DIGITAL

Life Is On | **Schneider** Electric

Edge Computing
Needs and Solution Principals

Denis Vainer – Sales director, CA, AZ, GE

Schneider Electric, the Global Specialist in Energy Management and Automation

€34Bn
FY 2022 revenues

~ 5%
of revenues devoted to R&D

~190K+
people in 100+ countries

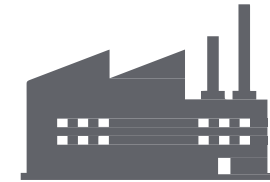Life Is On | Schneider Electric

...with Diversified End Markets

Datacenter & Networks

Building

Infrastructure

Industry

15%	43%	20%	22%

- Cloud and Service Provider
- Telco

- Office, Commercial and Industrial Buildings
- Healthcare
- Banking and Finance
- Hotel

- Utilities
- Smart City

- Oil and Gas
- Mining, Minerals and Metals
- Water and Wastewater
- Food and Beverage
- Banking and Finance

FY 20xx Revenues

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Electricity 4.0 : Powering the New Electric World
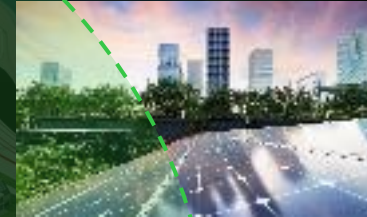
We connect the dots between everything, everywhere
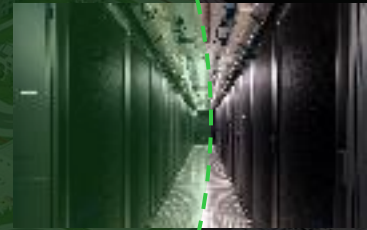

Supply / demand

Homes of the Future
- Sustainable
- Resilient
- Hyper-efficient
- More personal

Buildings of the Future
- Sustainable
- Resilient
- Hyper-efficient
- People-centric

Data Centers of the Future
- Sustainable
- Resilient
- Hyper-efficient
- Adaptive
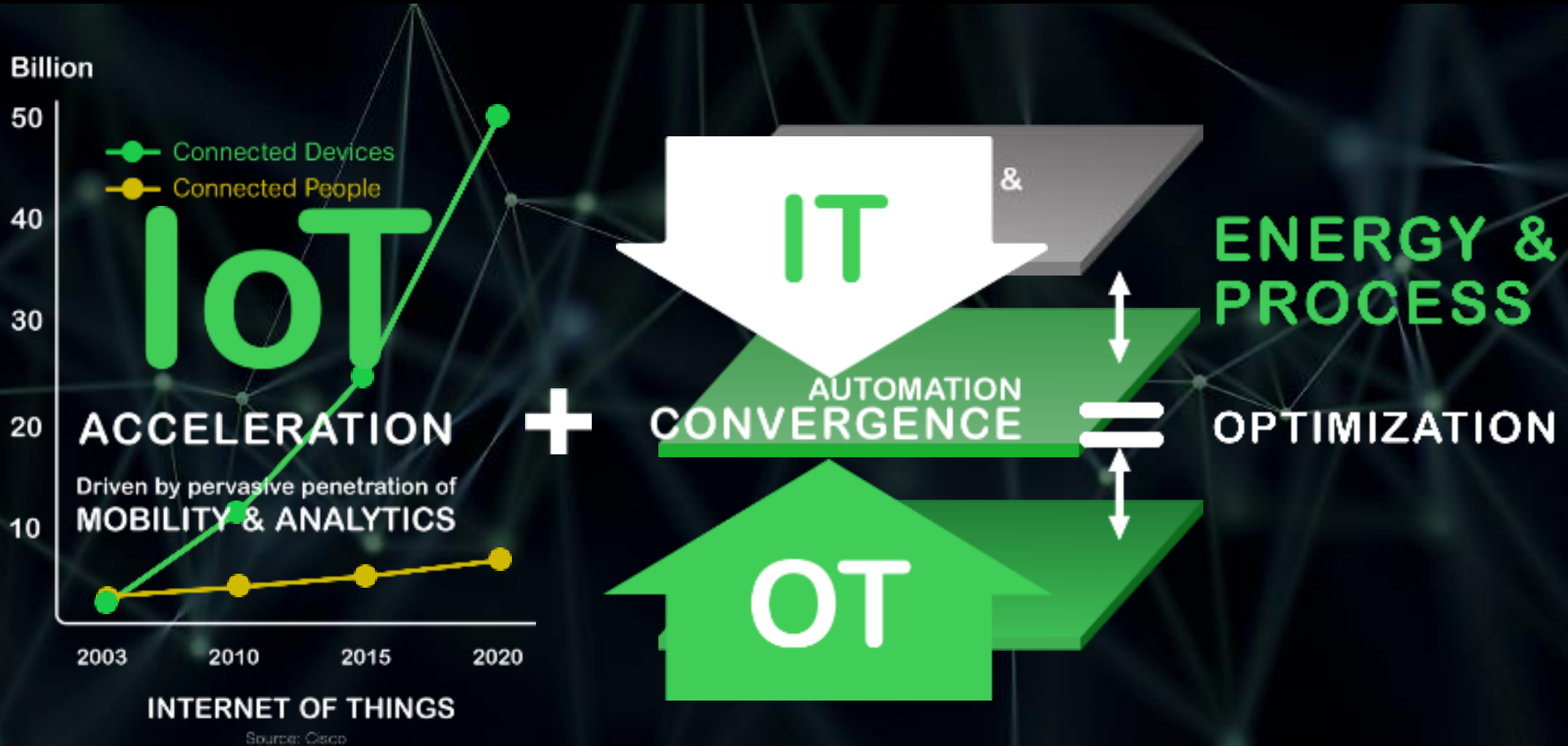
Industries of the Future
- Sustainable
- Efficient & Resilient
- People-centric
- Next Generation

