VERTIV™
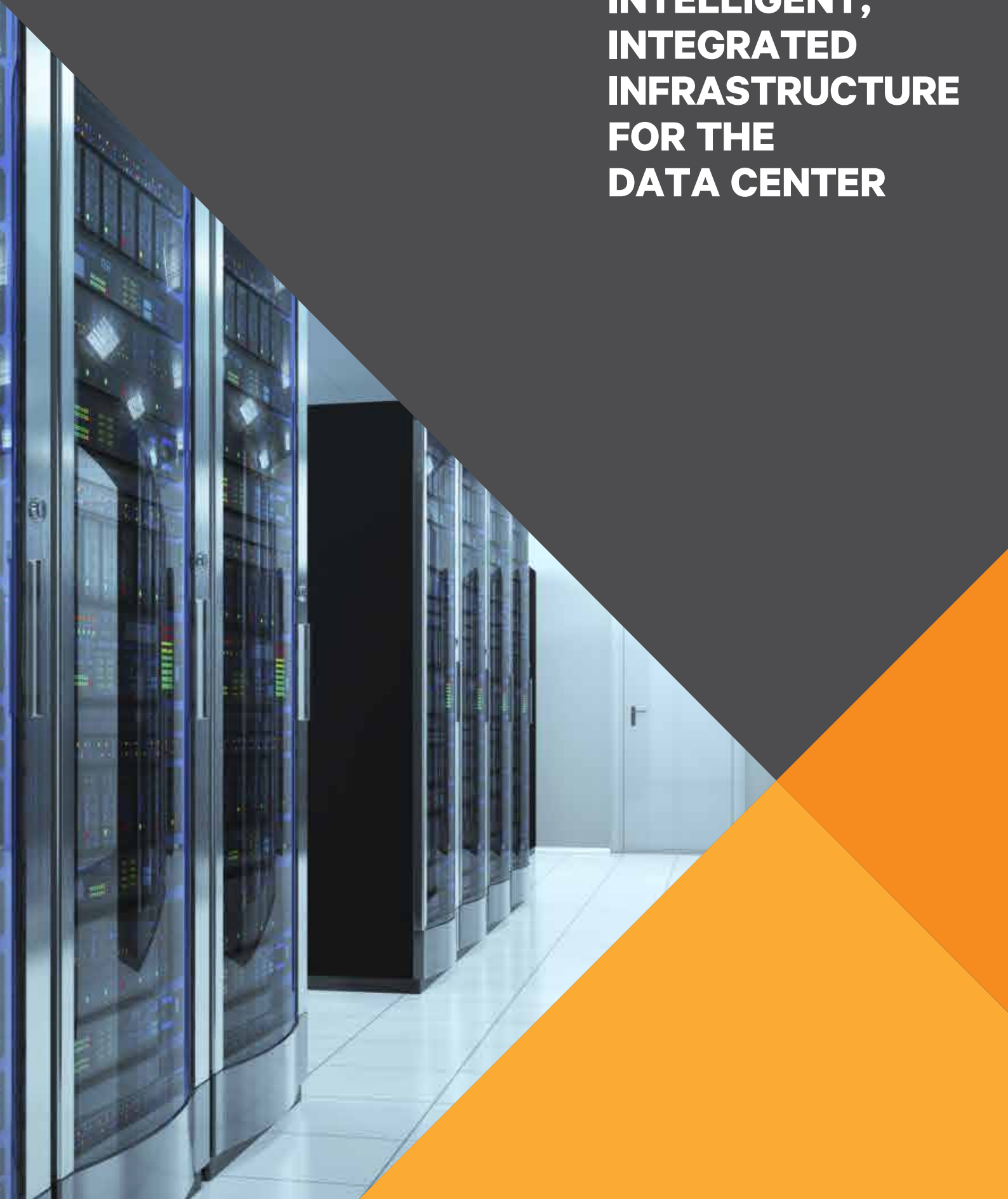
INTELLIGENT, INTEGRATED INFRASTRUCTURE FOR THE DATA CENTER

Enabling Tomorrow's

CRITICAL EDGE
INFRASTRUCTURE

We helped some of the largest names in the industry bring new capacity online faster and at a lower cost when search and social media increased demand for storage and computing.

We were the first to introduce an integrated enclosure system to distributed networks.

Our portfolio spans power, thermal and infrastructure management products, software and solutions.

Protecting your critical technologies takes more than just great software and equipment. It takes a level of experience that only comes from years of finding solutions when the industry needed them most. We were the first to protect mainframes with precision cooling systems.

