

Go Smart.

Give your critical IT Infrastructure a Smart Edge.



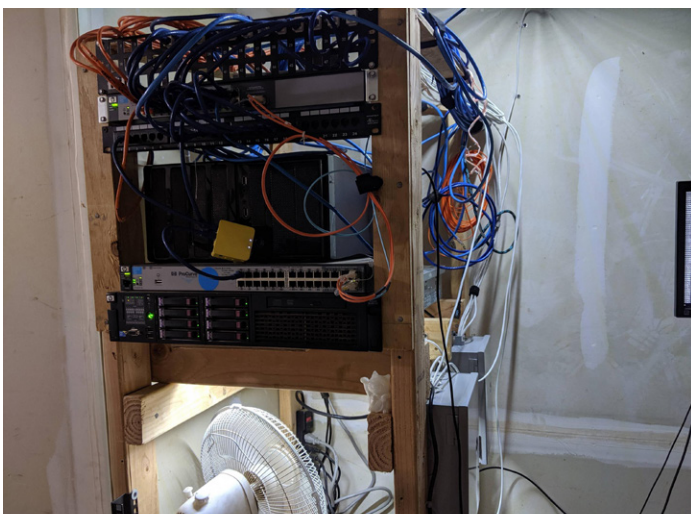
Authors : -

As Cloud Computing revolutionizes the IT world, it becomes highly critical for organizations like data center service providers to revamp their traditional infrastructure. When the need of the hour is optimal performance, easy deployment and scalability, economy and eco-friendliness...the solution is to think smart and be innovative. Think Vertiv Go Smart Solutions.

Conventional Data Center set ups do have their drawbacks like:

- Non compliance issues due to lack of skilled local suppliers
- Low awareness of latest technology products, services and solution providers
- Limited in-house resources to design, source and implement modern Data Centers
- Limited space and budget issues

CONVENTIONAL APPROACH



- Compromising on side panels to circulating airflow for cooling
- Lack of Cable Management
- Waste of vertical space

GO SMART APPROACH



- Adjacent Cooling unite with Intelligent System
- Cable Management with Single Pan monitoring/Display
- Saves more foot sapce. Saves money.

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REVAMP EXISTING SETUP

No need to scrap your existing set up, revamp with Vertiv GoSmart

BETTER PROFIT MARGINS

ROI within 18 months max -
Make your IT Profit centre from Cost centre

REDUCE PUE

It can help you to reduce PUE from >2.5 to 1.6 level

MONITORING

- RDU as an aggregator with single pan monitoring/display
- Intelligent Monitoring of UPS, Cooling & IPDUs
- SmartRow Environmental Monitoring

NO EXTRA DOWNTIME

No need to scrap your existing set up, revamp with Vertiv GoSmart

RACKS

- Closed Cold and Hot aisle Containment
- Dust and Sound Protected
- False flooring not required

COOLING

- Intelligent system - communicate with centralised unit, with alerts, log details
- Digital Scroll Variable Capacity Cooling
- Team Mode / Sequencing N+N mode
- Fan speed variation indoor & Outdoor

THE
ADVANTAGES
OF GO SMART



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GO SMART SALIENT FEATURES

ECONOMICAL

- Save up to 28% on room upgrade
Compare to upfitting a room as a conventional data center

EFFICIENT

- Reduce annual energy costs –up to 27% through high-efficiency power, dedicated cooling and management technologies and containment
- Optimize space efficiency through an integrated system
- Reduce maintenance costs with reliable design and efficient operation that minimizes wear and tear and requires less servicing
- Increases IT efficiency by streamlining and centralizing monitoring and management

SIMPLIFIED

- Simplify implementation through an integrated design
- Easily operate and manage infrastructure systems through integrated controls
- Ensure continuity of business operations with single system startup, warranty, preventive maintenance and repair
- Utilize industry-leading service and support provided by local data center design experts

CONTROLLABLE

- Ensure efficiency and availability with Liebert® iCOM™ controls — manage cooling to optimize IT equipment performance and life
- Enhance performance and anticipate potential problems before they occur with infrastructure monitoring and management appliances and software
- Increase physical security and equipment protection with lockable cabinets and access alerts