Infrastructure of the Future
- Sustainable
- Resilient
- Efficient
- People-centric

Grids of the Future
- Sustainable
- Resilient
- Efficient
- Flexible

Digitization : Efficiency gains will come from IT/OT convergence

YOUR **business** is OUR **business**

YOUR BUSINESS

Whatever your business:

manufacturing, services or facilities management - your priority is to create and maintain an efficient, safe and comfortable environment for your customers, employees and end users.

MARKETS

- Healthcare
- Water
- Semiconductor
- Oil & Gas
- Small Commercial Buildings
- MMM
- Residential
- Marine
- Airports
- Food & Beverage
- Subway & Railway
- Entertainment, Sport, & Cultural Venues

OUR BUSINESS

Worldwide, we provide Global Power Management Systems adapted to specific needs in a wide range of sectors.

Our experts and project partners have intimate business knowledge of each of the markets we serve worldwide.

Global Power Solutions for Businesses in all Industries

YOUR **needs** are OUR **solutions**

YOUR NEEDS

OUR SOLUTIONS

Changes in manufacturing technologies

Increasing availability expectations

High cost of downtime

Energy efficiency and cost control

Equipment availability and predictive maintenance

Complying with regulatory requirements

Energy and service cost control

Digital transformation

Dynamic power variation

> **Our Solutions…**
Schneider Electric has built a portfolio of reliable pre-tested electrical architectures and voltage equipment, to secure power and cooling systems and data management needs

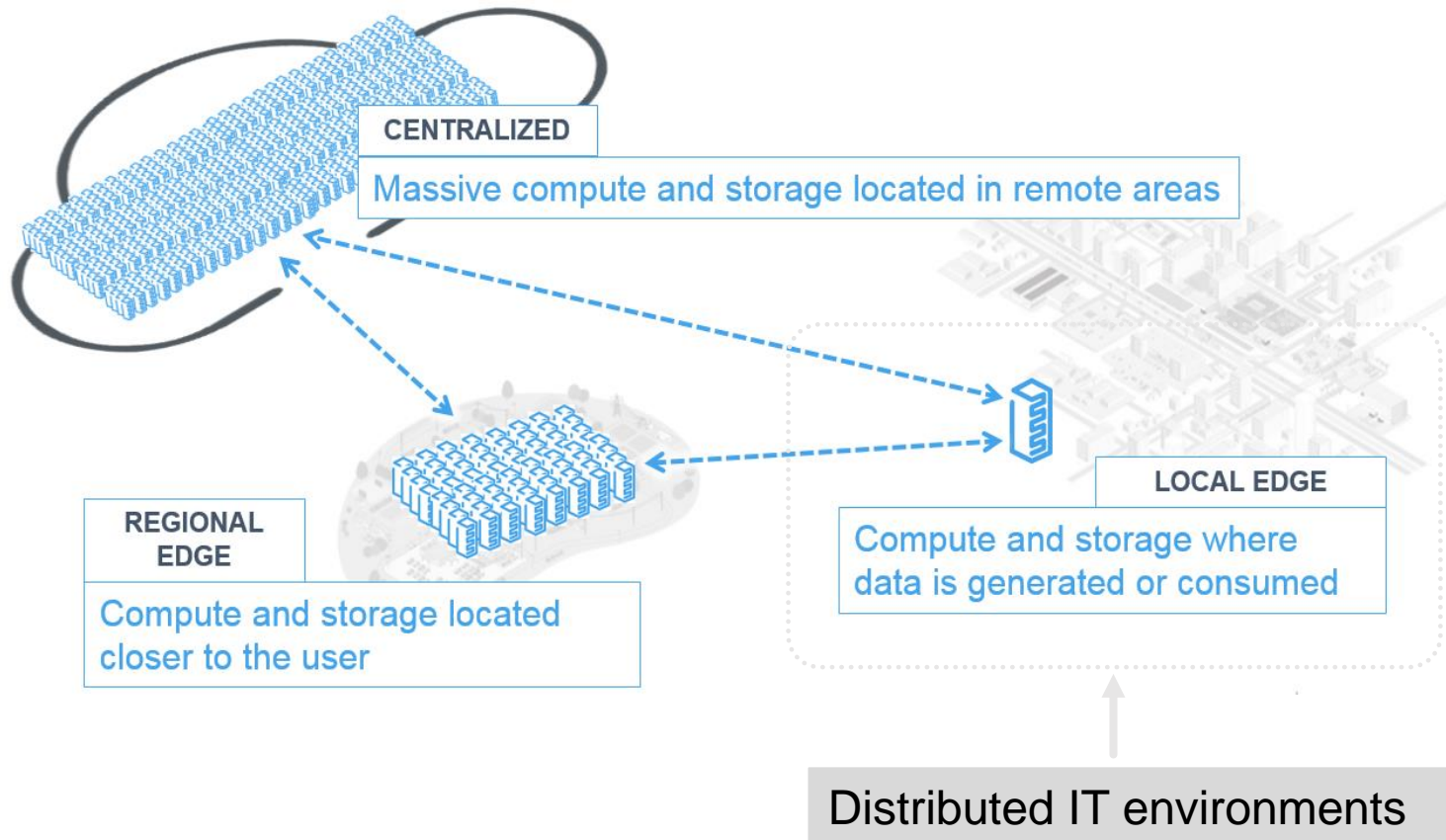Global Power Solutions for Businesses in all Industries

