

IT COOLING

ROOM COOLING



RCWALL

Chilled water air conditioner for Large Datacenter

From 78 to 418 kW

RCWALL



- Family overview
- System and target
- Main components
- Performance
- Operating limits
- Optional accessories
- Control system
- How to sell

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Family overview



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System and target - Application

1. Ideal for **Hyperscale** and **Colocation** data centers
2. Recommended for requests with a high degree of **customization**

System and target – Main advantages



Raised floor not needed

- ✓ The absence of raised floor **reduces costs** and **routine maintenance**



Lower initial cost per kW

- ✓ **Reduced initial costs** compared to traditional solutions due to product design



Modular design

- ✓ With **stackable** modules



Full frontal accessibility

- ✓ To main components from suction side



Connection flexibility

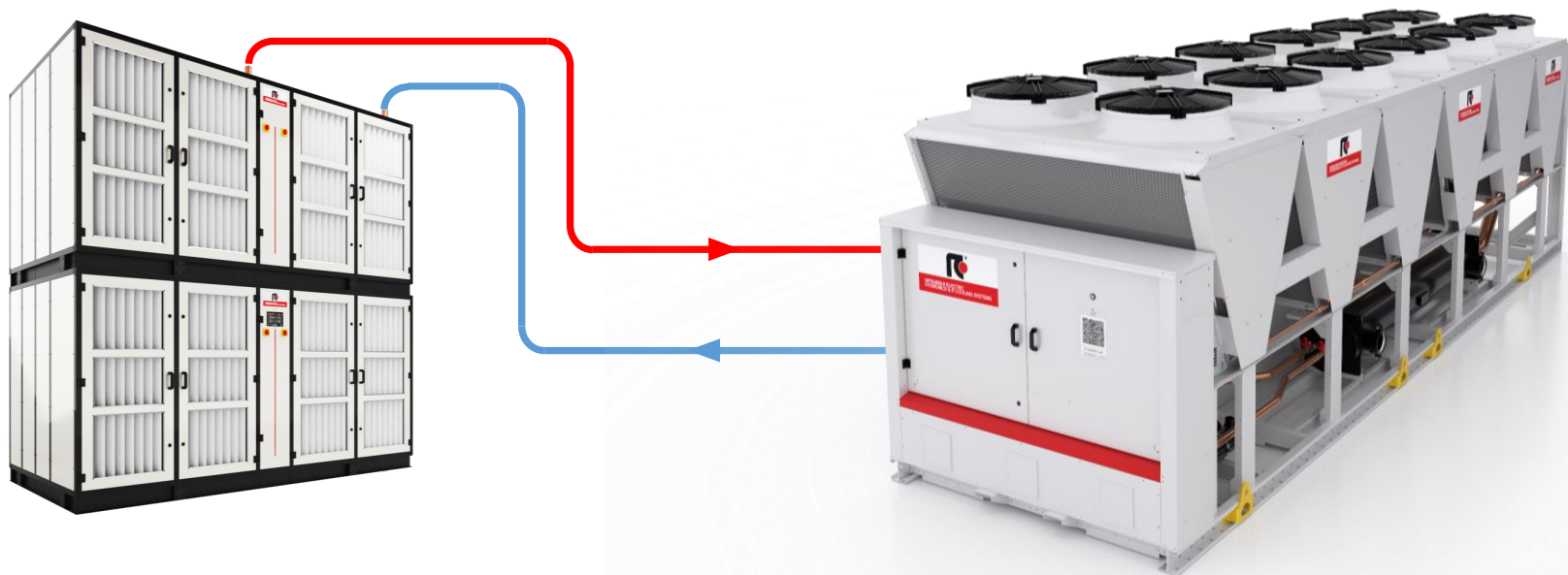
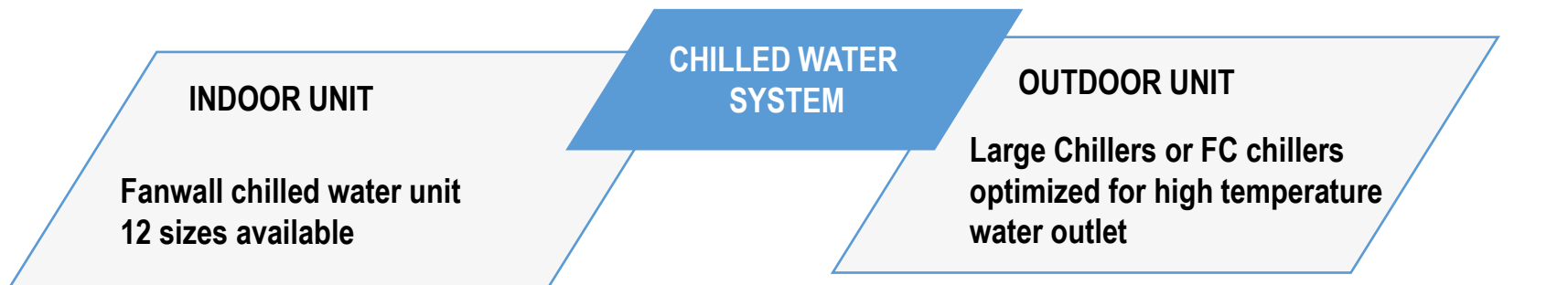
- ✓ Top and side hydraulic connections are available to **match the needs** of the plant