And now as challenges and demands grow, we continue to find better ways to help you strengthen your most vital applications. Formerly the Network Power business of Emerson, we've brought together the most trusted and experienced names in critical infrastructure.

Complemented by a network of nearly 250 service centers worldwide. It's a combination of experience and resources that allow us to better adapt to what's needed, anticipate what's next and continue to find solutions in ways other companies simply can't.

VERTIV

Rapidly deploy and manage IT infrastructure in just weeks without building new data center space. Our Smart Solutions products help you meet your IT needs with significant savings. With simplified, standardized designs, you can start small and expand over time.

Efficiency. Capacity. Availability. Control.
You Need Them - Now You Can Have Them All.

To help you achieve efficiency in all aspects of your data center, Smart Solutions intelligent, integrated infrastructure for data centers. The family uses a global design approach that can be localized for specific geographies.

Smart Solutions offerings let you cost-effectively achieve and manage your objectives for efficiency, capacity and availability.

These offerings provide fast and easy implementation, through interoperable systems: precision cooling, UPS, power distribution/conditioning, management software and racks.

Each Smart Solution offering integrates industry best practices in data center design and operations including:

- Hot air and cold air separation
- Cold + Hot air containment
- High availability and high efficiency UPS
- High-efficiency precision cooling, Digital scroll compressor
- Space-savings, small-footprint
- Modularity for flexibility and easier expansion
- Integrated monitoring and control to optimize efficiency in planning and management
- Unique local service for design audits, configuration support, installation support, maintenance and repair

We brings together the industry's finest power, precision cooling, monitoring and management brands and businesses, including Liebert, Knurr, ASCO, Avocent, Chloride, Energy Systems and Surge Protection solutions.
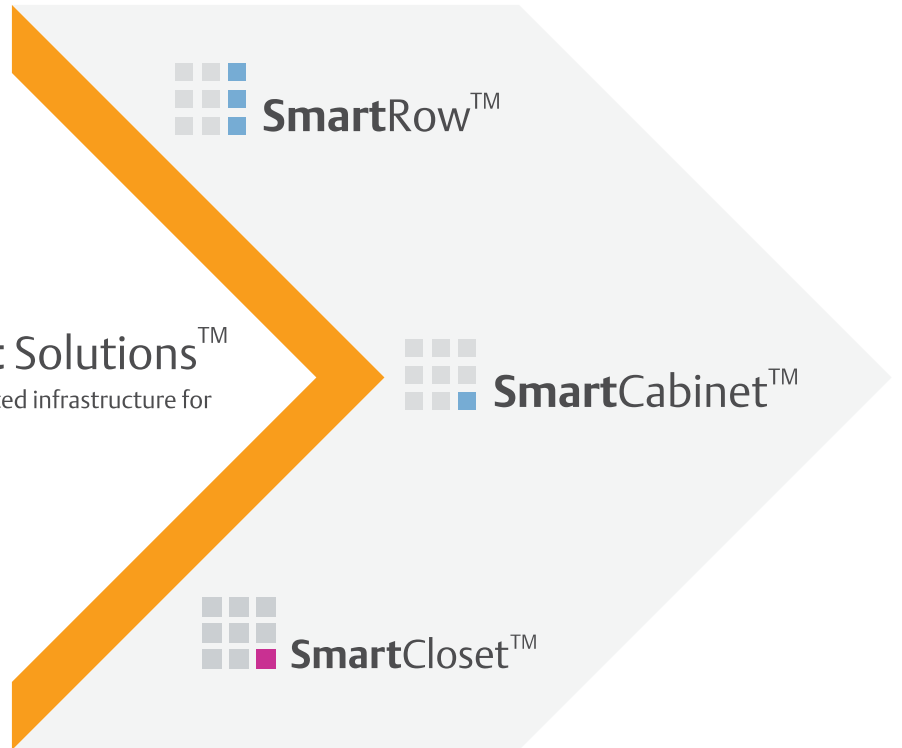
The Smart Solutions offerings deliver Efficiency Without Compromise™ within the data center.

The SmartSolutions approach gives you the efficiency, economy, interoperability and control to implement an infrastructure strategy that outperforms any you've ever seen.

The SmartSolutions™ family helps you cost-effectively achieve and manage higher levels of density, availability and efficiency.