DIGITAL

Edge Computing
Needs and Solution Principals

NGMK Presentation

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Common challenges with managing local edge environments

CENTRALIZED

Massive compute and storage located in remote areas

REGIONAL EDGE

Compute and storage located closer to the user

LOCAL EDGE

Compute and storage where data is generated or consumed

Distributed IT environments

1. Location
   - Not an IT environment
   - Semi-controlled temperature
   - Low levels of dust
2. Staffing
   - No local IT staff
   - No one to locally troubleshoot
3. Visibility
   - Limited
   - Expensive
4. Security
   - Unrestricted access
   - Network vulnerabilities in physical layer

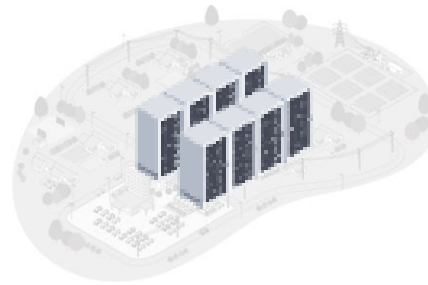# Optimum solutions for your Next Hybrid IT architecture

CENTRALIZED

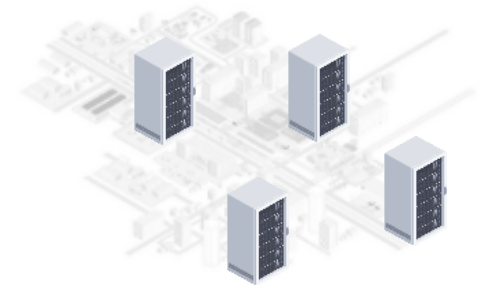Large scale data center for Cloud & Colocation
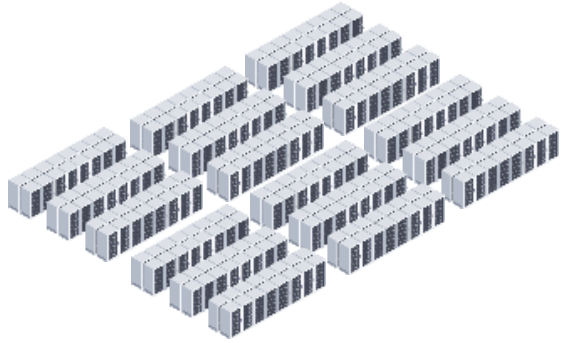
REGIONAL EDGE