SECURITY

- Access Control Biometric Based Access control system to restricted authorised users to keep your IT physically protected
- Fire Suppression System Autodetected Fire suppression system to keep your IT protected in case your set up catches fire
- CCTV surveillances to keep your IT under regular surveillances

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COMPARISON CONVENTIONAL VS GOSMART

| RACKS | GO SMART | CONVENTIONAL |
|--------------------------|---|--|
| Cooling Containment | Closed Cold and Hot aisle Containment for better efficiencies | Racks are perforated and no such cold or hot aisle containment |
| Dust and Sound Protected | Ensures sound and Dust protected operations | Perforated & no gasketing, no sound and Dust protection |
| False flooring | Not required, reduces room preparation work | Required to reduce room volume and hide cables and copper piping |

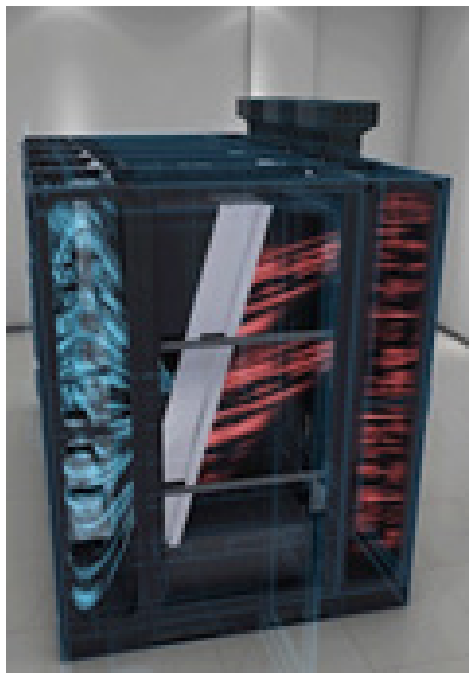


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| COOLING | SMARTROW | CONVENTIONAL |
|--------------------------------------|--|---|
| Intelligent system | Controller can communicate with centralised unit, with alerts, log details | No such centralised communication on cooling performance |
| Variable Capacity | Digital Scroll Variable Capacity Cooling | Fixed Capacity Cooling |
| Operation Mode | Team Mode / Sequencing N+N mode | No such Team mode |
| Cooling Containment | Closed Cold and Hot aisle Containment for better efficiencies | Racks are perforated and no such cold or hot aisle containment |
| Cooling unit location | Adjacent to Rack in standalone unit | No fixed location, many times on rack top - could result in water leakages and rack rear - no effective cooling |
| Fan speed variation indoor & Outdoor | Supported to modulate cooling capacity as per load and ambient conditions | Not possible to modulate such capacity |



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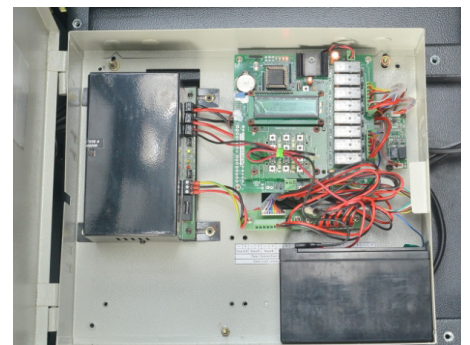


COMPARISON CONVENTIONAL VS GOSMART

| FIRE SUPPRESSION | SMARTROW | CONVENTIONAL |
|---------------------------|---|------------------------------------|
| Type of Suppression | Active / Automated / Cross zoning | Passive / Requires human intervene |
| Type of Protection | More secure, Complete flooding to entire volume | Limited to fire source / point |
| Compatible with IT device | Compatible | Not compatible |



| ACCESS CONTROL | SMARTROW | CONVENTIONAL |
|--------------------|--|--------------------------------|
| Location | Each rack level, gives additional protection | Room level, limited protection |
| Type | Biometric | Card Reader |
| Depend on facility | Independ with separate back up | Depend on facility power |



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MONITORING BENEFITS OF GOSMART