Smart Solutions™
Intelligent, integrated infrastructure for the data center

SmartRow™

SmartCabinet™

SmartCloset™

EFFICIENT	ECONOMICAL	SIMPLIFIED	CONTROLLABLE
• **Reduce annual energy costs –up to 27%** through high-efficiency power, dedicated cooling and management technologies and containment	• **Reduce total time and cost of implementation** order, install and implement within just weeks	• **Simplify implementation** through an integrated design	• **Ensure efficiency and availability** with Liebert® iCOM™ controls — manage cooling to optimize IT equipment performance and life
• **Optimize space efficiency** through an integrated system	• **Save up to 28% on room upgrades** compared to upfitting a room as a conventional data center	• **Easily operate and manage** infrastructure systems through integrated controls	• **Enhance performance** and anticipate potential problems before they occur with infrastructure monitoring and management appliances and software
• **Reduce maintenance costs** with reliable design and efficient operation that minimizes wear and tear and requires less servicing		• **Ensure continuity** of business operations with single system startup, warranty, preventive maintenance and repair	• **Increase physical security** and equipment protection with lockable cabinets and access alerts
• **Increase IT efficiency** by streamlining and centralizing monitoring and management		• **Utilize industry-leading** service and support provided by local data center design experts	

Deploy a Data Center without Compromise

An Alternative to Traditional Design

Balancing data center objectives for capacity, space utilization, availability and efficiency is difficult without making sacrifices.

Failure to properly design and deploy physical infrastructure can lead to underutilized systems, stranded capacity and higher operating costs, preventing you from gaining the full advantage of your data center.

What IT and Data Center Managers want

Faced with these challenges, IT and data center managers increasingly want infrastructure strategies that are alternatives to conventional approaches. These new strategies must include solutions that:

- Improve energy efficiency, space utilization and IT productivity
- Offer measurable savings in CAPEX and OPEX
- Offer location flexibility and compatibility with existing infrastructure
- Improve the ability to manage and control the IT environment
- Feature interoperability for fast and easy design and implementation
- Support greater capacity by improving management of density and availability

These are advantages of the Smart Solutions family of infrastructure offerings from Vertiv

Discover the route to Efficient Data Center operations

Vertiv delivers Efficiency Without Compromise™ through the Smart Solutions infrastructure, to create savings across the data center and improve operation and management. These solutions provide a cost-effective power, precision cooling and management infrastructure to help you achieve your IT objectives regardless of data center size and complexity.

1

Management and Planning
- Streamline operations with comprehensive management controls
- Lower long-term operational costs with proactive maintenance programs

Design & Deployment
- Simplify configuration and implementation
- Reduce the time required for system design and deployment
- Reduce space and capital requirements

2

Operation
- Reduce energy costs with efficient technologies
- Decrease downtime costs through high availability configurations
- Increase productivity through greater efficiencies

3

![SmartRow™ logo]

Deploy a Fully Configured Data Center in Just Weeks.
Availability, Capacity, Efficiency.

The SmartRow™ infrastructure from Vertiv is a simplified, standardized and quickly deployable data center environment with significant CAPEX and OPEX savings over conventional designs. No other solution on the market provides such ease of deployment and integration. This complete data center infrastructure solution allows you to easily deploy and effectively manage an integrated IT infrastructure without being limited by building systems such as fire suppression and cooling.

SmartRow is available in two to eight -rack configurations for up to 40kVA. The solution allows the flexibility of starting small and expanding over time.

Vertiv has demonstrated up to 10% CAPEX savings over conventional designs and 27% OPEX savings. Here's how SmartRow infrastructure does it:

- Significantly reduces the cost of room upgrades or modifications
- Optimizes use of space
- Reduces cooling power usage through contained airflow, and high efficiency technologies
- Increases IT control and productivity
- Deploys in weeks, not months

Simple, fully integrated infrastructure – racks, dedicated cooling, management, fire suppression, cable management and power distribution are designed to work together, saving you time and money on installation and operation.

Capacity	: 10-40kVA
Rack	: 2-8 Racks
Floor	: Primarily non raised
Key Application	: Datacenter, Disaster recovery sites

What Makes the SmartRow™ Offering Unique?

Imagine the advantages of an intelligent, integrated infrastructure with all the capabilities you need to achieve your IT objectives.

The SmartRow infrastructure utilizes seven data center best practices and technologies to achieve a unique set of benefits.