On-premise / enterprise IT deployments

LOCAL EDGE

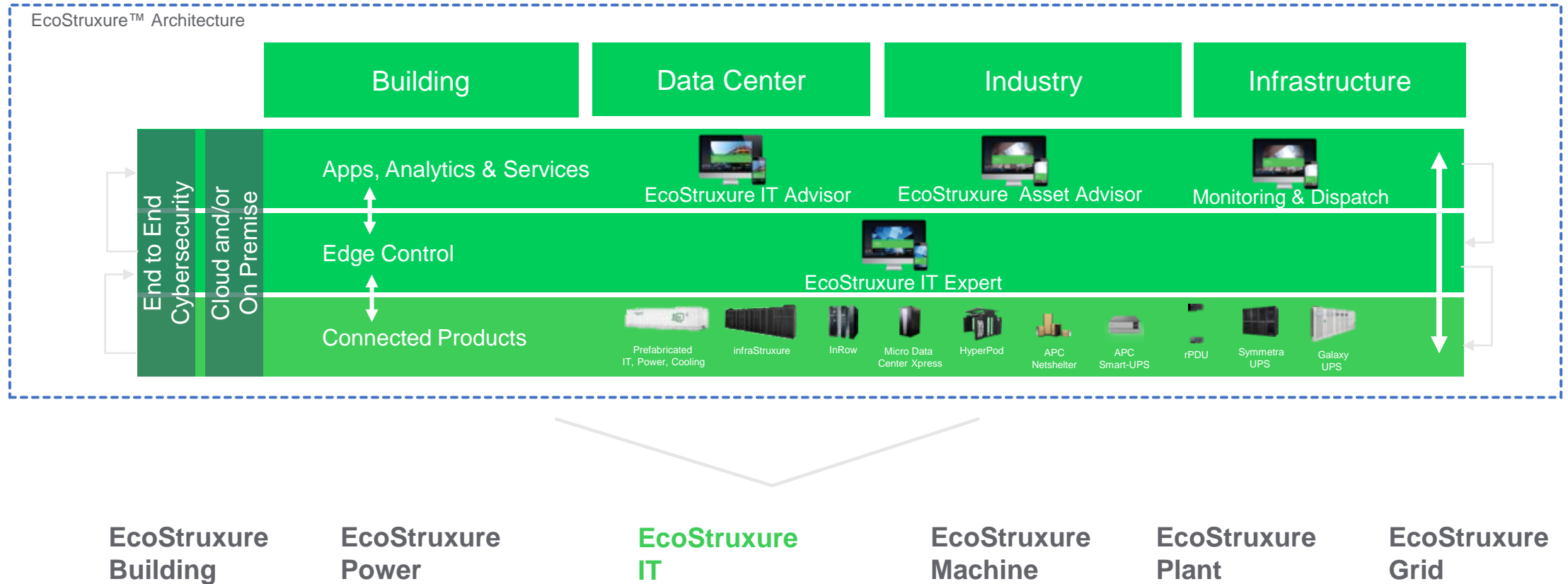Distributed IT deployments close to where data is processed

HYBRID IT

By 2022, 90% of enterprises will rely on hybrid IT architectures for their infrastructure needs*

* IDC study

EcoStruxure IT Software & Services

EcoStruxure™ Architecture

Building	Data Center	Industry	Infrastructure

End to End Cybersecurity

Cloud and/or On Premise

Apps, Analytics & Services

EcoStruxure IT Advisor

EcoStruxure Asset Advisor

Monitoring & Dispatch

Edge Control

EcoStruxure IT Expert

Connected Products

Prefabricated IT, Power, Cooling

infraStruxure

InRow

Micro Data Center Xpress

HyperPod

APC Netshelter

APC Smart-UPS

rPDU

Symmetra UPS

Galaxy UPS

EcoStruxure Building

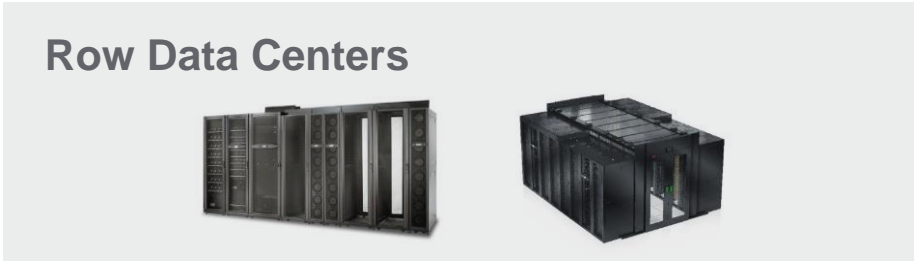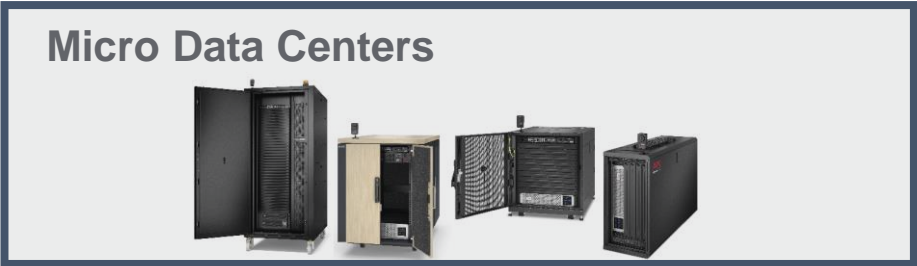**EcoStruxure Power**