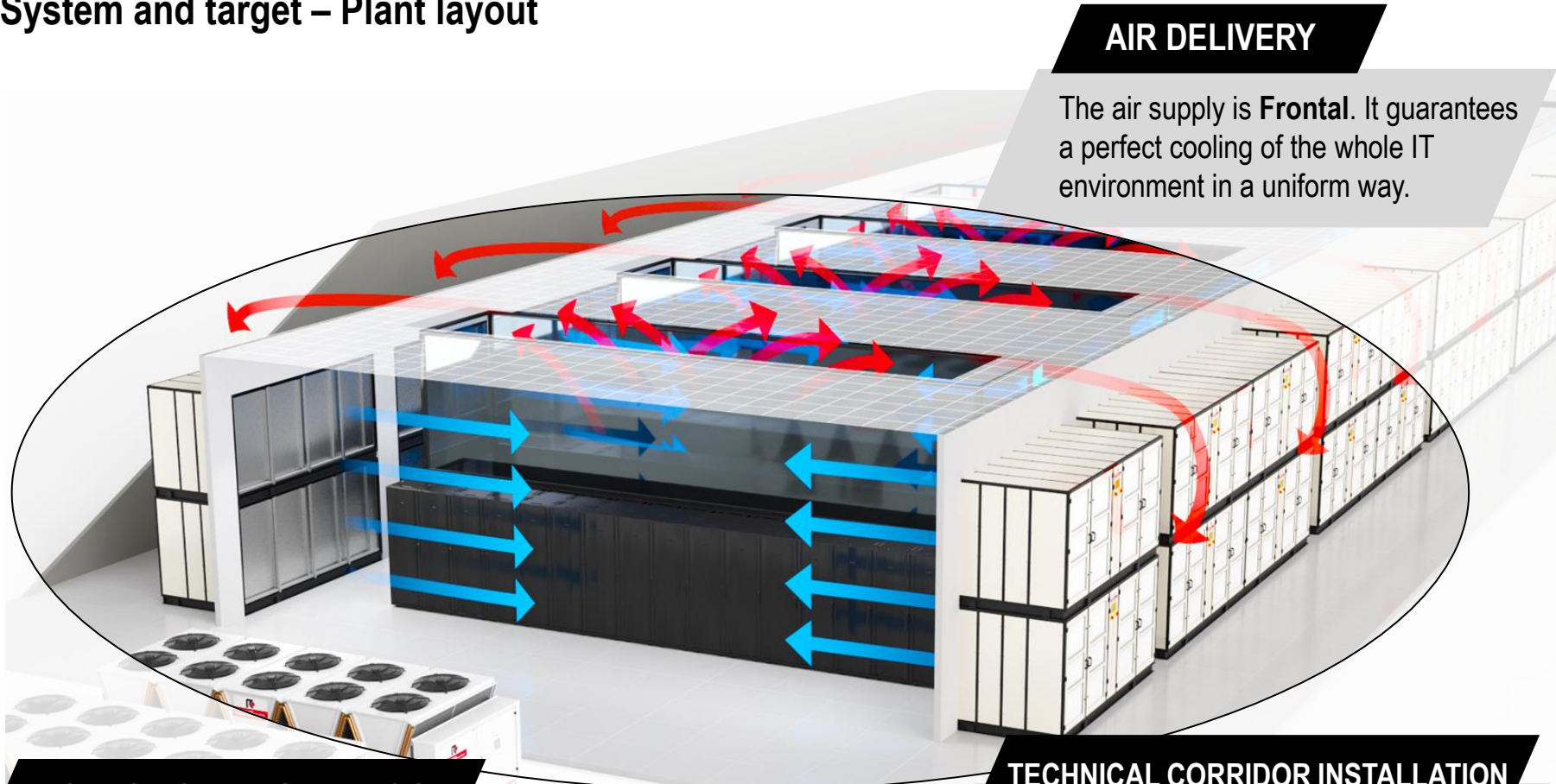
More room available for equipment

- ✓ The positioning of the units in the technical corridor allows to have **more usable space** for the server racks

System and target - coupling



System and target – Plant layout



AIR DELIVERY

The air supply is **Frontal**. It guarantees a perfect cooling of the whole IT environment in a uniform way.