1. Maximizes the return air temperature at the cooling units to improve capacity and efficiency

2. Matches cooling capacity with IT load

3. Utilizes cooling design that reduces energy consumption

4. Uses power management systems that optimize availability and efficiency

5. Features a design that enhances flexibility using scalable architectures that minimize footprint

6. Utilizes real-time infrastructure optimization to provision resources faster, increase efficiency and reduce stranded capacity

7. Leverages the availability of in-market data center design expertise and technical assistance

SmartRow™ Configuration

SPECIFICATIONS	SR-210	SR-210RC	SR-320	SR-320RC	SR-435*	SR-435RC*	SR-635*	SR-635RC*	SR 835*	SR 835 RC*
IT Capacity	10 KVA	10 KVA	20 KVA	20 KVA	35 KVA	35 KVA	35 KVA	35 KVA	35 Kva	35 Kva
No. of Racks	2	2	3	3	4	4	6	6	8	8
Cooling Redundancy	Thru Emergency Ventilation	Yes	Thru Emergency Ventilation	Yes	Thru Emergency Ventilation	Yes	Thru Emergency Ventilation	Yes	Thru Emergency Ventilation	Yes
Emergency Ventilation	Yes	NA	Yes	NA	Yes	NA	Yes	NA	Yes	NA
UPS Capacity	2 x 10 KVA	2 x 10 KVA	2 x 20 KVA	2 x 20 KVA	4 x 20 KVA	4 x 20 KVA	4 x 20 KVA	4 x 20 KVA	4 x 20 KVA	4 x 20 KVA
UPS Redundancy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Backup Time **	5 Mins each UPS	5 Mins each UPS	5 Mins each UPS	5 Mins each UPS	5 Mins each UPS	5 Mins each UPS	5 Mins each UPS	5 Mins each UPS	5 Mins each UPS	5 Mins each UPS
U Space available	68	68	99	99	117	117	199	199	283	283
Monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fire suppression and Access control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

* Option of water chilled cooling model also available
** Additional backup possible with external batteries
*** Also available additional accessories as optional - KVM, LCD Console, Intelligent Rack PDU, Camera with local surveillance

DIMENSIONS										
Width	2400	3000	3000	3600	3600	4200	4800	5500	6100	6800
Height	2450	2300	2450	2300	2450	2300	2450	2300	2450	2300
Depth	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800

Optimize Your Existing or New IT Environments

No other solution offers the industry's leading Power, Precision Cooling and Data Center Infrastructure Management Systems for such a wide array of applications and environments.
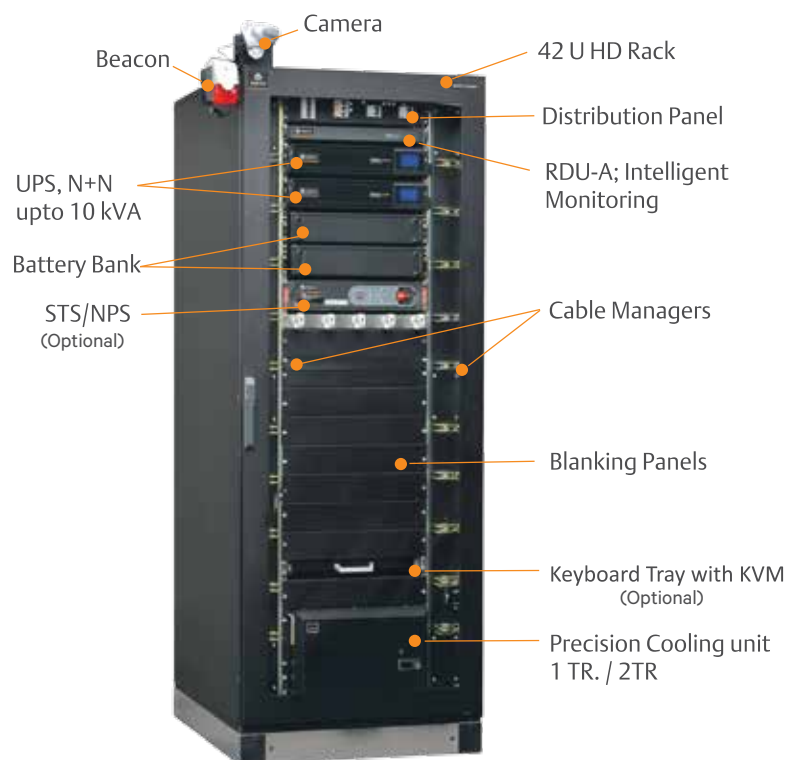

The SmartCabinet™ enables Enterprise Class IT Infrastructure through the provision of integrated enclosure, power, cooling and service. Critically it also enables the most vital element - namely 360° visibility of all system components.

