion System

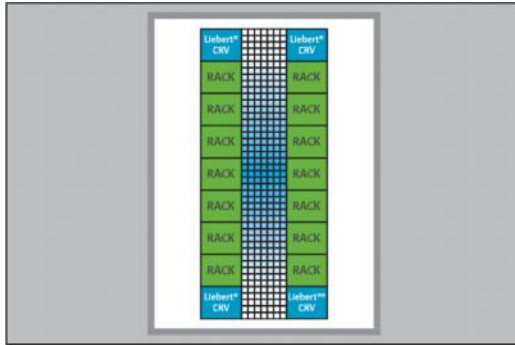
20,2%

34,3%

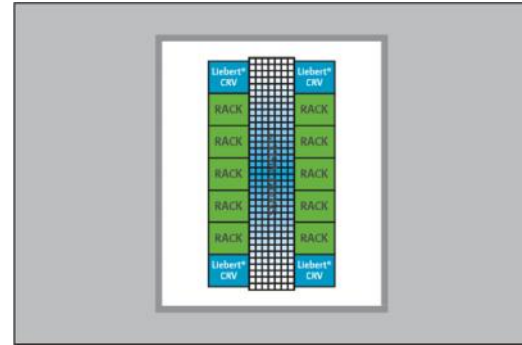
	Traditional Approach	With Cold Aisle Containment	With SmartAisle™
Compressor	72.2%	59.2%	55.2%
Condenser	5.8%	5.8%	5.8%
Evaporator Fan	22.0%	14.9%	4.7%
Total	100%	79.8%	65.7%

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

Traditional Approach



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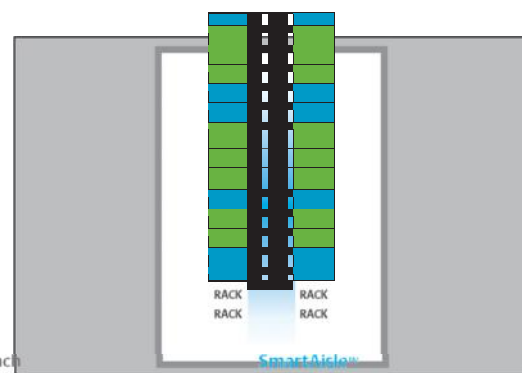
		Traditional Approach	SmartAisle™
Data Center Heatload	(kW)	100	100
Location		Munich, Germany	
Racks Qty	(-)	14	10
Min. Data Center footprint	(m ²)	54	42
Redundancy for CRAC units	(-)	N+1	N+1
CRAC unit type	(-)	CRO35 RA	CRO35 RA
Condenser	(-)	HCR051	HCR051
CRAC Qty	(-)	4	4
Heatload per Rack	(kW)	7.15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

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

Traditional Approach



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		Traditional Approach	SmartAisle™
Data Center Heatload	(kW)	200	200
Location		Munich, Germany	
Racks Qty	(-)	32	20
Min. Data Center footprint	(m ²)	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



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