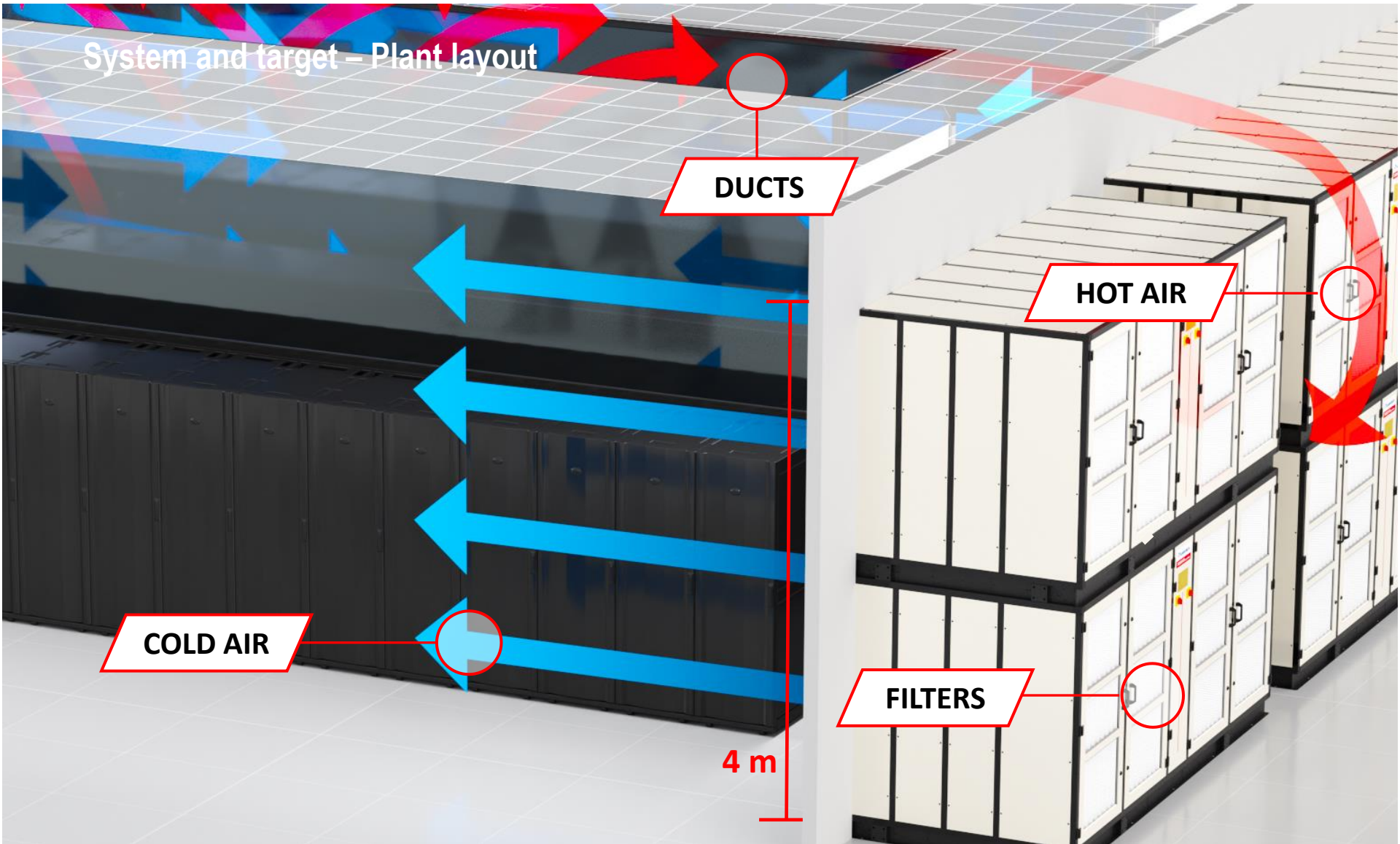
ABSENCE OF RAISED FLOOR

Thanks to the frontal air delivery it is not necessary to provide a raised floor

TECHNICAL CORRIDOR INSTALLATION

Installation of the units in the technical aisle **facilitates maintenance** and **increases available space** for server racks

System and target – Plant layout



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Main components

Fins & Tube coil with large heat exchange surface, designed to ensure low pressure drops