RDU As an Aggregator with Single Pan monitoring/Display

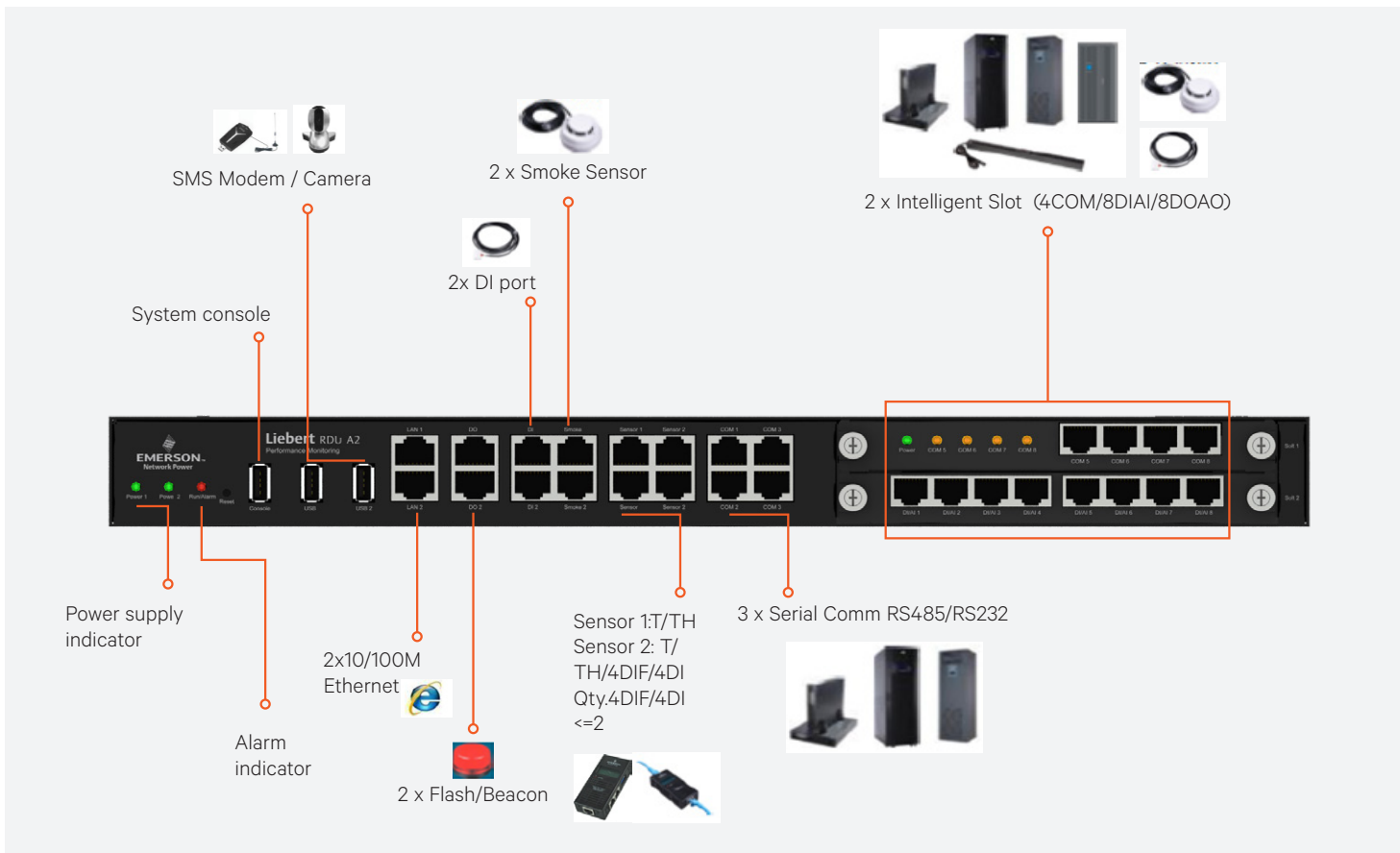
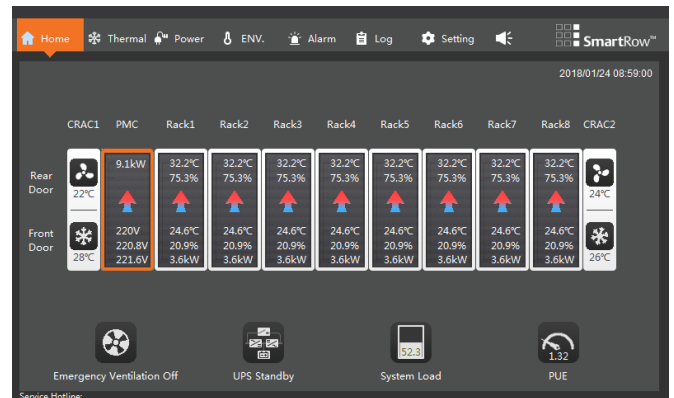
- Containment modules that expand the rack enclosure to manage the system airflow
- Separate the IT equipment from the ambient air in the