EcoStruxure IT

EcoStruxure Machine

EcoStruxure Plant

EcoStruxure Grid

EcoStruxure Solutions for Edge Deployments

Best-in-class components are configured into complete data center solutions to meet your challenges at the Edge

Micro Data Centers

Row Data Centers

Modular All-in-One Data Centers
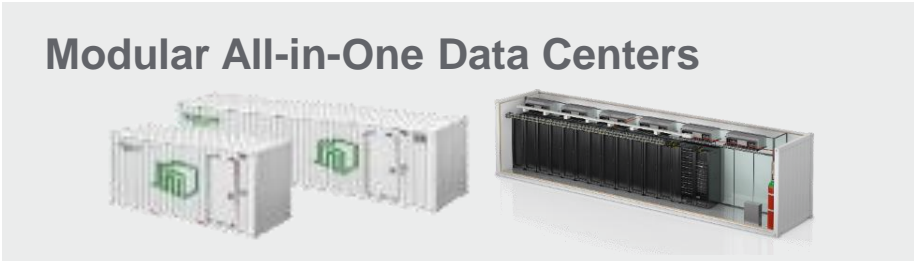
Management

Security

Services

Power

Cooling

Enclosures

Lifecycle Services

Simplification : What EcoStruxure Micro Data Center

Enclosure

Cooling

UPS

Power Distribution

Security

Monitoring

Internal
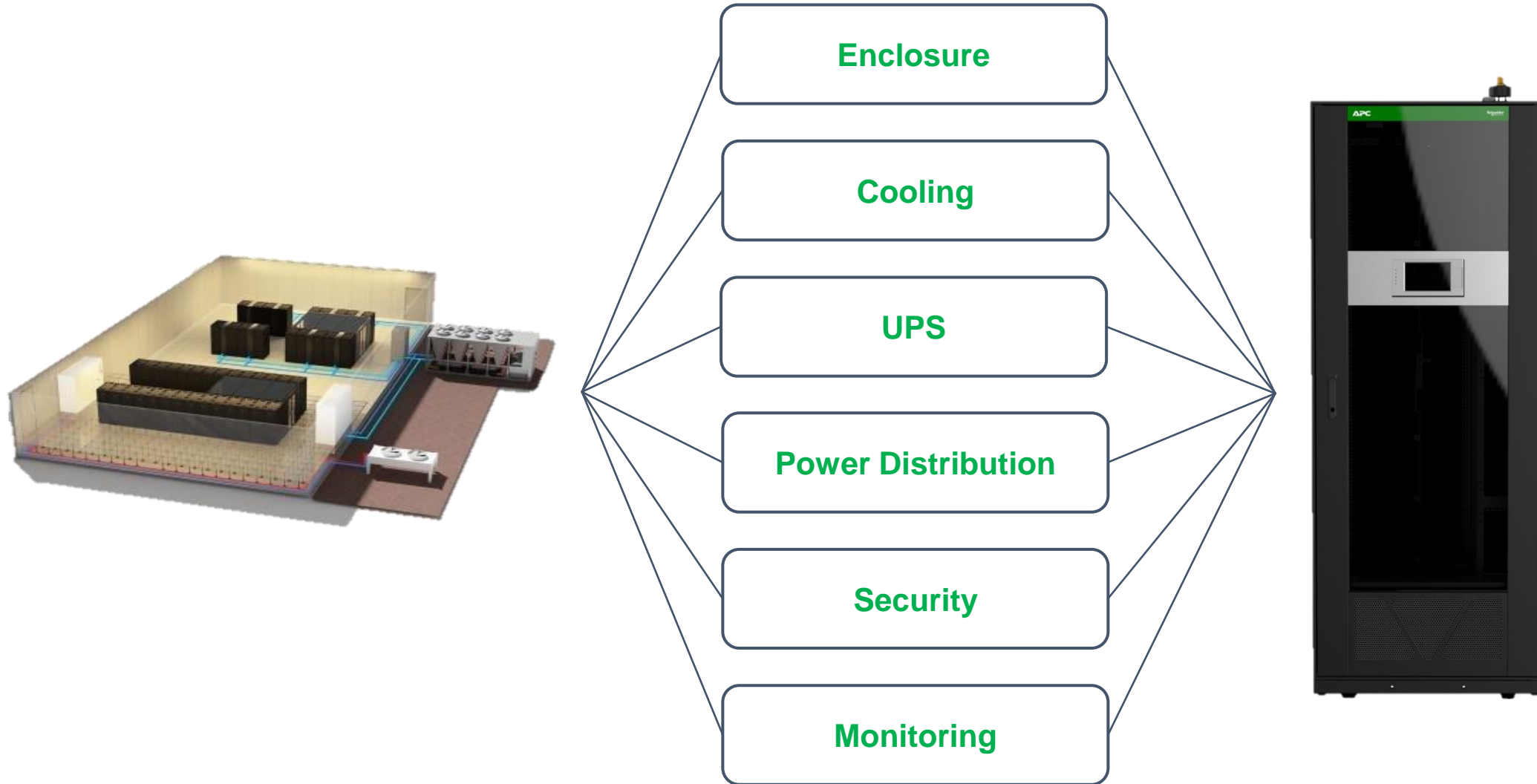
EcoStruxure™ Micro Data Center Potfolio