Magnetic Lamp for a simple and useful inspection and maintenance

Foamed panels that guarantee thermal, and acoustic insulation and air tightness

EC plug fans Fully accessible, optimized to work with high volumetric flow rates. The number of fans per single unit varies from **2 up to 8**

Very strong frame, tested to fall from a height of 30 cm and provided with holes for handling the unit

Modulating 2-way valve with regulation through a 0-10 V signal

Large filtering surface area designed to ensure low pressure drop and high aeraulic efficiency



Main components

EC - Plug Fan

- Wing profiled, single suction with composite material impeller
- Fans speed control with proportional signal via Modbus
- Available external static pressure from 50 Pa up to max ESP adjustable with air flow rate



■ **Variable speed drive**

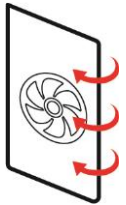
■ **Extreme reliability and durability**

■ **High efficiency motor**

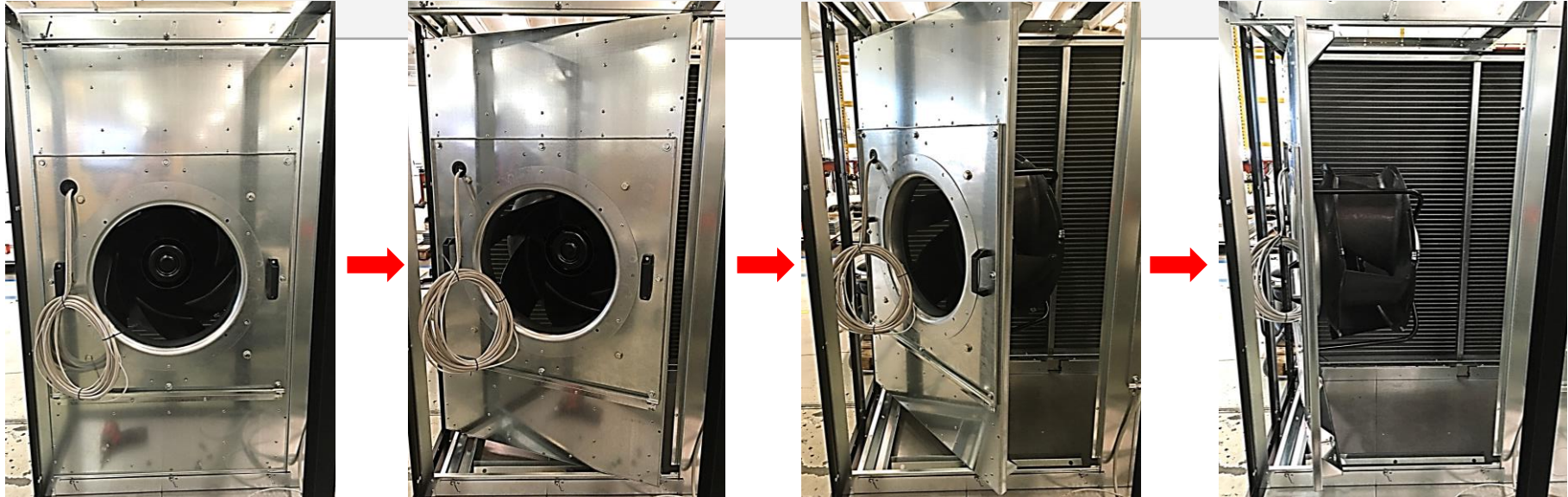
Main components EC - Plug Fan



UP AND OVER FAN PANEL



Patent pending solution that permit **full front accessibility**
allowing easy maintenance to fans and coil



Main components

Heat exchanger

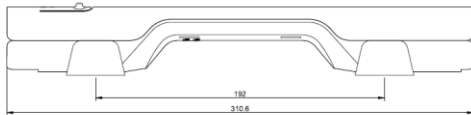
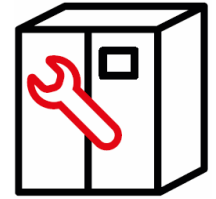


Fins & Tube heat exchanger

- Availability to **customize** the Heat exchanger
- **Optimized** for high Temperatures & high delta T air and water side
- Designed to ensure low pressure drops
- Very **high** exchange surface

Main components

Magnetic Lamp



Magnetic lamp supplied as **standard**

Thanks to the magnetic attachment
you can place it in **any position**.
Perfect for quick and **easy
maintenance**

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Performance

MODEL	081	091	131	151	201	231
TOTAL COOLING CAPACITY* [kW]	77.7	89.2	131	142	198	209
EER	17.2	16.4	15.9	17.1	17.8	18.8
COOLING POWER DENSITY [kW/m]	43.17	45.56	48.52	52.60	55.00	58.06
HEIGHT [mm]	1750	2000	1750	2000	1750	2000
DEPTH [mm]	1600					
LENGHT [mm]	1800	2700		3600		