This enables review, real time monitoring as well as insight into system performance going ahead so SmartCabinet customers can most effectively manage - and plan their IT Infrastructure. Continuous availability in turn rests on the power and cooling infrastructure that supports these systems and is comprised of the following:

- Power Quality
- Cooling
- Enclosure and Physical Infrastructure
- Monitoring and Management

Capacity	: 1–10kVA
Rack	: 1-2 Racks
Floor	: Primarily non raised
Key Application	: Server room and Small datacenters

Camera
Beacon
42 U HD Rack
Distribution Panel
RDU-A; Intelligent Monitoring
UPS, N+N upto 10 kVA
Battery Bank
Cable Managers
STS/NPS (Optional)
Blanking Panels
Keyboard Tray with KVM (Optional)
Precision Cooling unit 1 TR. / 2TR

Deploy a fully integrated 'Plug-n-Play' Data Center in just weeks.

SmartCabinet Configuration

SPECIFICATIONS	SC-13-AC	SC-26-AC	SC-210-AC	SC-210-AC DS	SC-210-RC	SC-210-RC DS
Capacity	3 KVA	6 KVA	10 KVA	10 KVA	10 KVA	10 KVA
No. of Racks	1	2	2	2	2	2
Cooling Redundancy	No	No	No	No	Yes	Yes
Cooling Capacity	3.5 KW	2X3.5 KW	7KW	7KW with DS	2X7KW	2X7KW with DS
UPS Capacity	2 X 3 KVA	2 x 6 KVA	2 x 10 KVA	2 x 10 KVA	2 x 10 KVA	2 x 10 KVA
UPS Redundancy	Yes	Yes	Yes	Yes	Yes	Yes
Backup Time	5 Mins each UPS	5 Mins each UPS	5 Mins each UPS	5 Mins each UPS	5 Mins each UPS	5 Mins each UPS
Fire Detection	Yes	Yes	Yes	Yes	Yes	Yes
Usable U Space	23	58	55	55	45	45

DIMENSIONS						
Width	800	1600	1600	1600	1600	1600
Height	2100	2100	2100	2100	2100	2100
Depth	1000	1000	1000	1000	1000	1000

Note: Battery backup & cooling unit capacity can be modified as per requirement. U space available is subjected to change as per configuration.
*Also available additional accessories as optional - KVM, LCD Console, Intelligent Rack PDU, Camera with local surveillance, Access control and Fire suppression

