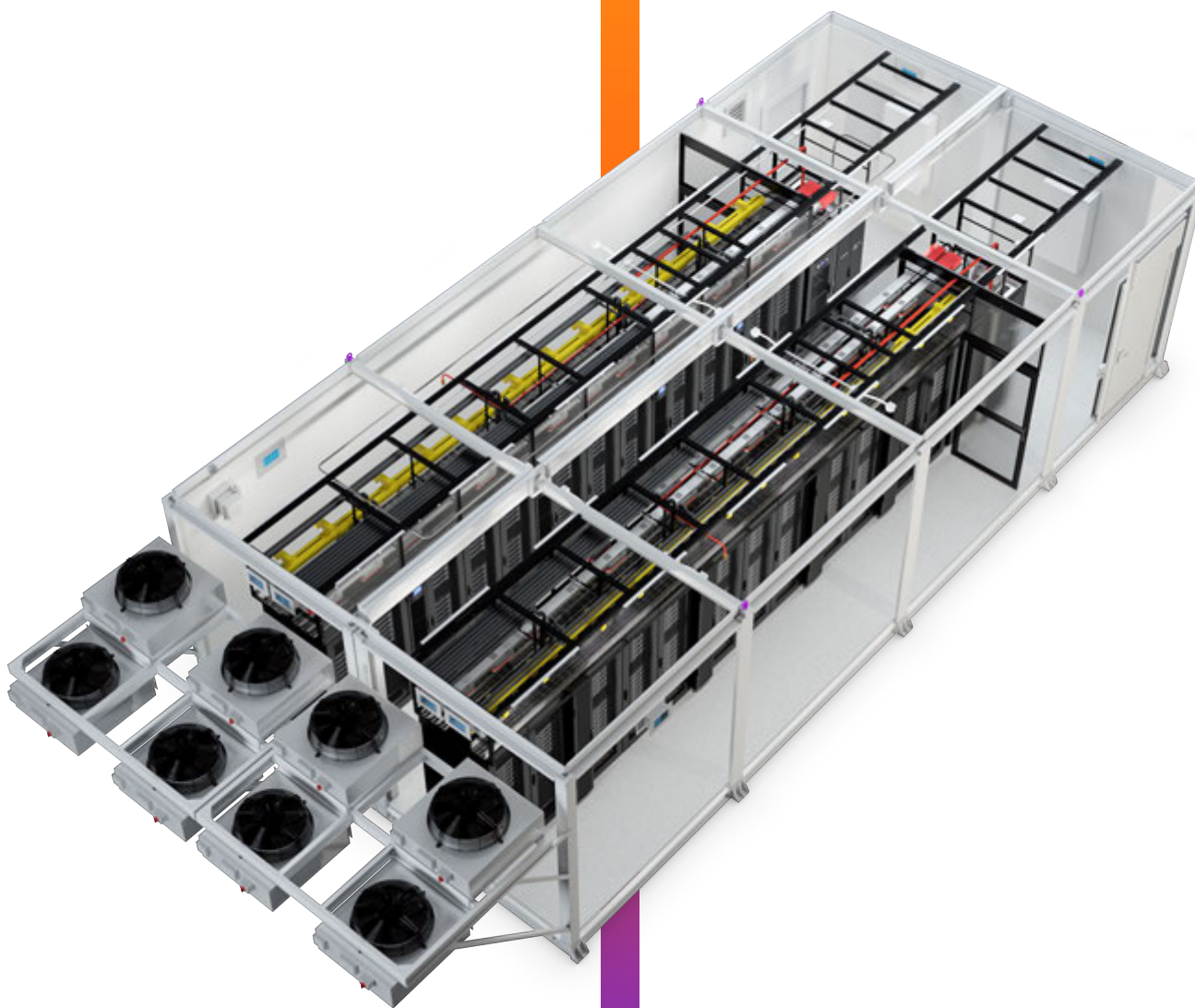# ΛLEXANDER SCHNEIDER

THE POWER OF EXCELLENCE

VERTIV™

Vertiv™ SmartMod™ MAX

Simple and configurable infrastructure solutions for your critical IT needs

Imagine the advantages of a rapidly deployable, standalone data center with all the capabilities to achieve your critical IT needs.

