25 YEARS 2001 - 2026

Out Line

INNOVATIVE SOLUTIONS

Data Center infrastructure solutions

Datacenter Catalogue Ver. 01/26

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Out Line
INNOVATIVE SOLUTIONS

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Out Line Solutions for DataCenter Infrastructure

The Out Line's DNA is based on over thirty years of experience in the evolution of energy and telecommunications technologies.

With its headquarters, warehouse, and production located near Rome, Italy, Out Line can count on strategic partners and consultants around the world, in addition to its own staff in China.

Over the years, Out Line has evolved to adapt to the increasingly complex demands of the market. It has therefore increased its expertise in R&D, Marketing, Logistics and Operations, and after-sales services.

Out Line's fundamental policy is to meet customer needs beyond their expectations. In this context, our primary goal is to design affordable, practical and reliable products, based on our extensive experience and expertise, produce them with precision and punctuality, and offer a high-quality after-sales service.

Out Line serves the data center market with a complete, turnkey offer of a compartmentalized aisle in both hot and cold versions, depending on the customer's design needs.
Out Line supports the customer from the initial phases (site inspection and data center design based on the planned layout) through to the installation of the entire infrastructure.

Out Line
INNOVATIVE SOLUTIONS

The last fifteen years have seen an evolution in the concept of Data Centers. Stating the increase of the server rooms managing expenses, the primary target of the new data centers has become the energy saving.

This has led to a compartmentalized infrastructure, that is a cooling and airflow management solution that physically separates hot air from cold air, creating “islands” (often self-supporting structures such as cages) around the server racks, thus isolating them from the data hall environment.

This technique, called hot or cold aisle containment, significantly improves the efficiency of the cooling system, reducing energy costs and ensuring a much more stable environment for all of the IT equipment.

Operating Principles

- **1. Rack Insulation:** The racks containing the servers are enclosed within a dedicated structure, often called an “island” or “cage,” which can be a roof, or vertical walls, or a free-standing structure.
- **2. Airflow Separation:** The island prevents the mixing of hot and cold air. The hot air emitted by the servers is channeled upward (or into a dedicated plenum) and reintroduced into the air conditioning system, while the cold air is kept confined to the rack inlet area.
- **3. Cooling Optimization:** By concentrating cold air targeted at the rack inlet points, energy waste is reduced and the efficiency of the air conditioning systems is increased, ensuring a more uniform cooling and greater capacity.

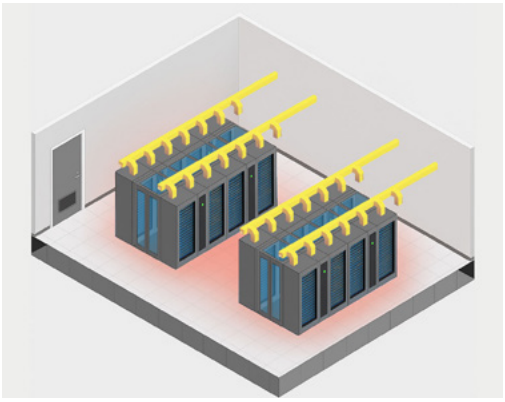
Benefits

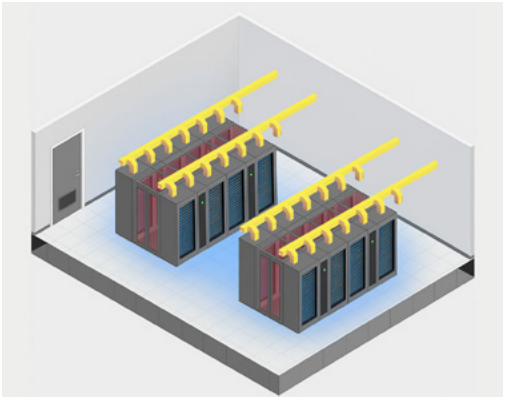
- **Improved cooling capacity:** The cooling system becomes more efficient, potentially doubling its capacity, also thanks to the in-row solutions specifically developed for compartmentalized islands.
- **Greater density and stability:** The internal environment of the data center is more stable, with more uniform temperatures, which promotes the longevity of IT equipment.
- **Flexibility:** Self-supporting systems allow for implementation in both existing data centers and new rooms, adapting to different rack configurations.
- **Modularity and scalability:** The unique modular structure allows the data center to be expanded by adding cabinets, in-row air conditioners, andany other components, simply by removing the terminal section at one end of the island and replacing it once the expansion is complete.

Datacenter

The complete solution includes:

- Server cabinets ranging in size from 600x1000 to 800x1200, with the option of customizing dimensions;
- Complete range of basic and smart PDUs, including the new fully modular MPRO PDUs;
- Custom-designed in-row electrical panels;
- In-row and perimeter cooling solutions;
- Cable ducts for fiber optic and copper cables;
- ODFs, patch panels, patch cords, etc.;
- Aerosol-based fire protection solution
- Monitoring system.





Type of racks

Glass door

Perforated door

Metal door

Doble glass door

Double perforated door

Double metal door

Blind metal panel

DataCenter
Part Number Generation

HEIGHT	WIDTH x DEPTH	PORT AND PANEL CONFIGURATION
DC	60 | 10	111
42U	60 | 12	131
46U	80 | 80	141
	80 | 10	211
	80 | 12	231
		241
		411
		431
		441
		311
		331
		341

42U Height 2000mm
H

46U Height 2200mm
H

6010 Width 600 mm Depth 1000mm
L P

6012 Width 600 mm Depth 1200mm
L P

8012 Width 800 mm Depth 1200mm
L P

123 A: Front Door P: Rear Door L: Side Door
A P L

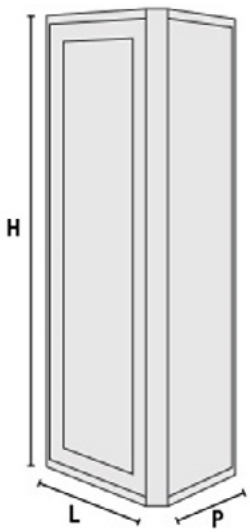
Door Type Code

1: Glass door

2: Perforated door

3: Double perforated door

4: Blind metal panel



Front Door

Rear Door

Side Door

MODEL

COLOR

IT

PORT AND PANEL CONFIGURATION

NE
GR

NE BLACK

GR GRAY

DC-42U-8010-141-IT-GR

Commercial Sizes			Configuration code	
H mm	W mm	D mm	BLACK	GRAY
2000	600	1000	DC-42U6010-231-IT-NE	DC-42U6010-231-GR
2000	800	800	DC-42U8080-231-IT-NE	DC-42U8080-231-IT-GR
2000	800	1000	DC-42U8010-231-IT-NE	DC-42U8010-231-IT-GR
2000	800	1200	DC-42U8012-231-IT-NE	DC-42U8012-231-IT-GR
2200	600	1000	DC-46U6010-231-IT-NE	DC-46U6010-231-IT-GR
2200	600	1200	DC-46U6012-231-IT-NE	DC-46U6012-231-IT-GR
2200	800	1000	DC-46U8010-231-IT-NE	DC-46U8010-231-IT-GR
2200	800	1200	DC-46U8012-231-IT-NE	DC-46U8012-231-IT-GR

