Solutions
For *Business-Critical Continuity™*

Smart Solutions Reference Summary

180kW Tier 2 With Row-Based Cooling, Room-Based Power

SmartDesign™

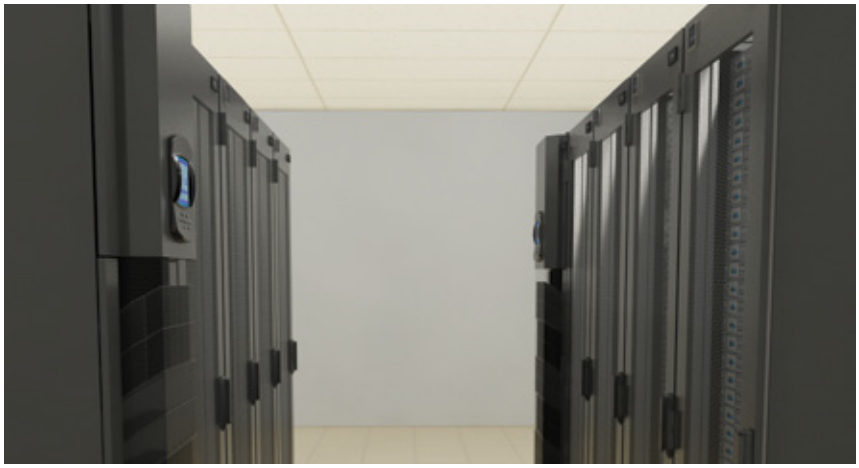
Intelligent, Integrated Infrastructure
for the Data Center

The SmartDesign from Emerson Network Power uses a perimeter/room-based approach to deliver efficiency, availability, capacity and control, that allows you to be prepared for what's next.

This Reference Summary, Tier 2 With Row-Based Cooling and Room-Based Power, provides one example of how a SmartDesign solution can be developed to solve the challenges presented in new and renovated facilities. Please refer to our website www.SmartSolutionsDesigns.com for more Scenario Reference Summaries.

*Customer Benefits:**

- Improve OPex by $67,000 per year
- Reduce 5 year TCO by over $196,000
- Achieve a PUE of 1.27
- Ensures maximum uptime for Tier 2 and avoids major outages that can cost $500K per event
- Improve infrastructure scalability
- Lower installation cost, improve control



SmartDesign Summary: Tier 2 With Row-Based Cooling and Room-Based Power

Current Capacity:	**180kW**
Tier:	**2**
Typical Racks:	**20-50**
This Design:	**30 racks**
Density Range:	**5-12kW/rack**
This Design:	**6kW/rack**
Floor:	**Non raised**
Containment:	**Currently None**

Overcome the challenges with the SmartDesign approach and be prepared for what's next:

- Reliable, flexible power and cooling solutions deliver efficiency, scalability and availability
- Effective monitoring, management and control
- Efficient space utilization. Expand future IT needs in existing space by adding simple containment.
- Improved PUE
- Lower TCO
- Flexible configurations

Current Technology Configuration:

- (6) Liebert CRV 35kW Row Based Cooling Units
- Liebert VFD 95F Condensers
- (30) DCF Optimized Racks
- (2) Liebert NX 200kVA UPS Systems, N+1 (perimeter placement)
- (1) Liebert FPC 225kVA PDU
- (30) Liebert MPH Rack PDU
- Liebert iCOM Controls, Liebert Nform

EMERSON™
Network Power

Technologies Configured to Improve Data Center Performance

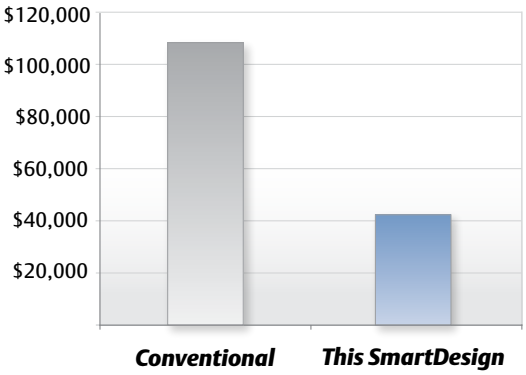
Technologies	Benefits
Liebert CRV 35kW Row-Based Air Cooled Units	Compact, innovative row-based cooling delivers excellent efficiency, control, reliability, serviceability and scability. Uses EC fans, directional airflow and digital scroll compressors.
Liebert iCOM	Easy to use, powerful cooling controls ensure optimum performance.
Liebert NX UPS 200kVA N+1	Excellent efficiency, true online design for high reliability and availability. Scalable. Parallel for capacity and/or redundancy. Design includes battery and panel cabinet.
Liebert FPC PDU	Rack based power isolation and distribution unit delivers electricity to the rows and racks of IT systems. Ensures flexibility. Reconfigure systems easily.
Liebert MPH Rack PDU	Inside the rack power flexibility includes monitoring and control. Flexible input: output settings. Zero U design.
DCF Optimized Racks from Emerson Network Power	Optimize a data center with these racks. Excellent airflow, cable management, flexibility.
Liebert Nform	Improve data center management control, availability and efficiency with this distributed monitoring system.

Performance (This Design vs. Base)

Benefits	Savings Over Base	Advantage Percent
Annual Energy Cost	$67,166	61%
5 Yr OPex	$335,830	61%
5 Yr TCO	$196,429	15%
PUE	Reduced from 1.70 to 1.27	

*Compared to standard cooling using 2 step variable capacity and 90% power technology efficiencies in Columbus, OH, for comparable tier design. TCO estimations includes operating costs plus equipment costs for cooling, power, racks, monitoring and installation.

Annual Energy Costs



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For more details on this or other SmartDesign solutions, please contact your local Emerson Network Power data center infrastructure specialist. Find them on the web or call 800.222.5877 (option 4).
See more scenario references at: www.SmartSolutionsDesigns.com.

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- Infrastructure Management & Monitoring
- Outside Plant
- Power Switching & Controls
- Precision Cooling
- Racks & Integrated Cabinets
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- Surge Protection

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