S-Series

C-Series

R-Series

Standard IT Environments

Commercial & Office Environments

Rugged Environments

Server rooms, wiring closets, network closets

Open office, stock room, retail stores, automated warehouse

Factory floor, industrialized warehouse, manufacturing plant

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EcoStruxure Micro Data Center C-Series

Built for commercial environments

Light Dust

Mild Temp Changes

Unsecured areas

Soundproofing

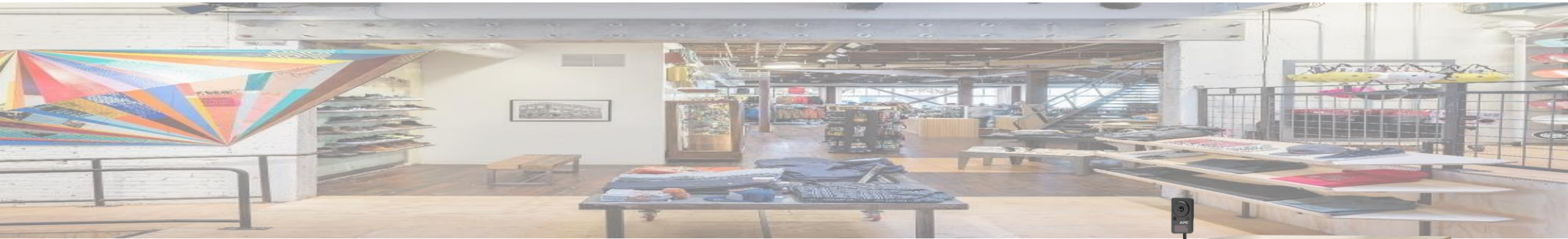Life Is On | Schneider Electric

EcoStruxure Micro Data Center
C-Series 43U

Built for commercial environments

Light Dust

Mild Temp Changes

Unsecured areas

C-Series

Micro Data Center for Office and Commercial Environments

CX Series Features:

➢ Soundproof Enclosure(s)
  ▪ 18.5dB noise reduction!
➢ Integrated Fan Cooling
➢ Multiple Color / Wood Grain Options
➢ Fan Booster Kits for High Density IT
➢ Shock Packaging for Pre-Integration
➢ Physical Security / Keycard Access

C-Series

Micro Data Center for Office and Commercial Environments

6U MDC Features:

- ➢ 6U of Rack Space
- ➢ Compact, Low-Profile form factor
- ➢ No Floor Space, East Wall Mount (Casters Optional)
- ➢ Supports equipment up to 30in (762mm)
- ➢ 250lb (113kg) weight load capacity
- ➢ Compatible with Smart-UPS VRLA and Li-Ion
- ➢ Sleek Design
- ➢ Dust Filter and Integrated Fans

WALL

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Internal

What Ecostruxure Row Data Center

EcoStruxure Row Data Center Story

Integrated row-based data center solution that dramatically reduces time and complexity from design to installation and

Fast
Quick and simple to configure, deliver, and install

Integrated
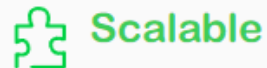Rules-based architecture designed to work as a system

Efficient
Best-in-class components and system designs

Reliable
Backed by legendary reliability with thousands of solutions installed

Scalable
Modular components that can be configured to exact requirements

Simple
Standard components designed to seamlessly integrate together

Prefabricated Modular DC : means more than just off-site integration

Connected Components +   Ecostruxure Software   +   Factory integration & Testing   +   Installation & Services
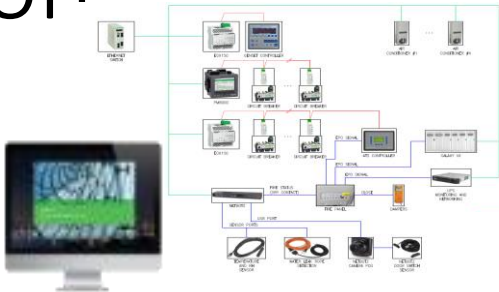
Prefabricated In Schneider facility