Data Center
Co-location

A n-section colocation rack is a rack cabinet designed to divide space into “n” separate zones, each of them with independent locks or access, to safely and organizedly house the IT equipment of different customers or users within a data center.

This type of rack offers flexibility and greater security, allowing space to be allocated specifically to each customer, each with its own front panel, accessible and configurable as needed.

Main characteristics:

- **Sectional Division:**
  The rack is vertically divided into distinct compartments, thus providing separate and independent spaces for different customers.

- **Separation between customers:**
  Each section provides a space isolated from the others, protecting each customer’s data and equipment.

- **Secure Access:**
  Each section is equipped with individual locks (key or combination), ensuring that all user’s devices are accessible only to authorized personnel.

- **Flexible Space:**
  The size of the sections, typically from 2 to 4, can vary, allowing the space to be customized according to the customer’s needs. The most common division is into sections of equal height.

- **Installation and Management:**
  Side panels are often removable and mounting rails are adjustable, simplifying equipment installation and cable management.

- **Cable Management:**
  Secure cable management channels are provided within each compartment, keeping cabling tidy and secure.

A colocation rack is therefore a modular and secure solution for data centers, ideal for serving multiple clients efficiently while maintaining the order and protection of their IT infrastructure.

Optical cabling solutions for DataCenter

The datacenter ability to support growing traffic loads and adapt to new needs mainly depends on the quality and versatility of its optical cabling.

This is why Out Line offers a comprehensive portfolio of fiber solutions, designed to ensure high performance, reliability, and ease of management even in the most complex environments.

Breakout cables, MPO/MTP cables, and patch cords allow for high-density connections between the backbone and horizontal distribution, while ensuring order, rapid installation, and reduced risk of error.

The use of pre-terminated solutions also simplifies deployment operations, reduces downtime, and ensures minimal optical losses, essential elements for those who manage mission-critical applications.

The offering is completed by modular adapters and components that allow for customization of each infrastructure according to the specific customer needs, with the certainty of an architecture ready to support future developments.

Out Line
SOLUZIONI INNOVATIVE

MPO-MPO® Cables

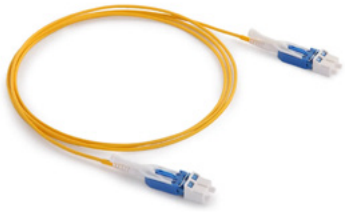
MPO/MTP patch cords are the ideal solution for high-density connections in modern data centers.

Designed to simplify the connection between backbone and horizontal cabling, they ensure high performance, a small footprint, and faster installation times.

Reliable and modular, they support applications up to 400G, offering maximum flexibility for the networks of today and tomorrow.

	Component	Options	Notes
Cable	Number of fibers	4F ~144F	
	Number of fibers	SM: G652, G657	
		MM: OM1, OM2, OM3, OM4, OM5	
	Cable sheath	LSZH, OFNR, OFNP etc.	
	Enforcing element	Kevlar	
	Color of cable	SM: Yellow	Editable on demand
		MM: OM1 / OM2 Orange ,OM3 Aqua, OM4 Magenta, OM5 Green	
Connector	Polarity	Type A / Type B / Type C (TIA-568.3-D)	
	Number of fibers	12F/16F/24F/32F/48F	
	Type of connector	Male/Female	
	Brand Connector	US Conec MTP, Senko MPO, Nissin MPO, Sanwa MPO, TSL MPO	
	Brand Connector	SM: body yellow or green, Boot black editable	Editable on demand
		MM: Acqua o Magenta, Boot black	
Loss	SM (1310/1550)	IL: Low Loss ≤0.35 dB, Standard ≤0.75 dB	
		RL: APC ≥60 dB	
	MM(850/1300)	IL: Low Loss ≤0.35 dB, Standard ≤0.60 dB	
		RL: PC ≥20 dB, APC ≥40 dB	
Cable length		0,5 m / 1 m / 2 m / 5 m / 10 m / 25 m / 100 m	Editable on demand

Simplex / Duplex Patch Cord



Available in multimode (MM) and single mode (SM) versions, LC and SC optical patch cords ensure reliable, high-performance connections in any data center architecture.

Ideal for point-to-point connections and flexible patching, they offer low insertion losses, ease of management, and maximum compatibility with major network applications. A versatile and secure solution for high-performance networks.

	Component	Options	Notes
Cable	Number of fibers	Simplex, Duplex	
	Diameter	0.9mm, 1.2mm, 1.6mm, 1.8mm, 2.0mm, 3.0mm etc.	
	Kind of fiber	SM: G652, G657 etc.	
		MM: OM1, OM2, OM3, OM4, OM5	
	Sheath	LSZH, OFNR, OFNP etc.	
	Enforcing element	Kevlar	
	Color of cable	SM: Yellow	Editable on demand
		MM: OM1 / OM2 Orange ,OM3 Aqua, OM4 Magenta, OM5 Green	
Connector	Polarity	A-A, B- B (TIA-568.3-D)	
	Type of connector	LC (uniboot) / SC / FC / ST etc.	
	Finishing	PC/UPC/APC	
Loss	SM(1310/1550)	IL:UPC≤0.2dB,APC≤0.3dB	Editable on demand
		RL:UPC≥50dB,APC≥60 dB	
	MM(850/1300)	IL: PC ≤0.2 dB	
		RL: PC ≥20 dB	
Cable length		0,5 m / 1 m / 2 m / 5 m / 10 m / 25 m / 100 m	Editable on demand

Optical drawsers

The exponential growth of the data and the evolution of IT architectures require more and more flexible, scalable and secure network infrastructures. In modern data centers, cabling is not just a technical element, but represents the backbone on which performance, operational continuity and the possibility of future evolution are based.