Exterior view of Vertiv SmartMod MAX

Vertiv SmartMod MAX is a simple, configurable system that extends the capability of the SmartMod platform to larger deployments. For IT deployments up to 180kW and 26 IT racks (600 mm wide), SmartMod MAX offers a simple way to install capacity in a fraction of the time a typical IT build might take.

With integrated, pre-engineered, and pre-fabricated infrastructure, you can rapidly achieve your objectives, and you don't have to blow the budget or overbuild based on uncertain future needs. Right-sized systems designed to work together and optimized for constructability allow you to build just what you need today, better aligning your capital plans to your business challenges and simplifying the process of getting business critical systems up and running.

The modules are shipped in two prefabricated sections, then connected and sealed at your site by experienced Vertiv personnel to create a contiguous space, just like a traditional data center. Configured with two rows of racks, the system uses aisle containment to ensure optimal performance and efficiency of thermal management systems.
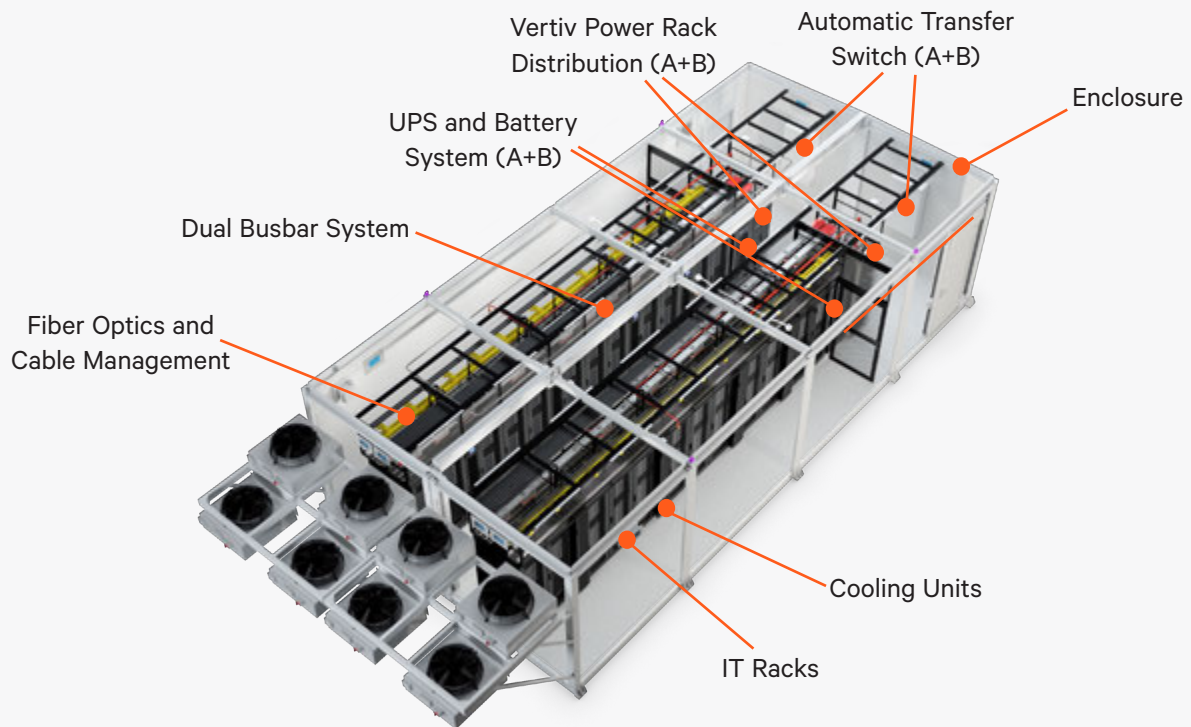
SmartMod MAX leverages core Vertiv™ Critical Power, Thermal Management, and Monitoring & Control Technologies.
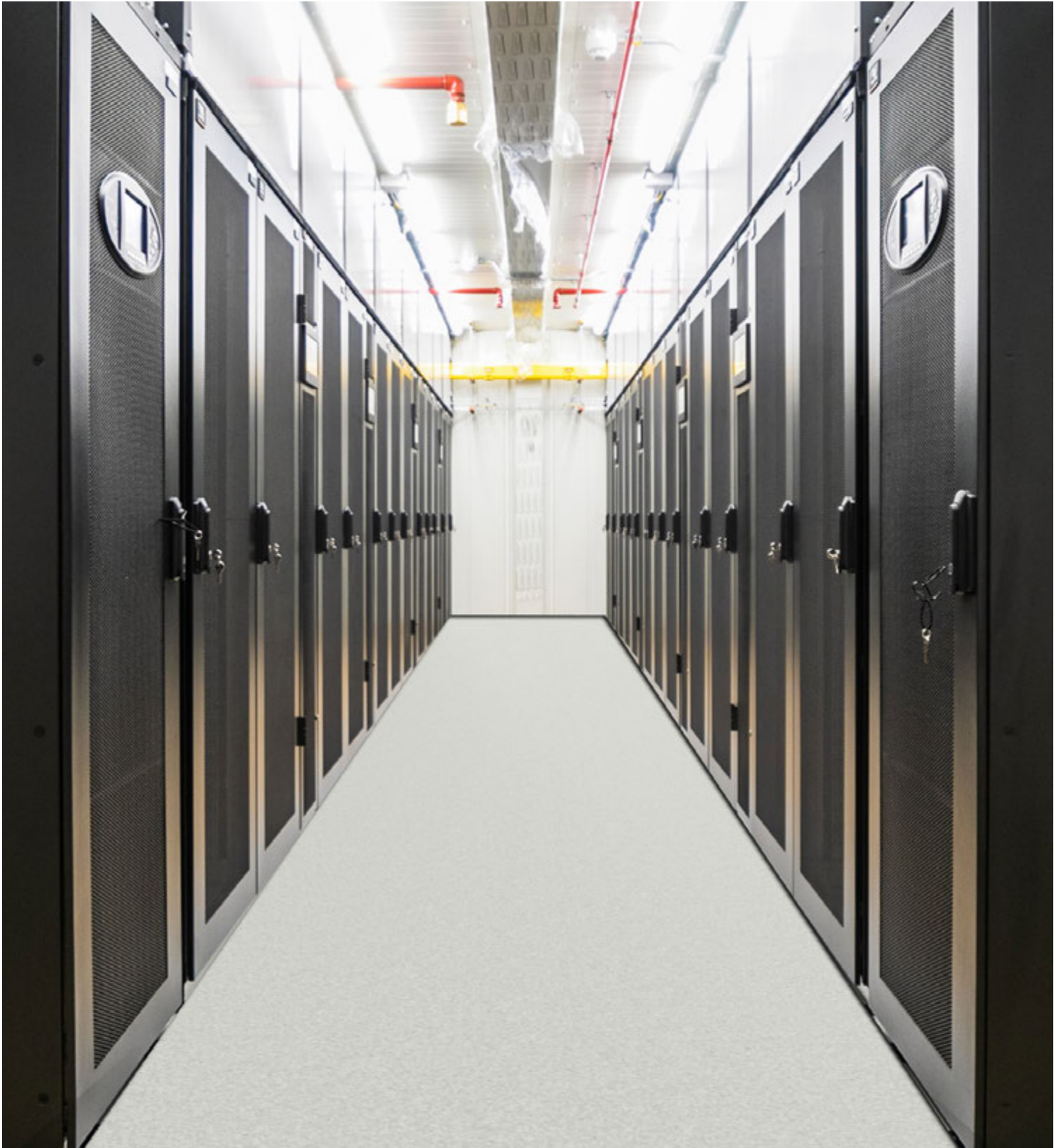
SmartMod MAX incorporates:

- Liebert® UPS power protection options based on your needs - using either the modular and scalable Liebert APM, or the space-saving Liebert EXL S1

- Close-coupled in-row Liebert CRV thermal management units with intelligent iCOM controls

- Classic and cost-effective Vertiv racks

- Vertiv rack PDU's

- Thermal containment to isolate hot aisle and cold aisle airflows for optimum thermal performance