Intelligent Monitoring of UPS, Cooling & IPDUs (Optional)

- UPS – SNMP
- Cooling - SNMP
- IPDUs – Mention max qtyts

SmartRow Environmental Monitoring

- TH Sensors
- Smoke
- WLD
- Door
- Mention max possible qtyts



Deploy a Fully Configured Data Center in Just Weeks.

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 in the market provides such ease of deployment and integration.

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

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

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



SmartRow™ Configuration

| SPECIFICATIONS | SR-210 | SR-210RC | SR-320 | SR-320RC | SR-435* | a435RC* | SR-635* | SR-635 RC* | 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 |

DIMENSIONS

| | | | | | | | | | | |
|--------|------|------|------|------|-------|------|------|------|------|------|
| Width | 2400 | 3000 | 3000 | 3600 | 3600 | 4200 | 4800 | 5500 | 6100 | 6800 |
| Height | 2450 | 2300 | 2450 | 2300 | W2450 | 2300 | 2450 | 2300 | 2450 | 2300 |
| Depth | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |

* Option of water chilled cooling model also available

** AdditionWal backup possible with external batteries

*** Also available additional accessories as optional - KVM, LCD Console, Intelligent Rack PDU, Camera with local surveillance

Optimize Your Existing or New IT Environments

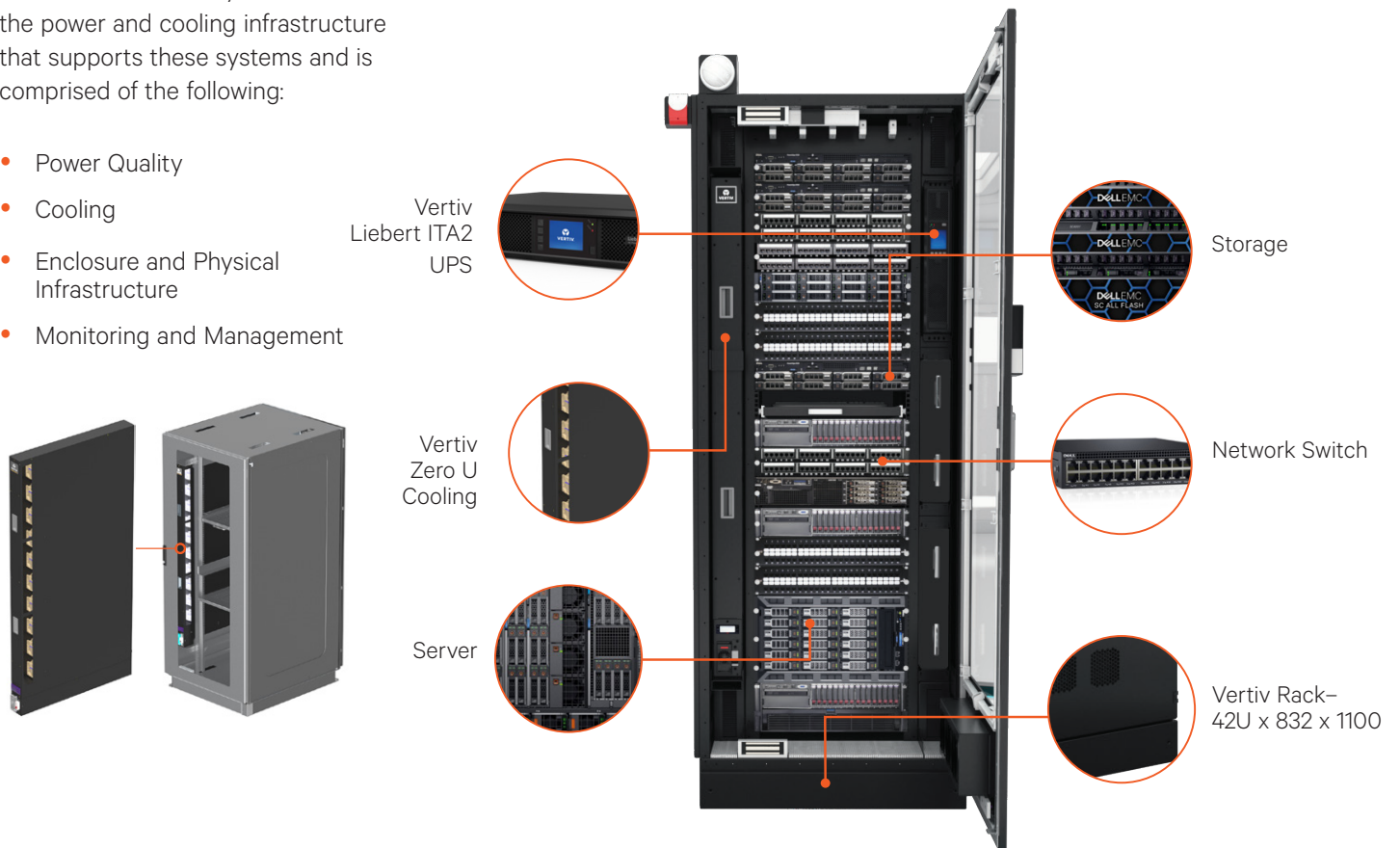
The SmartCabinet™ - Premium empowers Enterprise Class IT Infrastructure through the provision of integrated enclosure, power, cooling and service. The biggest advantage is its Zero U space for non-core IT assets. Critically it also allows the most vital element - namely 360° visibility of all system components.