Out Line offers integrated solutions that simplify connection management, ensuring compatibility between copper and fiber and offering the possibility of rapid upgrades without interrupting operations. Attention to design, modularity, and ease of assembly and maintenance reduces installation times and ensures maximum efficiency in the daily management of infrastructures.

From hybrid distribution units to sub-racks, to high-density optical modules and panels, every detail is designed to combine mechanical robustness, ease of use, and future expandability. These solutions enable orderly and secure cable management, improving overall data center performance and supporting the evolution toward increasingly high-performance networks.

OL-TS-FD1 Optical drawsers

OL-TS-FD1-1U

OL-TS-FD1-2U

OL-TS-FD1-3U

Model	Number of fibers managed 4F ~144F	
	Number of fibers	On demand
OL-TS-FD1-1U	Material	Black Cold-reduced Sheet; Aluminum Sheet
	Coating	Powder
	Color	Corpo: Nero, Frontalino: Grigio
	Installation	Rack 19''
	Number of slots	3
	Capacity	72F (LC duplex)
OL-TS-FD1-2U	Material	Black Cold-reduced Sheet; Aluminum Sheet
	Coating	Powder
	Color	Corpo: Nero, Frontalino: Grigio
	Installation	Rack 19''
	Number of slots	6
	Capacity	144F (LC duplex)
OL-TS-FD1-3U	Material	Black Cold-reduced Sheet; Aluminum Sheet
	Coating	Powder
	Color	Corpo: Nero, Frontalino: Grigio
	Installation	Rack 19''
	Number of slots	12
	Capacity	288F (LC duplex)

OL-MD1 Series of optical modules

Model	CapacitY	Rear adapter	Front adapter	Kind of fiber	IL & RL
OL-MD1-1M24L	24F	1×MPO	12×LC duplex	OM3	IL: SM ≤ 1.0 dB (std.), SM ≤ 0.60 dB (low loss), MM ≤ 0.80 dB (low loss), MM ≤ 0.50 dB (low loss)
OL-MD1-2M24L	24F	2×MPO	12×LC duplex	OM3	
OL-MD1-3M24L	24F	3×MPO	12×LC duplex	OM4	
OL-MD1-2M6M	48F	2×MPO	6×MPO	OS2	
OL-MD1-1M12S	12F	1×MPO	6×SC duplex	—	

Power Distribution Unit:

PDU, acronym for Power Distribution Unit, is a power distribution
device designed to supply power to multiple connected devices
through several output sockets.

Typical applications include:
- **Servers**
- **Networking equipment inside Data Centers**
- **Computers**
- **ATS systems**

The main distinction is between:

Basic PDUs
Intelligent PDUs

Basic PDUs provide simple power distribution.
Intelligent PDUs enable monitoring of electrical and environmental parameters and allow control of output sockets.

Intelligent PDUs are equipped with a “smart” module, which represents the core of the unit. This module contains the electronics that enable monitoring and outlet control.

1) BASIC PDU

The Basic Power Distribution Units provide reliable power distribution to all connected equipment inside server racks or network cabinets.

Basic PDUs are available for horizontal 19” and vertical mounting,
to match different accessibility and space requirements.

Single-phase and three-phase versions are available, from 16A to 32A,
with Schuko, Universal Schuko, C13 and C19 sockets.
On request, UK, CH and USA socket standards are also available.

Optional features include:
• LED power indicator
• Illuminated switch
• Circuit breaker
• Local multimeter for electrical parameter reading

2) Smart PDUs

Smart PDU categories by performance

METERED (o MONITORED):
Monitoring of electrical parameters at general PDU level.
Total electrical load and total energy consumption are calculated and displayed.

SWITCHED:
In addition to Metered features, allows individual outlet controls;
It means that each outlet can be also switched ON/OFF and scheduled on a specific time.

METERED (o MONITORED) ON OUTLET:
Combines full monitoring and control at the single outlet level.
This is the most advanced solution, typically used in high-density installations.

Our PDU range is one of the most complete solutions available on the market and includes the following families:

- **IP PDU** (entry level)
- **MPRO PDU** (mid / high level)
- **MPRO X PDU** (high-end)
- **Z PDU** (top of the range)
- **48Vdc PDU** (DC monitored units)

In addition, the Z-T model is a special metered PDU developed specifically for Telecom applications, but suitable for multiple industrial uses.

Smart PDUs
PDU IP (entry level)

Key features:

- **“Hot Swap” smart module: allows replacement of the module without interrupting power supply to the outlets.**
- **Maximum flexibility in outlet configuration.**
- **Customization available: management module, socket colors, frame colors and cable exit positioning.**

Three performance levels available through interchangeable modules:

Basic (B-PDU)	**Basic (o local) metered (BM-PDU)**	**Basic monitored (IP-PDU)**

Clever SUM PDUs can be upgraded from a basic PDU to a locally metered or fully remote-monitored PDU by replacing ONLY the smart module.

The SUM IP PDU allows progressive upgrading by adding different smart modules, reaching Metered or Monitored performance levels.