Local Expertise
Our network of local data center design experts have decades of experience building strong, infrastructures for IT environments of all sizes and types. These experts will work with you to identify and implement the exact solution for your needs. And they can throughly assess your IT environment to address your power, cooling and management challenges.
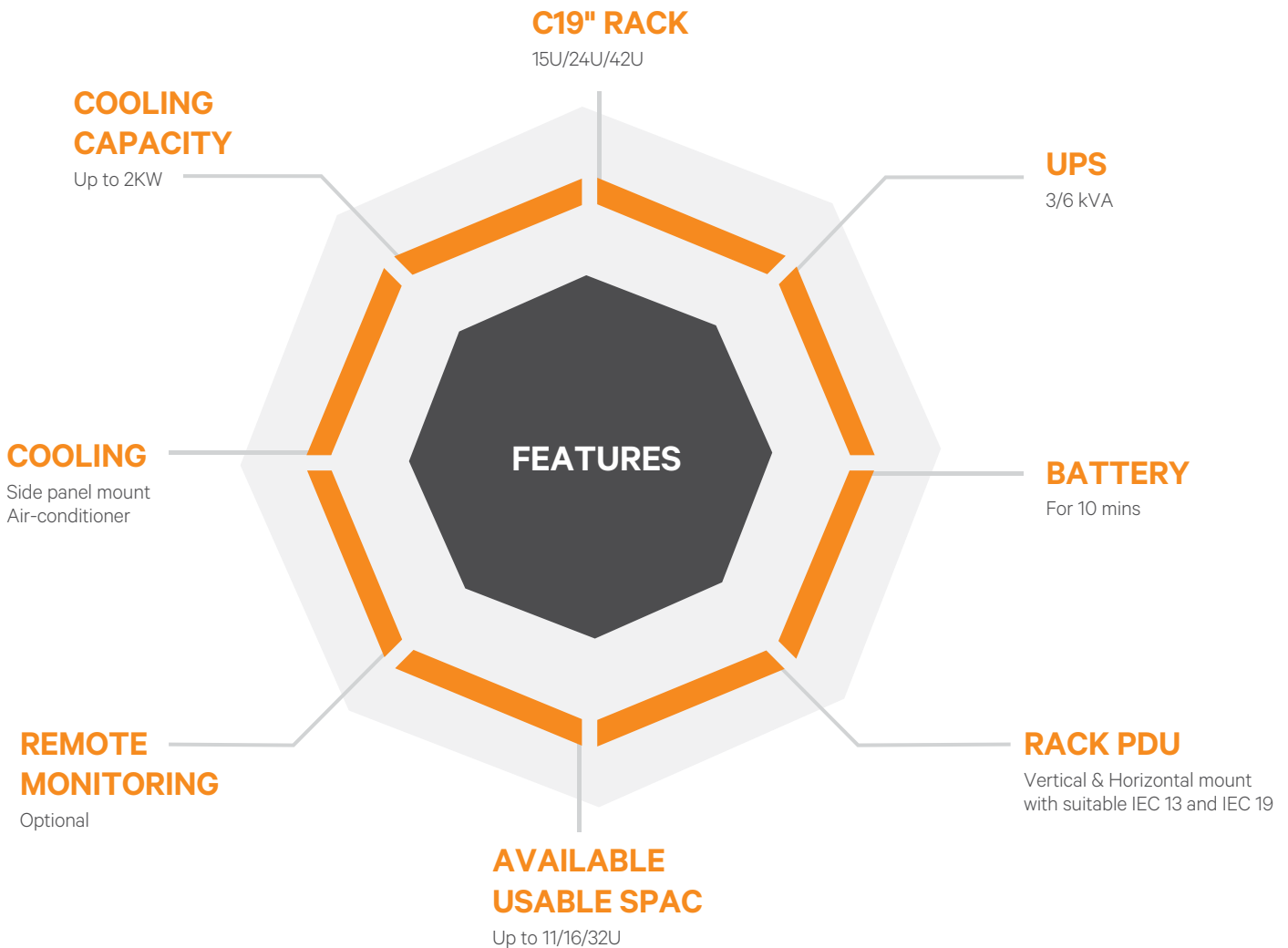
Industry-Leading Services
Our globally - renowned service and support organization is the largest in the industry - twice the size of our next largest competitor. Liebert Services can provide service capability for your entire facility infrastructure: from AC and DC power and battery system service solutions to environmental services, for all Vertiv brands and businesses.

SmartCloset™ is the new standalone self-contained rack from Vertiv, along with inbuilt power and cooling. It facilitates the housing and trouble-free installation of active IT equipment like switches, routers and so on - for which, an open environment is not conducive for healthy performance.

SmartCloset™ is suitable for any location like factories, warehouses, branch offices and retail stores where ambient conditions and temperatures are not in control; and also where dust and dirt are common.

C19" RACK
15U/24U/42U

COOLING CAPACITY
Up to 2KW

UPS
3/6 kVA

COOLING
Side panel mount
Air-conditioner

FEATURES

BATTERY
For 10 mins

REMOTE MONITORING
Optional

RACK PDU
Vertical & Horizontal mount with suitable IEC 13 and IEC 19

AVAILABLE USABLE SPAC
Up to 11/16/32U

Compact and powerful with inbuilt power and cooling.

FEATURES AND BENEFITS

- **Dedicated Rack mount cooling -** The air conditioner capacity is designed considering only rack equipment load and rack volume, thus saving on both capital and operating costs.

- **Rack mount UPS and Battery -** A single rack for housing both power and active equipment offers lesser footprint and saves on critical space area.

- **High sensible cooling and 24x 7 application -** As IT equipment is designed to run 24x7 and typically dissipate sensible heat load, Smart Closet is exclusively designed for such applications to deliver maximum efficiency.

- **Cooling unit with safety features -** The air conditioner comes with HP/LP switch and Under/Over voltage protection for sites at remote locations and with high voltage fluctuations.

- **Rack Monitoring -** (Optional feature) Rack environment monitoring like temperature, humidity, door sensor, smoke sensor, etc.

SmartCloset Configuration

Specification	SCL -15 P* #**	SCL - 24 P* # *	SCL - 42 P* #**
Rack Height	15U	24U	42UP-
UPS Capacity (P)*	NA External	3/6 kVA	
BatteryMin	NA External	10 mins	
Usable U space	11	16	32
Cooling Capacity # (Watts) * *	500	500 / 1000	500 / 1000 / 2000

While ordering

#	X	Y	Z
	500	1000	2000

Order sample
SCL 15 1 X, SCL 24 3 Y......

VERTIV™