- Automatic Transfer Switch (ATS) to reliably select normal or emergency power sources

- Clean agent fire suppression and aspiration smoke detection

- Overhead infrastructure, including piping, electrical distribution, and fiber ducts

All subsystems are factory installed into a secure, weatherproof and transportable enclosure – simplifying and drastically shortening on site time required to install and startup, and reducing the potential for risk, quality, or schedule delays. Configuration options are available to provide desired redundancy (N, N+1, 2N) and battery runtime. In addition, when deploying multiple units or at multiple locations, having a common look and feel, layout, and equipment kit simplifies maintenance and operations activities. Vertiv backs it all up with the proven service and support network.

Component Overview of SmartMod MAX

Vertiv Power Rack Distribution (A+B)

Automatic Transfer Switch (A+B)

Enclosure

UPS and Battery System (A+B)

Dual Busbar System

Fiber Optics and Cable Management

Cooling Units

IT Racks

Enclosure cut-out view of SmartMod MAX

Interior view of SmartMod MAX

SmartMod MAX Technical Specifications

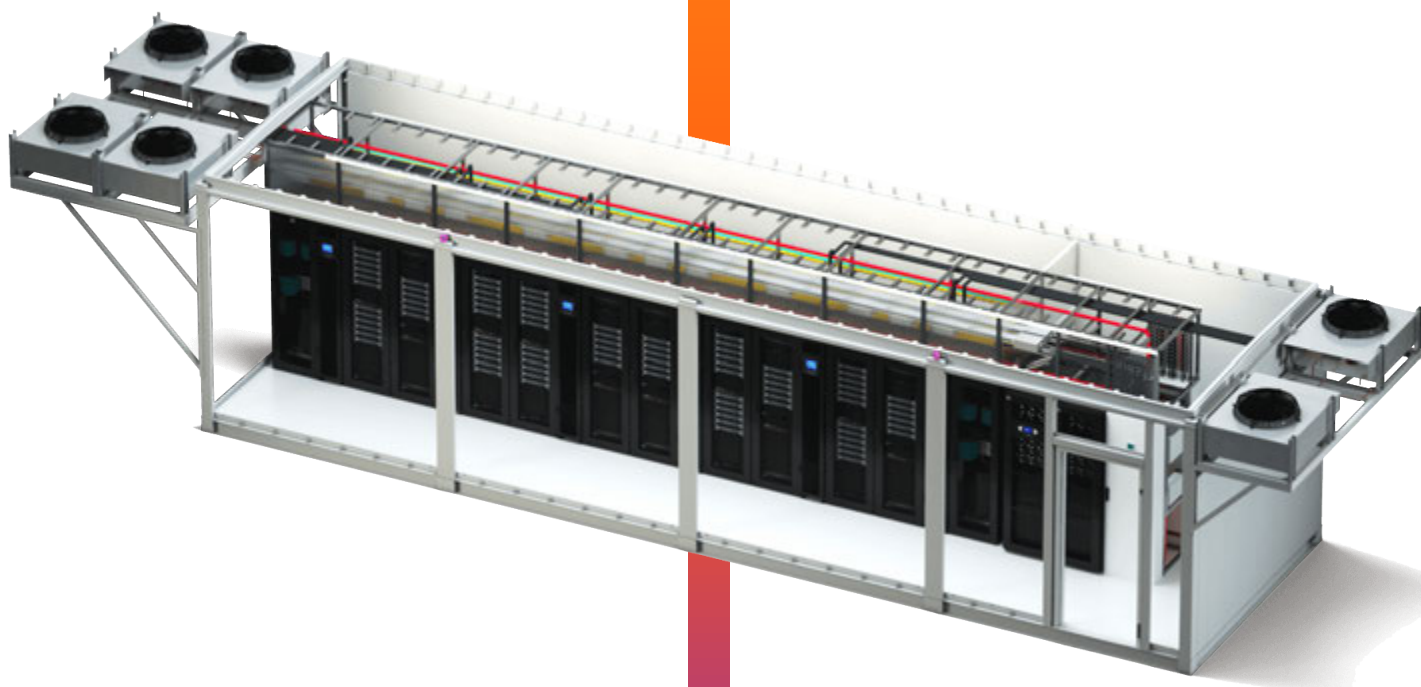| REFERENCE DESIGN	ESXDE-228AC021-000	ESXDE-27CAC021-000	ESXDE-32CAC022-000	ESXDE-37GAG022-000	ESXDE-40IAH022-000	ESXDE-40RA6021-000
Enclosure External Dimensions						
Enclosure Length (mm)	6426	8010	9594	11178	11970	11970
Single Enclosure Width (mm)	2900	2900	2900	2900	2900	2900
Enclosure Width (mm)	5810	5810	5810	5810	5810	5810
Enclosure Height	3330	3330	3330	3330	3330	3330
Max Module Overall Length (mm)	9024	10608	13674	15258	16050	14568