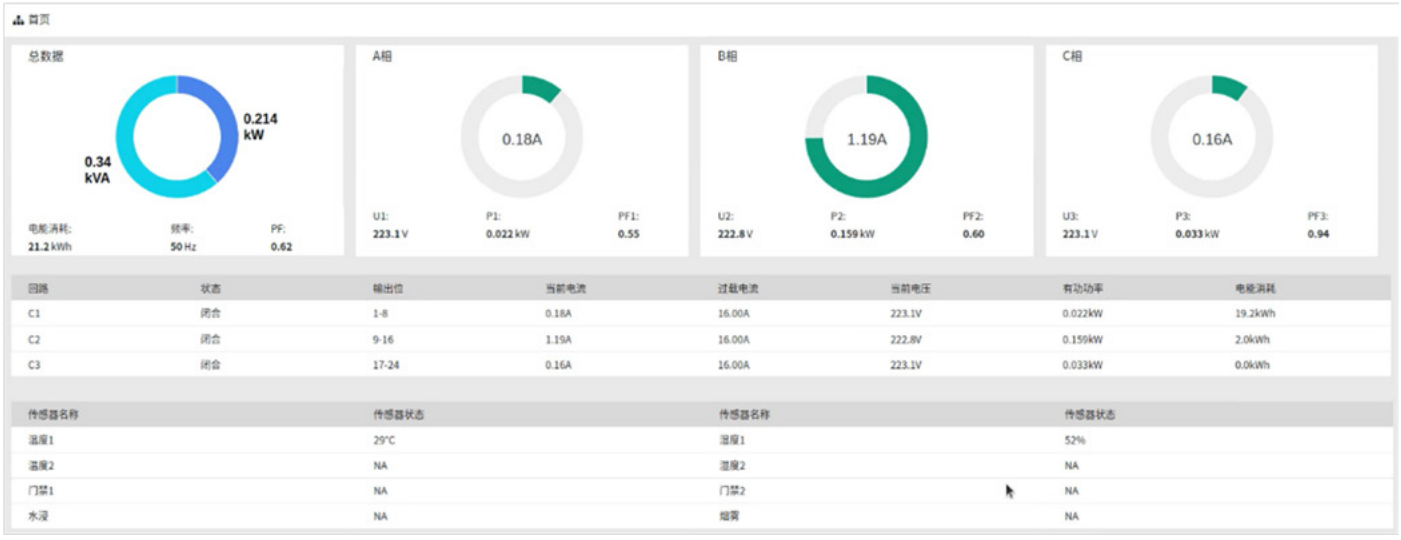
Silver SUM PDU Family	B-PDU	BM-PDU	IP-PDU
Maximum current up to 63A	√	√	√
Voltage: 100~240V, 200~400V	√	√	√
Multiple outlet configuration	√	√	√
Surge protection – optional	√	√	√
Circuit breaker – optional	√	√	√
Three-phase 16A / 32A	√	√	√
Locking safety outlets	√	√	√
Tool-less mounting	√	√	√
Hot-swappable local ammeter		√	√
IP access			√
SNMP management			√
IP Environmental monitoring			√

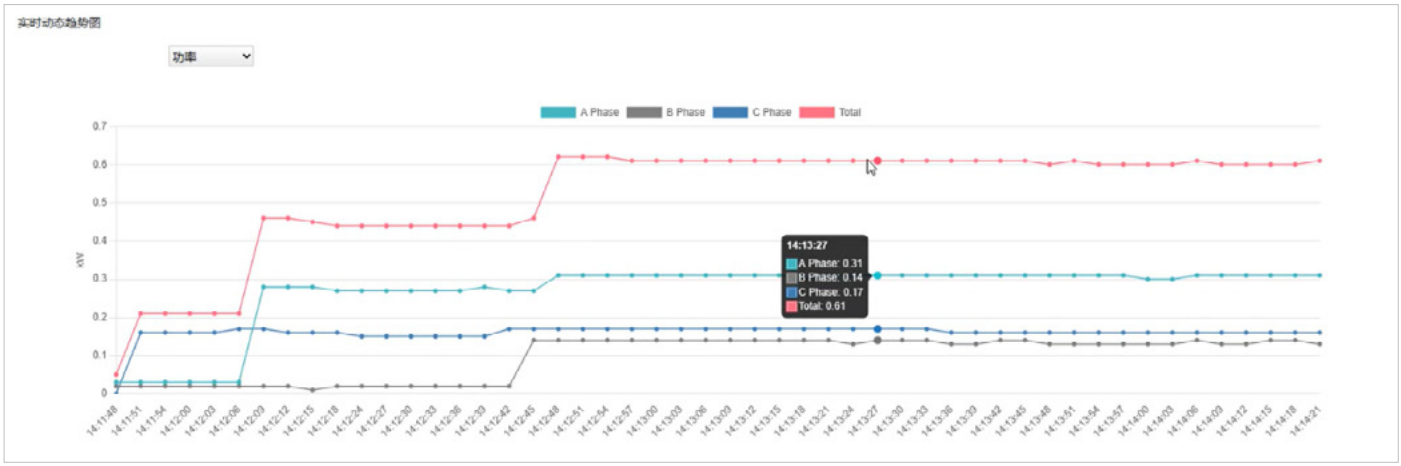
- Simplified and highly intuitive software
- Communication protocols: SNMP / Telnet
- Alarm e-mail notifications
- Through an embedded web interface, IP-PDUs allow monitoring of:
  - Current load
  - Voltage
  - Energy consumption
  - Power
- Ability to monitor up to 5 PDUs using a single IP address via daisy-chain
- Monitoring via sensors for: Temperature and humidity (1 T/H sensor available on request)
- NET port: Ethernet access for remote monitoring
- SER port: Serial access, MODBUS protocol, daisy-chain connection (IN)
- LINK port: Daisy-chain connection (OUT)

Smart PDUs
PDU M PRO

Key Feature:

- **Real-time monitoring of PDU load variations, enabling predictive analysis of energy consumption trends.**






MPDU

Smart PDUs
PDU M PRO X

With the fast progress of AI technology, the power consumption of GPU servers and the supporting hardware infrastructure continues to increase, constantly pushing beyond the power limits of standard cabinets.

As the central hub for power distribution inside racks, PDUs (Power Distribution Units) are now facing unprecedented challenges. The MPDU ProX high-power-density intelligent hybrid PDU is an innovative solution specifically engineered to meet these demanding requirements.
MPDU ProX can deliver up to 44 kW per unit, fully supporting the deployment of 3–4 mainstream GPU servers inside a standard 42U cabinet.

Key features include:

- Intelligent monitoring and control: supports real-time monitoring of total PDU energy consumption and per-outlet energy consumption; provides remote, outlet-level control to ensure precise and efficient power distribution.
- Flexible and compatible design: uses hybrid IEC C39 outlets, compatible with standard IEC C14 and IEC C20 server plugs, equipped with anti-drop locking mechanisms. This outlet design significantly simplifies PDU selection and makes IT equipment installation faster and more efficient.

Hybrid (C39) outlets are equipped with an anti-drop locking system capable of securing C14 and C20 plugs, providing a retention force of up to 200 N.