Customers can effectively manage and plan their IT Infrastructure with real time monitoring and insight into system performance.

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 | : Upto 20kVA |
| Rack | : 1-3 Racks |
| Floor | : Primarily non raised |
| Key Application | : Server room and Small datacenters |



SmartCabinet™ - Premium Configuration

| Specifications | SCP-1-7-U6 N | SCP-1-7RC-U6 2N | SCP-2-7RC-U10 2N | SCP-3-14RC-U20 2N |
|--------------------|-----------------|-----------------|------------------|-------------------|
| Capacity | 6 kVA | 6 kVA | 10 kVA | 20 kVA |
| No.of Racks | 1 | 1 | 2 | 3 |
| Cooling Redundancy | N | N + N | N + N | N+1 |
| Cooling Capacity | 7KW | 7KW | 7KW | 14 kW |
| UPS Capacity | 6 KVA | 2 X 6 KVA | 2 X 10 KVA | 2 x 20 kVA |
| UPS Redundancy | N | N + N | N + N | N + N |
| Backup Time | 10 Mins on each | 5 Mins on each | 5 Mins on each | 5 mins on each |
| Usable U Space | 42 | 35 | 84 | 120 |

Dimensions

| | | | | |
|--------|------|------|------|------|
| Width | 832 | 832 | 1632 | 2432 |
| Depth | 1100 | 1100 | 1100 | 1100 |
| Height | 2100 | 2100 | 2100 | 2100 |

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, ATS/LTS, Camera with local surveillance, Access control and Fire suppression

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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

UPS, N+N upto 10 kVA

Battery Bank

STS/NPS (Optional)

Precision Cooling unit 1TR. / 2TR



42 U HD Rack

Distribution Panel

RDU-A; Intelligent Monitoring

Cable Managers

Blanking Panels

Keyboard Tray with KVM (Optional)

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

| Dimensions | SC-13-AC | SC-26-AC | SC-210-AC | SC-210-AC DS | SC-210-RC | SC-210-RC DS |
|------------|----------|----------|-----------|--------------|-----------|--------------|
| 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

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