Weight	2x10000kg	2x12000kg	2x14000kg	2x16000kg	2x18000kg	2x17500kg
Input AC Parameters						
Region	EMEA					
Voltage/Frequency	400VAC, 50Hz					
IT Racks						
Rack Height	42U (2000mm)					
Rack Depth	1100mm					
600mm Wide Racks	8	12	12	16	18	26
Rack Load	8kN					
Electrical						
Electrical Distribution Board	2					
Automatic Transfer Switch	1	1	2	2	2	1
UPS Cabinet	2					
UPS Module Redundancy	N+1	N+1	2N	2N	2N	N+1
UPS Rating	120kVA - 2x(60kVA + 30kVA)	120kVA - 2x(60kVA + 30kVA)	160kVA	160kVA	200kVA	120kVA - 2x(60kVA + 30kVA)
Battery Backup Time	10min @ 100kW IT Load	10min @ 100kW IT Load	12min @ 140kW IT Load	12min @ 140kW IT Load	7min @ 180kW IT Load	10min @ 100kW IT Load
Busbar System	Two per row					
Maximum Rack Load	15kW	15kW	15kW	15kW	15kW	9kW
PDU	2 per rack					
PDU Capacity (max)	3x32A @ 230/400V-3ph	3x32A @ 230/400V-3ph	3x32A @ 230/400V-3ph	3x32A @ 230/400V-3ph	3x32A @ 230/400V-3ph	3x16A @ 230/400V-3ph
PDU Type	monitored					
Mechanical						
Air Conditioning Type	In-row, direct eXpansion					
Air Conditioning Redundancy	N+1					
Air Conditioning Units	8	8	10	10	12	8
Cooling Capacity for IT Load (35°C)	110kW	110kW	145kW	145kW	180kW	110kW
Exterior Ambient Operating Range	-20°C to +45°C					
Fire Detection and Suppression						
Very Early Smoke Detection System	Optional					
Fire Detection System	Conventional					
Fire Suppression System	NOVEC 1230					
Cable Trays						
LAN Cable Trays	200mm wide mesh					
Fiber Optic Tray	4" x 4"					
Spill-over Exit	Single per IT rack					
Lighting						
Lighting Element	LED					
Lighting Illumination	300 lux at floor level					
Emergency Lighting	1 lux at floor level, 1h backup					