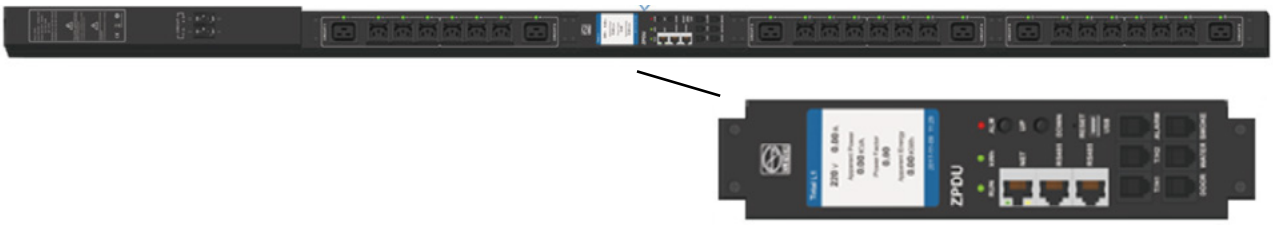
For remote management, MPDU ProX offers the following features:

- Data visualization: thanks to a clear and intuitive graphical interface, key electrical parameters from cabinet level down to individual outlets are visible at a glance. This allows users to clearly understand energy consumption.
- Load analysis: provides real-time power load trend curves and maintains historical data. Users can accurately identify load peaks and drops, optimizing the allocation of power and cooling resources within the data center.
- Remote control: supports multiple remote control options, both for system power-on and for access to newly installed equipment, providing multiple protection layers for final power distribution circuits.
- Efficient integration: the dynamic HTML-based web management interface supports simultaneous multi-user and multi-device access and is compatible with advanced data interaction methods such as active data push, remote RPC calls, Open APIs, MQTT transmission protocol and ODBC, enabling seamless integration into enterprise networks and significantly improving data center operational efficiency.

In response to the rapid growth of artificial intelligence applications, MPDU ProX remains true to its original mission of “empowering IT technology”, delivering outstanding performance and innovative design to safeguard and enhance data center operational efficiency.

Hot-swap smart Module

Smart PDUs
PDU Z

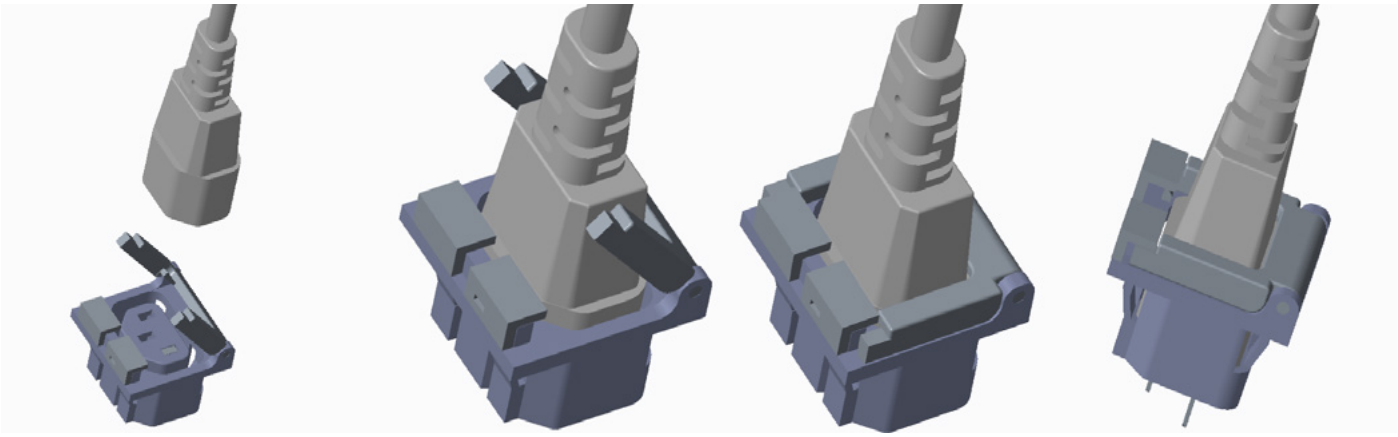


Key features:

- **The Z Series PDU is the most suitable solution for monitoring energy consumption i**

Thanks to its highly optimized electronic design, the Z PDU features one of the lowest power consumption levels among comparable products on the market. Proper use of the Z PDU enables accurate data center monitoring and allows administrators to intervene in real time to perform adjustments and optimizations.

- Evolution of the M Series PDUs, maintaining the same versatility while introducing multiple performance and functional enhancements
- Steel frame that increases robustness and mechanical resistance, protecting the electronics against accidental impacts.



Smart Module specifications:

- Smart Module – Standard Version
  - Hot-swappable controller
  - 1.44” LCD screen
  - 1 × 100 Mbps Ethernet port
  - 3 × RS485 interfaces (for serial connection and daisy-chain)
  - 2 × RJ11 ports (for T/H sensors)
  - 1 × dry contact port
  - Up & Down scroll buttons
  - Control button (enter / confirm)
  - 1 × RUN indicator (power status)
  - 1 × kWh indicator (energy consumption status)
  - 1 × ALM indicator (alarm status)
- Smart Module – Advanced Version
  - Hot-swappable controller
  - 2.8” LCD screen (V, A, kVA, kWh, PF, Hz, temperature & humidity, door, smoke, water)
  - 1 × 100 Mbps Ethernet port
  - 2 × RS485 interfaces (for serial connection and daisy-chain)
  - 5 × RJ11 ports (2 × T/H sensors, 1 × door, 1 × smoke, 1 × water)
  - 1 × ALARM (dry contact) port
  - 1 × USB-A port (for field firmware upgrade)
  - Up & Down scroll buttons
  - 1 × RUN indicator (power status)
  - 1 × kWh indicator (energy consumption status)
  - 1 × ALM indicator (alarm status)
  - Dual-direction installation (upward or downward)

PDU 48Vcc
4+4 MULTI-USER 48VCC SMART PDU - 4RU

4+4 Multi-user 48Vcc SMART PDU can be installed in rack cabinets with 19" (And 21" uprights with adaptation brackets), suitable for redundant power supply of active devices at 48V in DC, with a system for measuring and controlling the supply voltage and the individual absorbed currents.