*Air condition 37°C 25% RH, Water 20°C inlet / 30°C outlet

Performance

MODEL	162	182	262	302	402	462
TOTAL COOLING CAPACITY* [kW]	155	178	262	283	397	418
EER	17.1	16.0	15.9	17.0	18.0	18.9
COOLING POWER DENSITY [kW/m]	86.10	98.89	97.03	104.8	110.3	116.1
HEIGHT [mm]	3500	4000	3500	4000	3500	4000
DEPTH [mm]	1600					
LENGHT [mm]	1800	2700		3600		

*Air condition 37°C 25% RH, Water 20°C inlet / 30°C outlet

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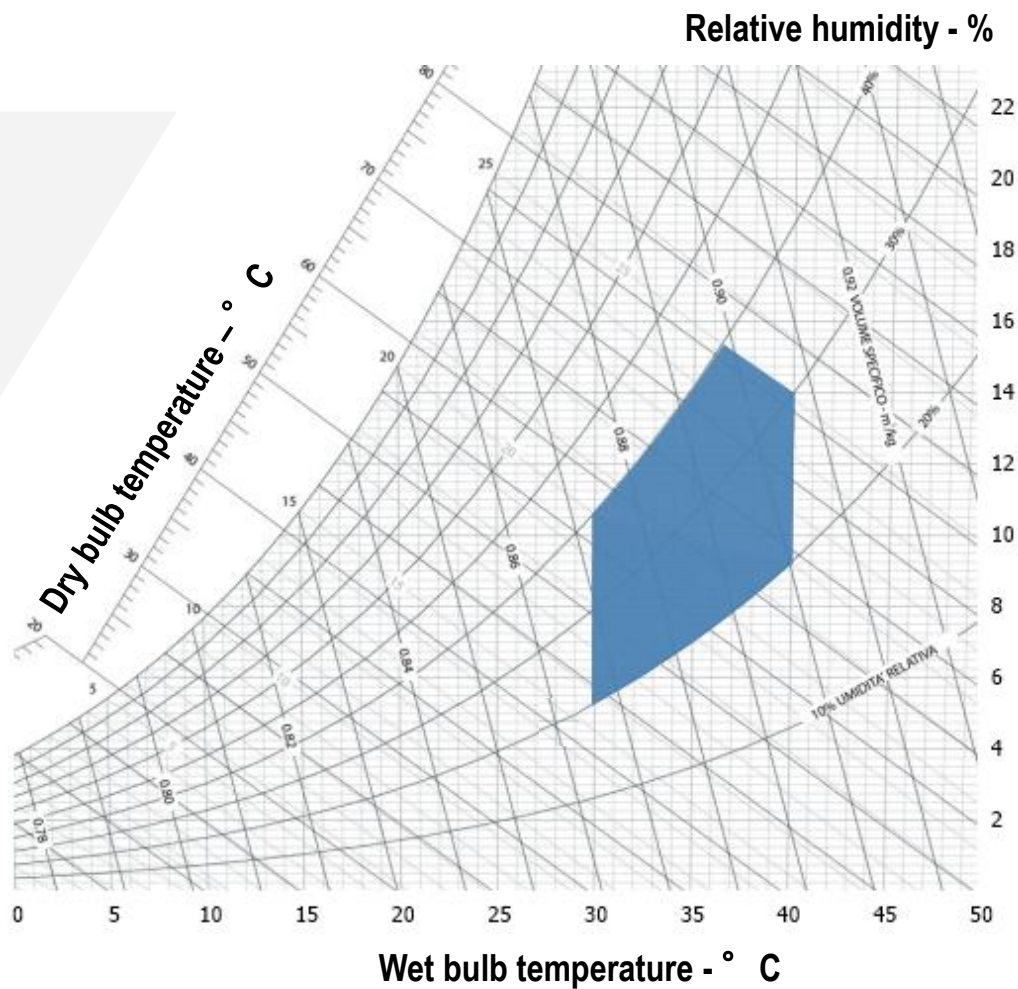
Optional accessories

Control system

How to sell

Operating limits

Designed to work with **high**
return air **temperatures**



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Optional accessories

Option code: B806 – B807 – B803



2-way valve with electronic control (EPIV)

- 2-way ball valve with electronic control of flow rate that ensures **precise** and reliable **modulation**.
- Thanks to the flow meter the regulation is **independent** from the **pressure**.