These SmartMod MAX configurations depict different scenarios available within the SmartMod platform. Multiple flexible options in terms of different module dimensions, electrical topologies as well as rack dimensions, maximum number of racks and rack densities enable the end-user to configure optimal solutions based on the required application.

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VERTIV™

Vertiv™ SmartMod™

Modular Data Center
Infrastructure

Imagine the advantages of a rapidly deployable, standalone data center with all the capabilities you need to achieve your IT objectives.

Cutaway illustration of Vertiv SmartMod

Building a new data center in a short timeframe is nearly impossible. The Vertiv™ SmartMod™ provides enhanced levels of availability, efficiency, and control in self-contained enclosures that can be deployed securely, virtually anywhere. For IT deployments between two and 12 racks with 90kW or less, SmartMod offers a simple way to install capacity in a fraction of the time.

You don't have to blow the budget, or overbuild based on uncertain future needs – with right-sized systems designed to work together and optimized for constructability; you can build just what you need today, better aligning your capital plans to your business challenges.

SmartMod leverages core Vertiv Critical Power, Thermal Management, and Monitoring & Control technologies.

SmartMod incorporates:

- Modular and scalable Vertiv™ Liebert® UPS power protection

- Close-coupled in-row Liebert CRV thermal management units with intelligent iCOM controls

- Classic and cost-effective Knürr® racks

- Vertiv rack PDUs

- Thermal containment to isolate hot aisle and cold aisle airflows for optimum thermal performance

- Automatic Transfer Switch (ATS) to reliably select normal or emergency power sources

- Clean agent fire suppression with VESDA early smoke detection

- Overhead infrastructure, including piping, electrical distribution, and fiber ducts

All subsystems are factory installed into a secure, weatherproof and transportable enclosure – simplifying and drastically shortening the on-site time required to install and startup, and reducing the potential for risk, quality, or schedule delays.

Configuration options are available to provide desired redundancy (N, N+1, 2N) and battery runtime. When deploying multiple units or at numerous locations, having a standard look and feel, layout and equipment kit simplify maintenance and operations activities. Vertiv backs it all up with the service and support network you have come to expect from us.

Tier III-Ready SmartMod

For customers interested in Tier-certification, save time and streamline the process with Vertiv's Tier III-Ready SmartMod. Technical specifications are available on page 5.
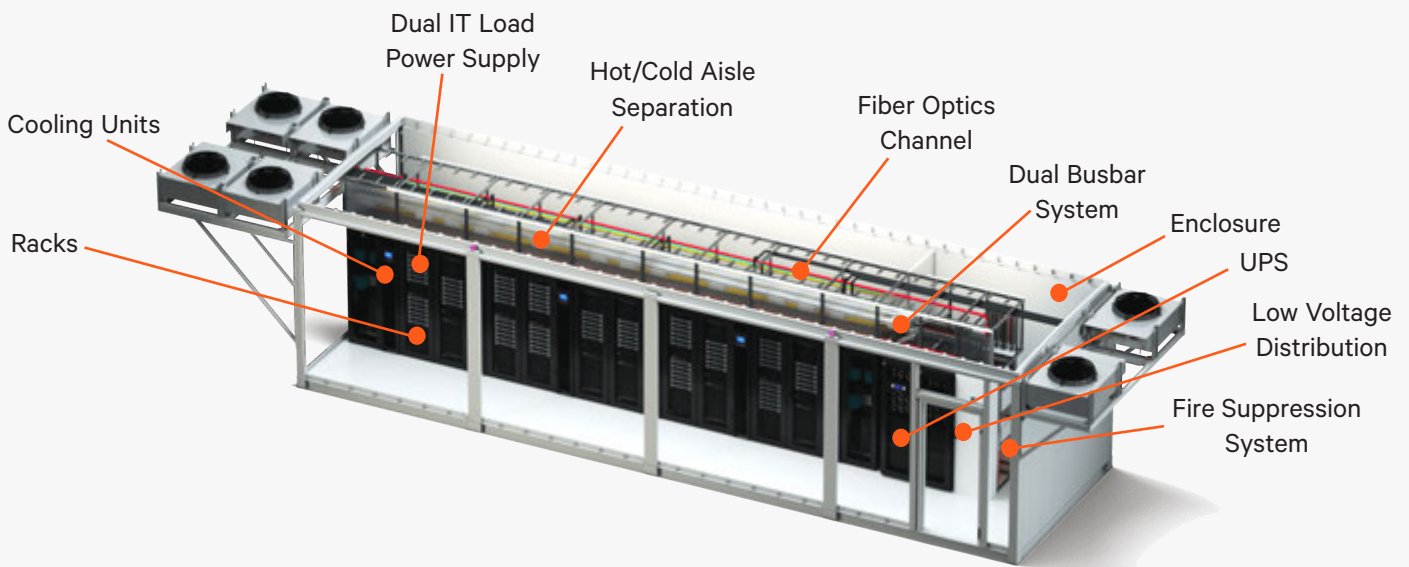
TIER-Ready III
Uptime Institute®

Manufacturer: Vertiv Corporation
Model: SmartMod Model: ESMDE-40AA9023-000
Design: SYSNAR-ESMDE-40AA9023-000-R1