GENERAL TECHNICAL FEATURES

- Voltage rating 48V DC (positive to ground)
- Current rating 100A
- PDU power supply with two separate disconnectable lines
- Maximum cross-section that can be connected for each supply line 35mm²
- Redundant power supply of 4 devices for 20A nominal current
- Maximum section that can be connected for each device 6mm²
- Fuses holders for fuses dimensions 10.3x38mm
- Fuse disconnect switches with In=100A for load isolation of 22x58mm cylindrical fuses
- Direct current measurement and control system
- Up to 15 multi-user PDUs can be monitored (master, slave1.....slave15)
- Supervision system with MODBUS-TCP protocol over Ethernet
- Operating temperature 0...+40 °C
- Enclosure made of RAL 7035 painted steel
- IP20 degree of protection
- Dimensions (HxWxW) 180x181x484

PDU 48Vcc
8+8 MULTI-USER 48VDC SMART PDU - 3RU

8+8 Multi-user 48Vcc SMART PDU can be installed in rack cabinets with 19” (And 21” uprights with adaptation brackets), suitable for redundant power supply of active devices at 48V in DC, with a system for measuring and controlling the supply voltage and the individual absorbed currents.

GENERAL TECHNICAL FEATURES

- Voltage rating 48V DC (positive to ground)
- Current rating 100A
- PDU power supply with two separate disconnectable lines
- Maximum cross-section that can be connected for each supply line 35mm²
- Redundant power supply of 8 devices for 16A nominal current
- Maximum section that can be connected for each device 6mm²
- Fuses holders for fuses dimensions 10.3x38mm
- Direct current measurement and control system
- Up to 8 multi-user PDUs can be monitored (master, slave1.....slave7)
- Supervision system with MODBUS-TCP protocol over Ethernet
- Operating temperature 0...+40 °C
- Enclosure made of RAL 7035 painted steel
- IP20 degree of protection
- Dimensions (HxWxW) 139x181x484 mm

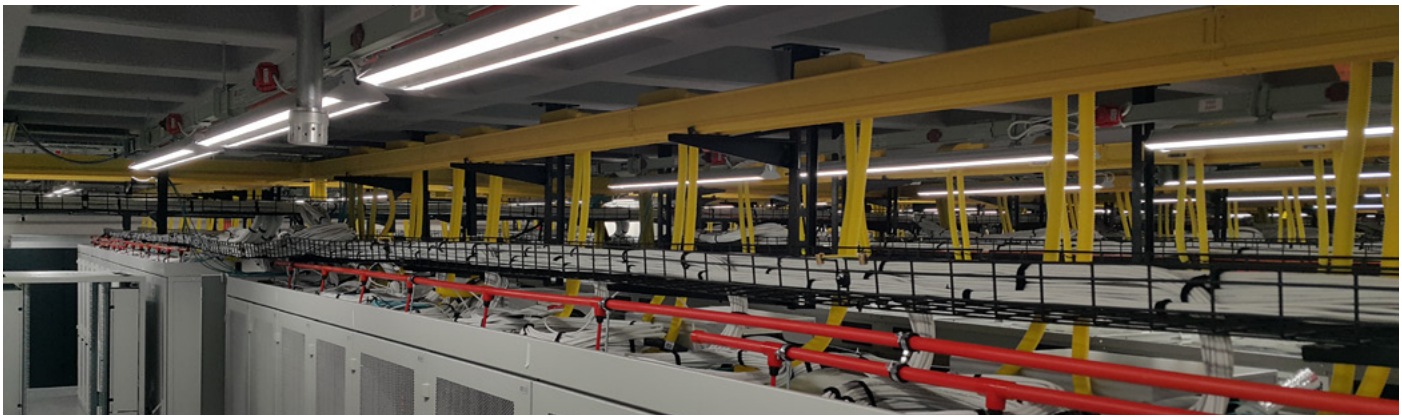
Sensors for all PDU's categories

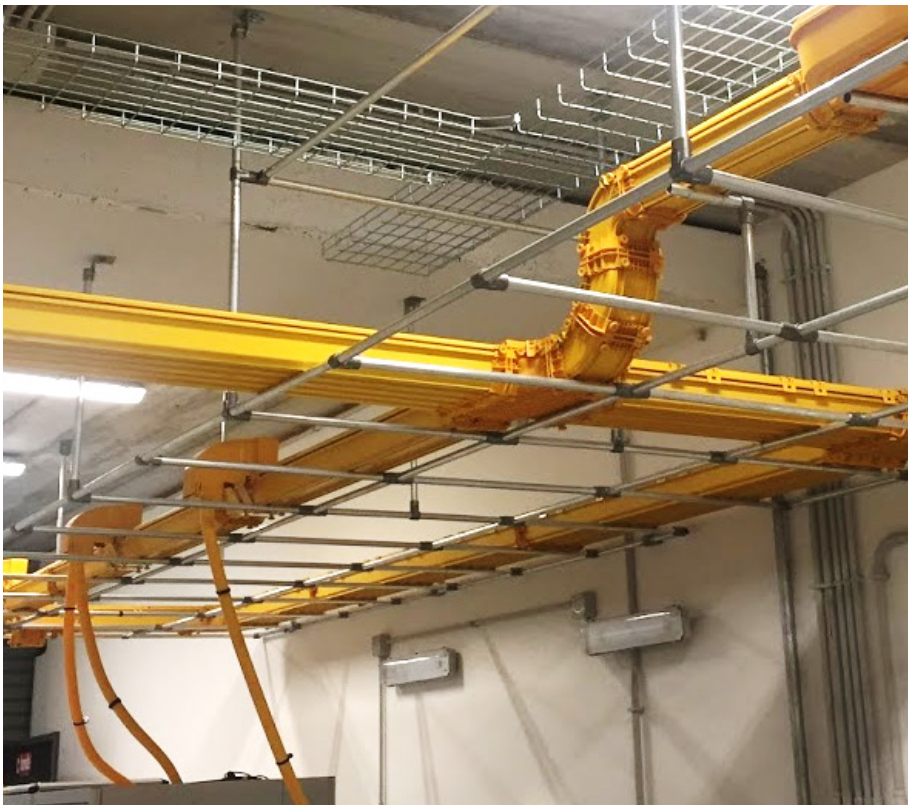
Sensors are compatible with single-phase and three-phase PDUs operating at 230V and 380V.

Cable Duct

The CABLE DUCT optical cable duct is a system designed to protect and route fiber optic patch cables, cable assemblies to and from guide enclosures, ODFs, and other terminal devices.

- The Cable Duct offers ideal solutions for optical duct requirements and applications with an attractive appearance and easy maintenance.
- Flame-retardant materials with a flammability rating of V0.
- The components can be mounted without tools and boast quick and easy installation with a snap-on lid, hinged lid option, and quick exits.
- Dimensions range from 2” x 2” to 4” x 12”.