On-site Work

Power Modules up to 2MW &Power Skids
MV, LV, UPS, Batt

IT Data Halls and All-In-One Modules uo to 200racks
Racks, Cooling, Electrical, Containment, PDU

Cooling Plant
Packaged Chillers, Air Economizer & Controls

Installation, Services, Facility Opps

Internal

Medium Offer

Official Name: Easy Modular Data Center All-in-One
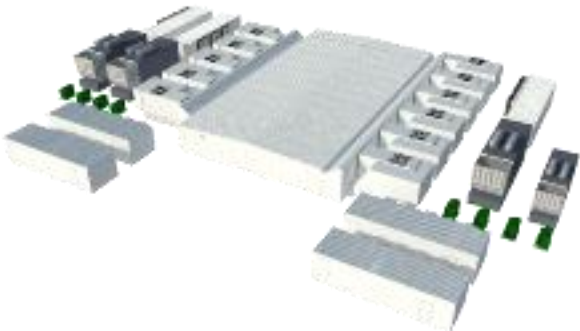
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What Is Missing In the Modular Data Center Market?

Feedback from Regions

	COMPETITORS	ENCLOSURE	REDUNDANCY	LOAD	PRICE GAP	COMMENTS
LAM	Huawei Vertiv Local Integrators	ISO NON-ISO	TIER III TIER II+	4 to 6 racks 4-5kW/rack	30%	Many countries need to sell with GM at 30-35% 60Hz countries
APJ	Huawei Vertiv -	ISO	TIER II TIER III	4 to 12 racks 30kW – 100kW	20%	Monitoring EcSIT is not a priority
AFRICA	Local Integrators Vertiv Huawei	Not relevant NON-ISO	TIER III TIER II+ TIER II	4 to 6 racks 3-5kW/rack	30%	Basic monitoring EcSIT is not a priority FM200
MIDDLE EAST	Huawei Vertiv -	Multi Bay	TIER III TIER IV	Multi Bay 3-5kW/rack	30%	Our sales history says NON-ISO is the preferred option
EUROPE	Local Integrators Vertiv Huawei	NON-ISO ISO	TIER III TIER II+ TIER II	4 to 8 racks 3-5kW/rack	30%	Monitoring is a must Software is nice to have

What is the **value** to the customer?

- **Delivery time** – no longer than 12 weeks
- **Competitive Price** – 30% reduction compared BCF ETO
- Predictable cost - Include shipping cost in the final price
- Remote Monitoring
- Repeatable design

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Internal

Easy Modular Data Center All-In-One

Offer Description

	PFMICP027F1R005B	PFMICP080F1R012B	PFMIEP038D1R006B	PFMIEP094D1R014B
Power rating (kW)	27kW (5.4kW per rack)	80kW (6.7kW per rack)	38kW (6.3kW per rack)	94kW (6.7kW per rack)
Racks	ER6202 (x5)	ER6202 (x12)	ER6202 (x5) ER8202 (X1)	ER6202 (x13) ER8202 (X1)
UPS	Easy UPS 3S 30kVA	Easy UPS 3M 80kVA	Easy UPS 3S 40kVA	Easy UPS 3M 100kVA
Cooling (N+1)	Overhead DX fancoil	Overhead DX fancoil	InRow DX	InRow DX
Power Distribution (N)	Electrical cabling with metered rack Easy PDUs EPDU1132M	Electrical cabling with metered rack Easy PDUs EPDU1132M	Busway with metered rack PDUs EPDU1132M Easy	Busway cabling with metered rack Easy PDUs EPDU1132M
Enclosure	ISO 20'	ISO 40'	25' Module	45' Module
Fire protection	Optional (Fire detection included)			

Internal

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Easy Modular Data Center All-In-One

Options available

		PFMICP027F1R005B	PFMICP080F1R012B	PFMIEP038D1R006B	PFMIEP094D1R014B
SECURITY & MONITORING	Access control system - HID Access control Card & Keypad	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
	Netbotz environmental monitoring system	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
	DCIM: EcoStruxure IT Expert	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
	Fire Detection - VESDA	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
COOLING & ENVIRONMENTAL	Fresh air renovation system according	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
	Humidifier	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
	Dehumidifier	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
POWER	ATS included in electrical panel	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
	Electrical distribution to racks 2N	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
	UPS 2N Redundancy [1]	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
	Redundant main electrical panel [2]	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL

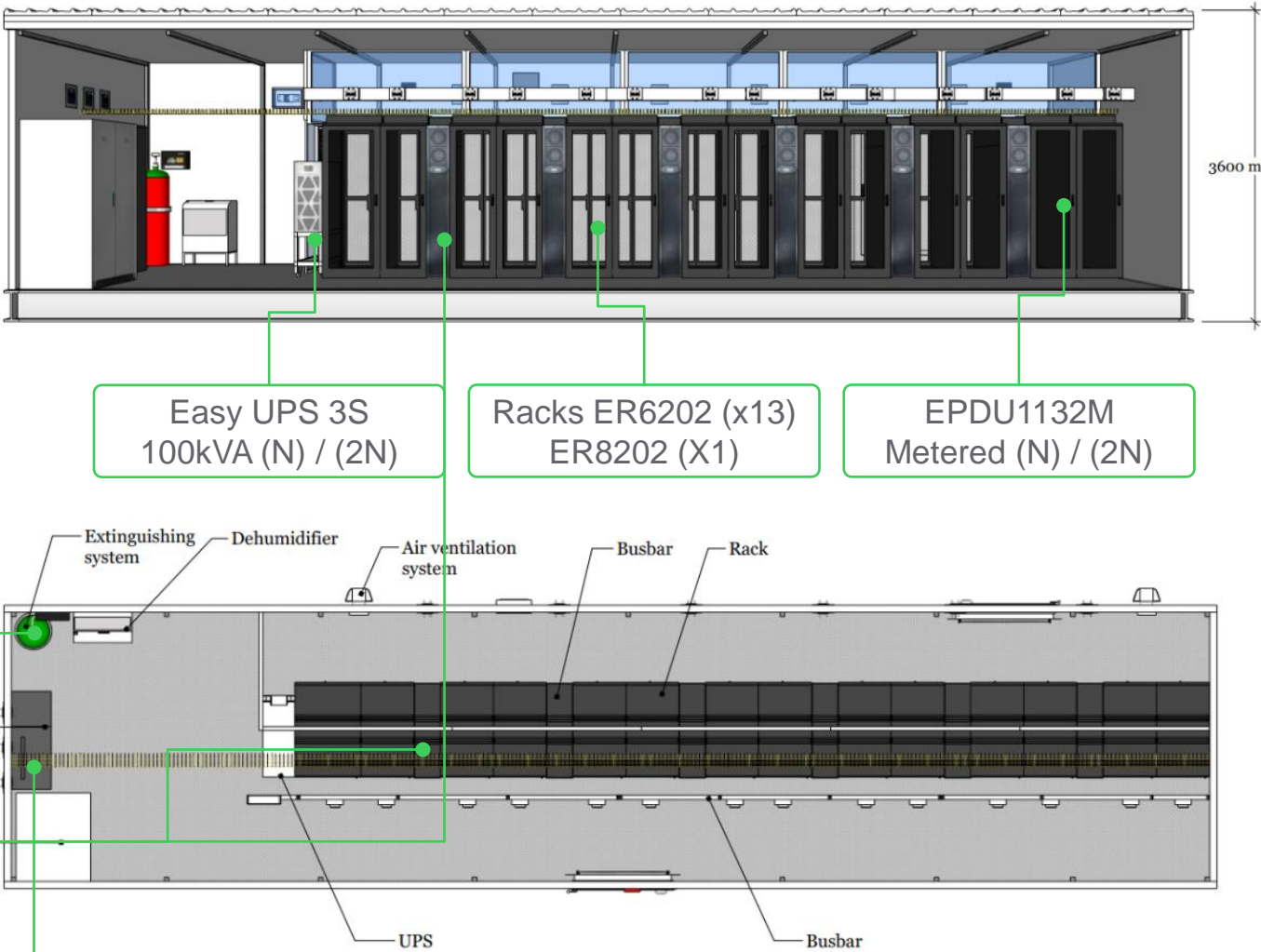(1)   includes also 2N Electrical Distribution redundancy

(2)   includes also 2N Electrical Distribution redundancy and 2N UPS redundancy

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Internal

BD04 – PFMIEP094D1R014B

Module Non ISO45'

IT Load: 94kW

14 Racks

Rack density: 6,7kW

3600 mm

Easy UPS 3S 100kVA (N) / (2N)

Racks ER6202 (x13) ER8202 (X1)

EPDU1132M Metered (N) / (2N)

Fire extinguishing system Novec / FM200

InRow DX (N+1)

Electrical Input (N) / (2N)

Extinguishing system — Dehumidifier — Air ventilation system — Busbar — Rack

UPS — Busbar

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