Issued July 2019

SmartMod Selection Grid

UPS	N+1 (Internal)						2N	
Max IT Capacity (kW)	40		60		85		85	
Rack Width	600mm	800mm	600mm	800mm	600mm	800mm	600mm	800mm
2								
3		224A6010						
4	224A6010							
5			276A6011					
6			276A6011					
7			327A6011					
8								
9					379A9011			
10	40DA6011						40AA9023	
11								
12								
13 RACKS	40DA6011							

TIER-Ready III

- Cells that contain exact reference design names reflect optimized parameters for that Solution
- The reference design may still be valid with minor modifications for design parameters within the colored extended range
- Other configuration changes may be possible (varying rack counts/dimensions, longer battery runtimes, etc.) – check with your Solutions Architects for details and support

Component Overview of SmartMod

Cooling Units
Racks
Dual IT Load Power Supply
Hot/Cold Aisle Separation
Fiber Optics Channel
Dual Busbar System
Enclosure
UPS
Low Voltage Distribution
Fire Suppression System

Interior view of SmartMod

www.schneider.co.il | info@schneider.co.il | +972-9-892-4444

SmartMod Specifications

REFERENCE DESIGN	ESMDE-224A6010-000	ESMDE-276A6011-000	ESMDE-327A6011-000	ESMDE-379A9021-000	ESMDE-40AA9023-000	ESMDE-40DA6011-000
Enclosure External Dimensions						
Length (mm)	6426	8010	9594	11178	11970	11970
Width (mm)	3400	3400	3400	3400	3400	3400
Height (mm)	3225	3225	3225	3225	3225	3225
Overall Length (mm)	7686	10380	11964	14808	15600	13460
Weight (kg)	10500	12500	13500	16000	17000	15200
Input AC Parameters						
Region	EMEA					
Voltage / Frequency	400VAC, 50Hz					
IT Racks						
Rack Height	42U (2000mm)					
Rack Depth	1100mm					
600mm Wide Racks	4	6	7	9	10	13
Rack Load	8kN					
Electrical						
MDB	1	1	1	1	2	1
ATS	1	1	1	1	2	1
UPS Cabinet	1	1	1	1 UPS + 1 battery cabinet	2	1
UPS Module Redundancy	N	N+1	N+1	N+1	2N	N+1
UPS Rating	60kVA	60kVA (60kVA + 30kVA)	60kVA (60kVA + 30kVA)	90kVA (90kVA + 30kVA)	90kVA (90kVA + 90kVA)	60kVA (60kVA + 30kVA)
Battery Backup Time	15min@38kW IT Load	8min@58kW IT Load	9min@57kW IT Load	14min @85kW IT Load	5min @85kW IT Load	15min@35kW IT Load
Busbar System	Two per row					
Maximum Rack Load	10kW	10kW	9kW	10kW	9kW	3kW
PDU	2 per rack					
PDU Capacity (max)	3x32A @ 230/400V-3ph	3x32A @ 230/400V-3ph	3x16A @ 230/400V-3ph	3x32A @ 230/400V-3ph	3x16A @ 230/400V-3ph	3x16A @ 230/400V-3ph
PDU Type	monitored					
Mechanical						
Air Conditioning Type	In Row, Direct eXpansion					
Air Conditioning Redundancy	N	N+1	N+1	N+1	N+1	N+1
Air Conditioning Units	2	4	4	6	6	3
Cooling Capacity for IT Load (35°C)	38kW	58kW	57kW	85kW	85kW	35kW
Exterior Ambient Operating Range	-20°C to +45°C	-20°C to +45°C	-20°C to +45°C	-20°C to +45°C	-20°C to +52°C	-20°C to +45°C
Fire Detection and Suppression						
Very Early Smoke Detection System	Optional					
Fire Detection System	Conventional					
Fire Suppression System	NOVEC™ 1230					
Cable Trays						
LAN Cable Tray	200mm wide mesh					
Fiber Optic Tray	4" x 4"					
Spill-over Exit	Single per IT rack					
Lighting						
Lighting Element	LED					
Lighting Illumination	300lx at floor level					
Emergency Lighting	1 lux at floor level, 1h backup					

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