In-row
Electrical Panel

The In-row Electrical Panel is the safest method for providing distributed, highly efficient, and scalable power in applications and architectures that present standard critical issues.

The In-row Electrical Panel is a scalable single-phase and three-phase distribution system that allows the hot replacement of switches if necessary.

"Hot" replacement must be carried out only by competent and adequately trained personnel.

A display mounted on the front door allows the electrical parameters (V, A, kW) of the various phases to be monitored.

The In-row Electrical Panels are designed to power the PDUs (Distributed Power Units) mounted in the rack cabinets and the air conditioning units in a redundant manner.

The power supplies provided are, depending on requirements, either single-phase (1P+N+E) or three-phase (3P+N+E).

Server rack protection. Aerosol generator Fire extinguisher:

System Description

Fire Fighter is a stand-alone fire detection and extinguishing unit for server racks. Ideal for the modular protection of one or more server racks and/or telecommunications cabinets, the system consists of a master control and command device and a slave detection/ extinguishing unit.

Fire Fighter features two fire detection technologies and a Fire Kloud condensed aerosol extinguishing system.

System Composition

The Master module is a complete interface, housed in a 3U-high 19” rack, complete with control logic, power supply unit, backup batteries, and display/control panel.

The Slave detection and extinguishing module is equipped with two smoke sensors, a heat-sensitive cable, a Fire Kloud aerosol generator, and inputs/outputs for command and remote management.

Secondary Slave modules with master/slave logic are also available for subsequent cabinets, and optional aerosol generators for protecting cold/hot aisles in data centers.

Cooling Solutions
In-row Systems Vs. Traditional Systems

In partnership with Ethra Tech, Out Line has developed a stand-alone in-row air conditioner available in two versions:

• direct expansion, air-cooled;
• chilled water with an air-to-water exchanger.

Both versions are ideal for installation in a rack or in a compartmentalized island to maximize energy efficiency.
In the direct expansion version, temperature regulation is achieved by varying the air conditioner's capacity using the inverter technology (variation of the compressor's rotation speed).
Process air is distributed in two distinct modes:

. hot aisle/cold aisle (F model)
. internal rack recirculation (SX / DX / SD models)

In the case of a hot aisle/cold aisle, the in-row air conditioner operates by drawing in hot air at the rear of the air conditioner and expelling cooled air at the front.

In the case of internal recirculation within the rack cabinet, the mode involves extracting hot air directly from inside the rack cabinet and expelling the cooled air from the front interior of the rack cabinet.

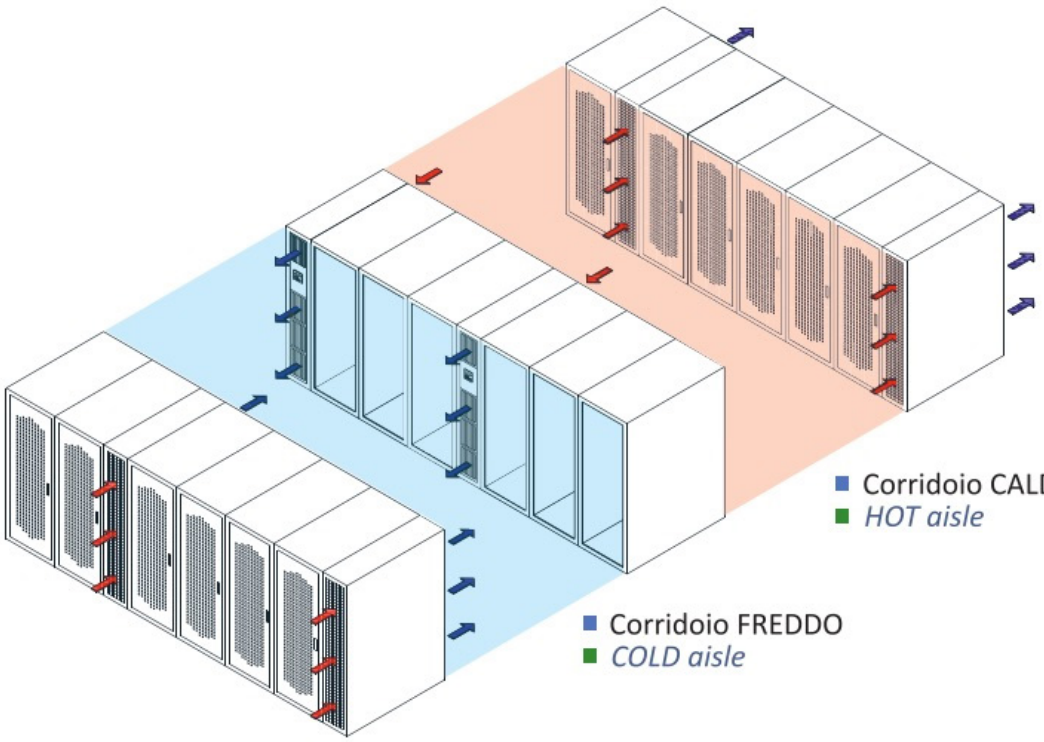
Both versions are equipped with an internal controller, which monitors and manages the entire cooling process and the operation of the air conditioner.

The precision controller (PLC) continuously monitors all physical quantities that minimize energy consumption based on heat needs, regulating the rotation speed of the mechanisms (fan motors and compressor).

The machine is also equipped with a user interface panel that, upon request, can be remotely controlled to monitor the CDZ's operation and receive any malfunction alarms.