Opt. B807

Standard 2-way ball
electronic independent
pressure valve (EPIV)

Opt. B809

2-way ball with **modbus**
connection that permit to
read the **Real-Time flow**
rate and Cooling Power

2-way valve 0-10V

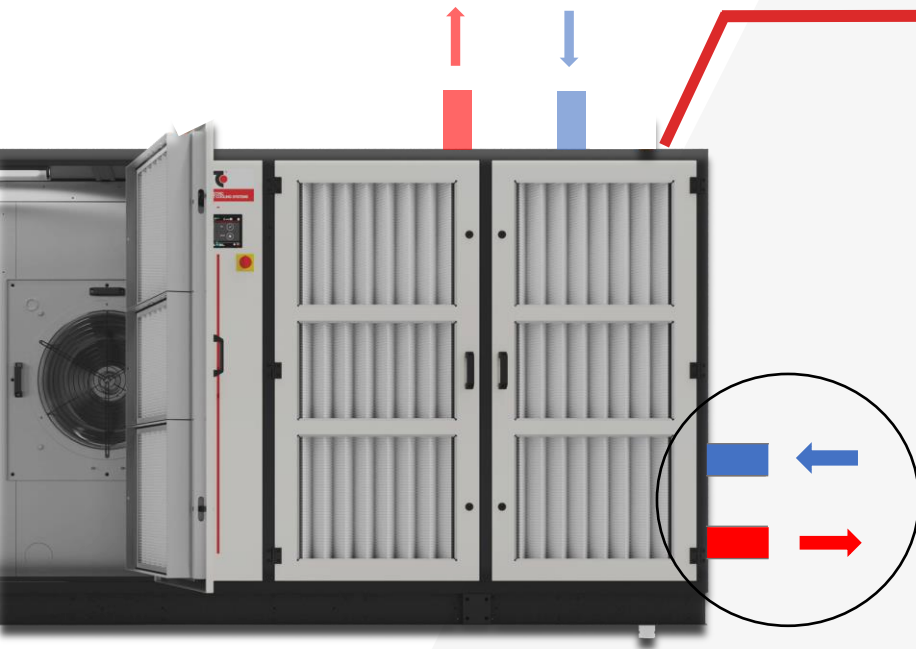
- 2-way valve with flow rate modulation through 0-10V signal
- The actuator has a button for manual emergency operation and is maintenance-free

Opt. B806

Standard 2-way valve with 0/10 V
signal regulation that included a
spring return for increase the
safety



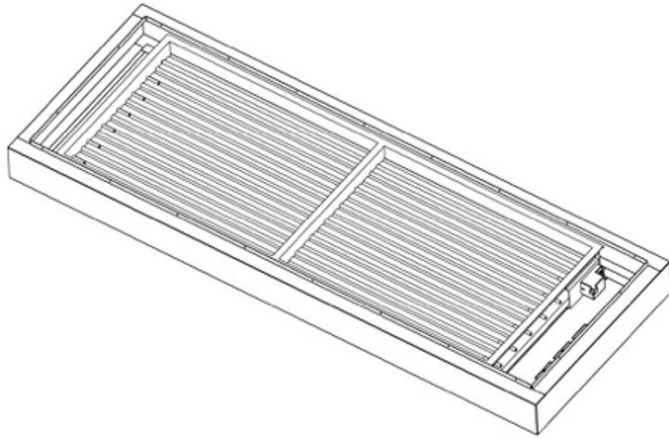
Optional accessories - Lateral Hydraulic connections (opt. 2961)



Hydraulic connections with side connections to make the unit more **flexible** for different water piping layouts

Optional accessories

(opt A531, P011)



Dampers & Plenum

1. Non-return dampers **prevent** unwanted airflows against the intended airflow direction when the system is not in operation

2. To facilitate the requests it is possible to **customize** the coupling between damper and plenum.

Optional accessories – KIPLink technology (6196)



KIPLink: LOCAL and REMOTE MONITORING FUNCTIONS

Monitor and control the unit from a LAN device (PC, laptop, mobile phone) with a simple web browser

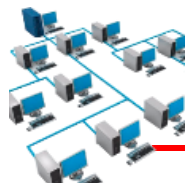
1 PROXIMITY SMART KEYBOARD
WI-FI

Available via MEHITS APP

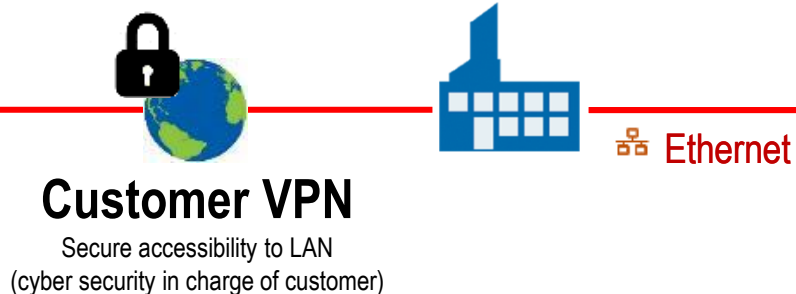


3 REMOTE FROM ANYWHERE

Same as LOCAL via VPN



2 LOCAL MONITORING LAN via TCP/IP



Optional accessories – Touch display (opt. 6195)



- ✓ **7" Touch-Screen** graphic display with 16.7 million colors
- ✓ The Display is equipped with a MicroUSB port for the service connection
- ✓ **Quick and intuitive** navigation
- ✓ **Multi-language** choice

Optional accessories



Dual power supply

The motorized switches ensure the automatic on-load switching of two three-phase supply networks.

Water leakage detector

The system includes an electronic relay installed in the electrical panel of the unit and a water detector.



Clogged filter sensor

The system includes a differential pressure switch installed in the electrical panel or in the front of the indoor unit and the plastic hoses for the relief of the pressure upstream and downstream the air filters.

Temperature probe on air return/delivery

The unit is equipped with a combined temperature / humidity probe on the air intake, used for adjustment, and a NTC probe on the air delivery.



Optional accessories

Remote display K200

The remote kit allows you to install the display at up to 50 m from the unit.



Remote T/RH probes

It is possible to equip the unit with 4 additional remote T/RH probes that the customer can install in particular positions of the server room of his choice.



Fast restart (UPS included)

Backup battery for the microprocessor provided to compensate for power failure in order to avoid system reboot



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Control system



✓ The unit is equipped with the controller connected to a 6 keys **keyboard** display or Touch screen

✓ The controller disposes of a “**flash**” **memory** that preserves the information even in absence of power supply.

✓ **Management** of LAN network up to 15 modules

✓ Enables communication with the **modern buildings BMS** systems with the following protocols: MODBUS, LON, BACNET MS/TP RS485, BACNET OVER IP

Control system – LAN connectivity



LAN FUNCTIONS

- LAN network **up to 15 modules**: each unit with the same software version
- **Balance operating hours** among the different module by rotating the reserve unit (Stand-by)
- **Turn-on the reserve module in case other modules off** due to alarm, maintenance or power feed interruption
- **Turn-on reserve module to offset the excessive thermal load**
- Checking up to 10 modules with a single user terminal (shared user terminal)
- Through the **active redundancy** it is possible to divide the thermal load between the single modules increasing the efficiency of the whole system in favor of **energy saving**

ACTIVE REDUNDANCY



PASSIVE REDUNDANCY



Control system – Group system control

System solutions for the entire IT cooling system: RCWALLs and CHILLERs

HP C

Hydronic Plant Connect



clima
PRO+
● PERFORMANCE ● RELIABILITY ● OPTIMISATION



Exploits **proprietary** LAN technology to connect Chillers' and Fanwalls' groups

ARCHITECTURE

Completely custom designed to be connected to every Chiller and Fanwall

Completely Integrated in the units

PHISICAL DEVICE

Devoted cabinet with 19" touch display

Optimization of the entire cooling system: Fanwalls, Chillers, FC availability, fans, pumps, valves

FUNCTION

Full control and monitoring, **advanced and real time optimization based on unit performance curve**

Light solution for **Medium** data centers with simple cooling plant scheme

APPLICATION

State of the art solution for **Large and Hyperscale data centers** also with complex cooling plant scheme. Ideal for **TIER III – TIER IV data centers**