Cooling solutions
Batteries of racks and islands

In-row solutions with cold isle and hot isle



COLD ISLE

HOT ISLE

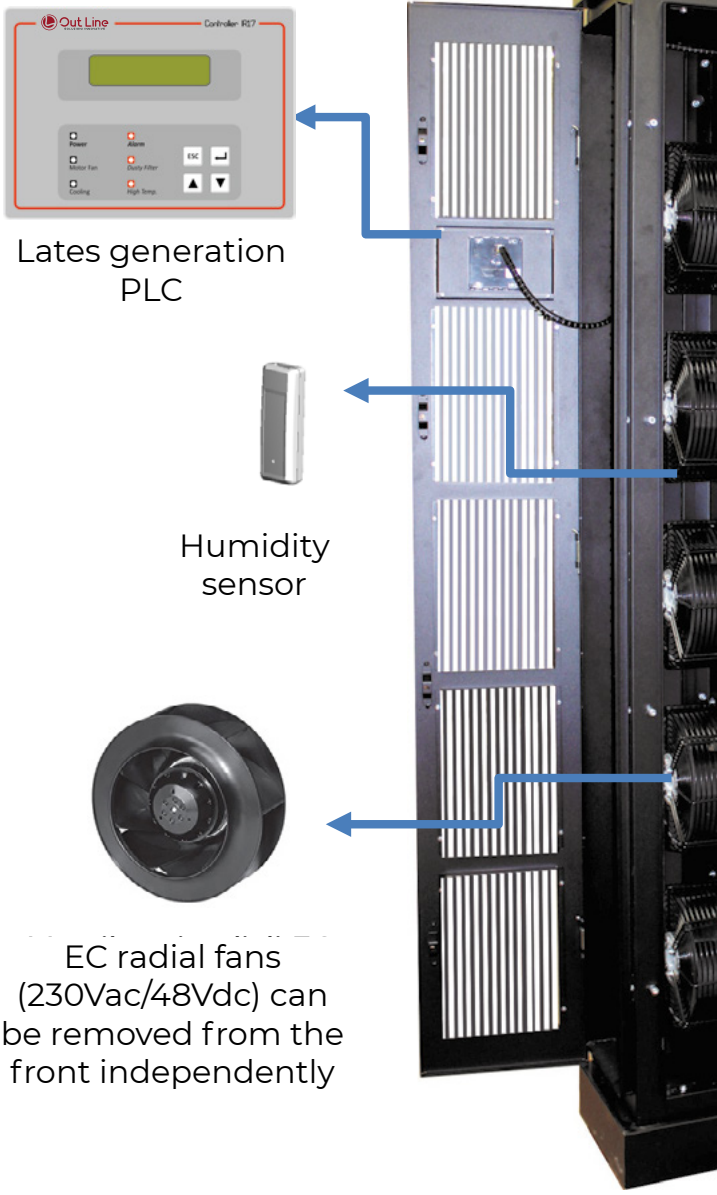
EDGE DATACENTER: ONE RACK COOLED BY TWO REDUNTANT IN-ROW COOLERS

In-row air conditioning systems
Main characteristics

Advantages

The IN-ROW solution allows you to direct cold air:

- Only where it is needed;
- Only when it is needed;
- Only as much as needed.



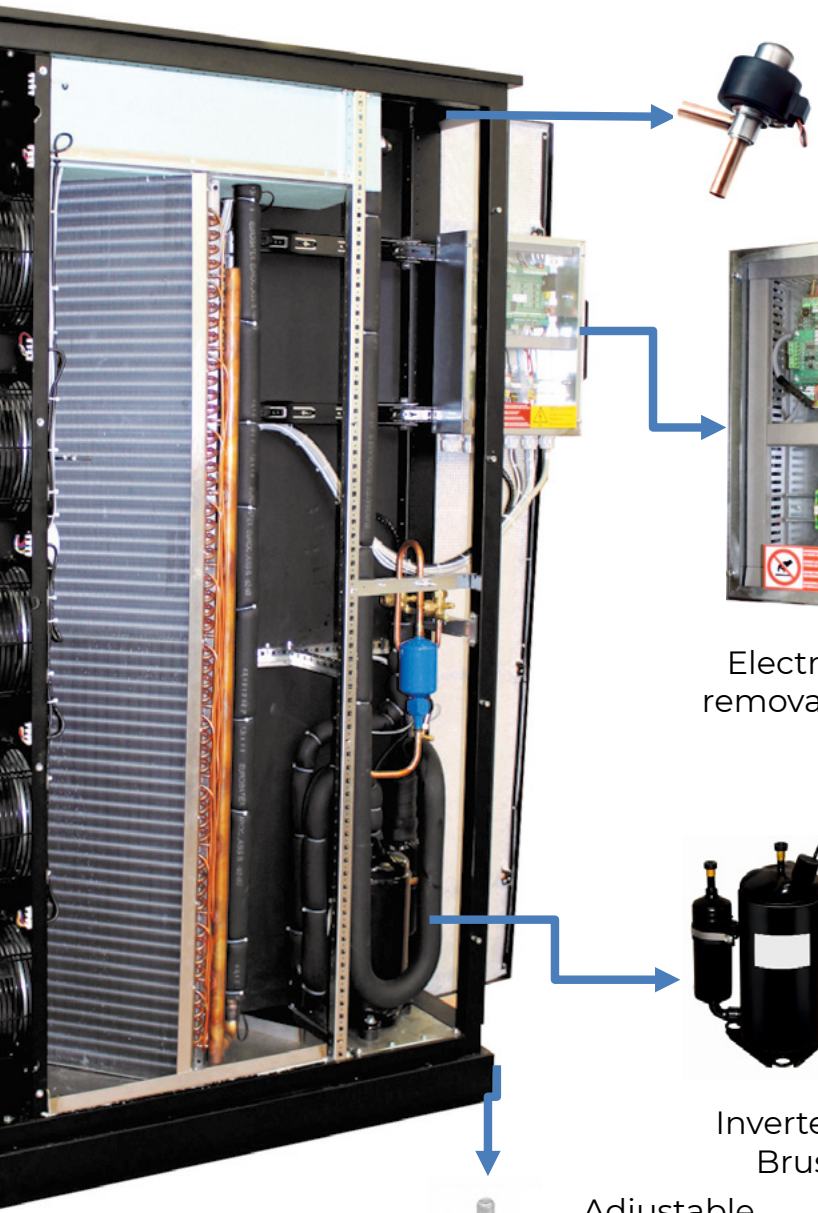
Lates generation PLC

Humidity sensor

EC radial fans (230Vac/48Vdc) can be removed from the front independently

Accessories

- Indirect water-based free-cooling;
- Condensate drain booster pump;
- Flood sensor for technological room;
- Electric heating;
- Height adapter plinth for raised floor.



Electronic
expansion valve

Electrical panel fully
removable with handle

Inverter compressor -
Brushless motor

Adjustable
feet

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Contact us for more information

The Out Line team is available to help you in choosing
the best solutions for your Data Center
and to provide dedicated technical support.

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Rely on Out Line:
innovation and expertise of service
to your network infrastructure.