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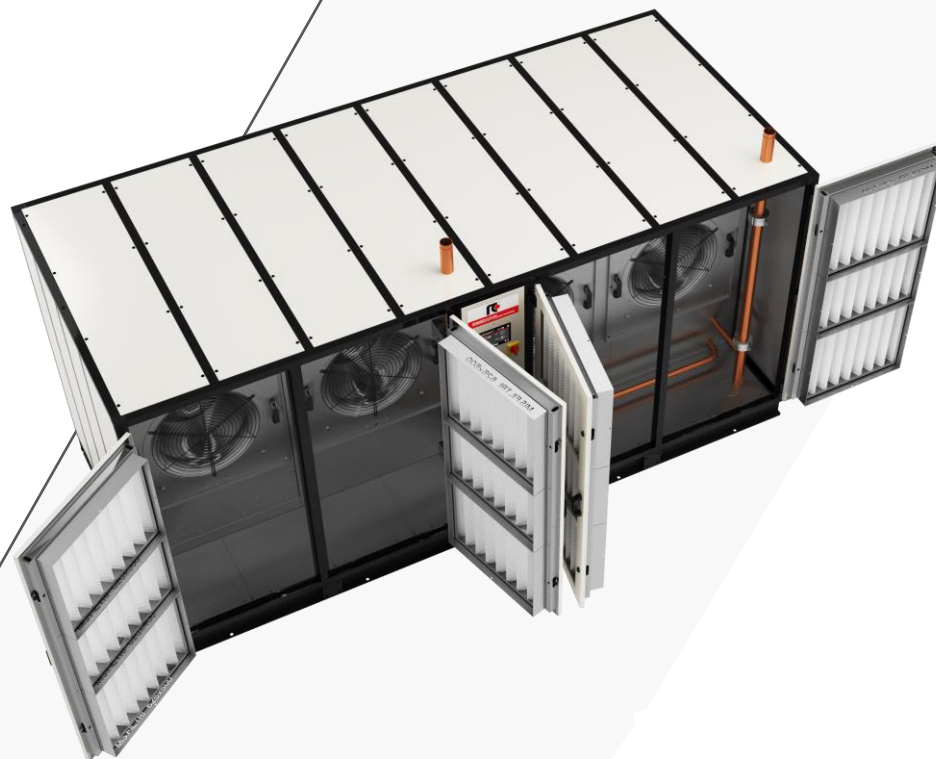
 **HIGH TEMPERATURE**

 **VAR. AIR FLOW**

 **RADIAL-EC**

UNIT SELLING POINTS

- **High level of customization**
- Easy installation and maintenance
- **KIPLink** optional
- **7' Touch screen** display optional
- Flexibility: Lateral hydraulic connections
- HPC and ClimaPRO+ available



*full load, Air condition at 24°C 45% RH, 45°C condensation

How to sell

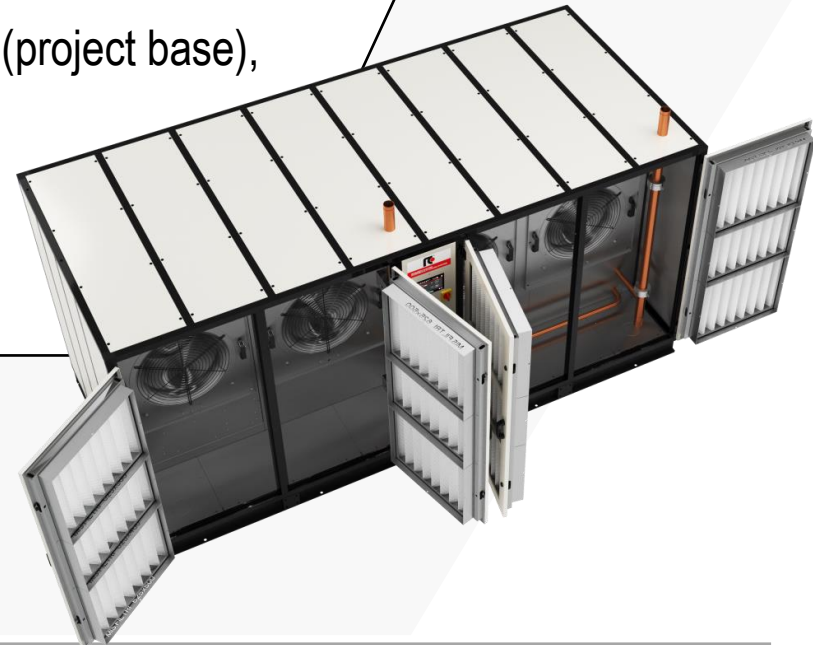
 **HIGH TEMPERATURE**

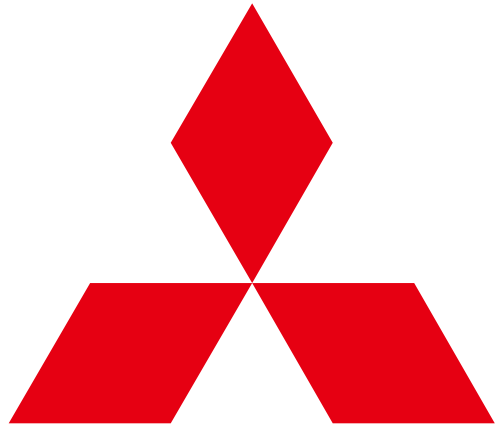
 **VAR. AIR FLOW**

 **RADIAL-EC**

HOW TO SELL

- **Hyperscale & Colocation** Datacenter (> 5 MW)
- Major DC players (Amazon, Google, NTT, Digital Realty...)
- Custom approach, design and quotations on request (project base), tailored solution
- Coupling with **FC chiller**





**MITSUBISHI
ELECTRIC**

Changes for the Better