

DATA CENTRE SOLUTION

Innovation for future

ROCCHEGGIANI[®]
care for air

Exponential Demand vs. Environmental Footprint

Cooling Management The Green Path to AI Solution for Sustainability



The Green Path to AI

A Low-Carbon future in IT Cooling



Roccheggiani offers **increasingly innovative** and **qualitatively evolved solutions**.

- high energy-efficiency
- reduced environmental impact
- total Life Costing approach

Complete offer for Large Scale Application

Cooling System Control Heat & Smoke

Roccheggiani Solution for Sustainability:

The Green Path to AI

- Design Support
- Project Development
- Customer Service

Cooling Management

- Full Packaged Integrated System
- Indirect Evaporative Cooling Packaged Units

Ventilation and Humidity Management

- R-1234ze Low-GWP Free Cooling Inverter Screw Chillers
- FanWall Units
- 100% Fresh Air Units
- Computer Room Air Handler (CRAH)
- Coolant Distribution Unit
- Precision In-Row Cooling Unit

Heat & Smoke Control

- Fire Rated Ductworks
- Smoke Control Dampers
- DuctFire Controls

Chimneys for Power Generator

Flues System – Engineering Division



1 Cooling Management

Full Packaged Integrated System

Roccheggiani Integrated System: Confidence and Reliability

- NRE-CWU Low-GWP R-1234ze Free Cooling Inverter Screw Chillers
- CTA Integrated Chilled Water Air Handling Unit
- Power Integration Room
- Water Storage and Distribution System
- Smart Chilled Water System Control and Optimization
- Remote Monitoring and Diagnostic



**NRE-CWU R-1234ze
Free Cooling**
Inverter Screw Chiller 650 ÷ 1.700 kW

**CTA Integrated
Air Handling Unit**
140.000 ÷ 270.000 m³/h

Water Tank
5.000 ÷ 25.000 dm³

Power Module
ATS – MTS – UPS

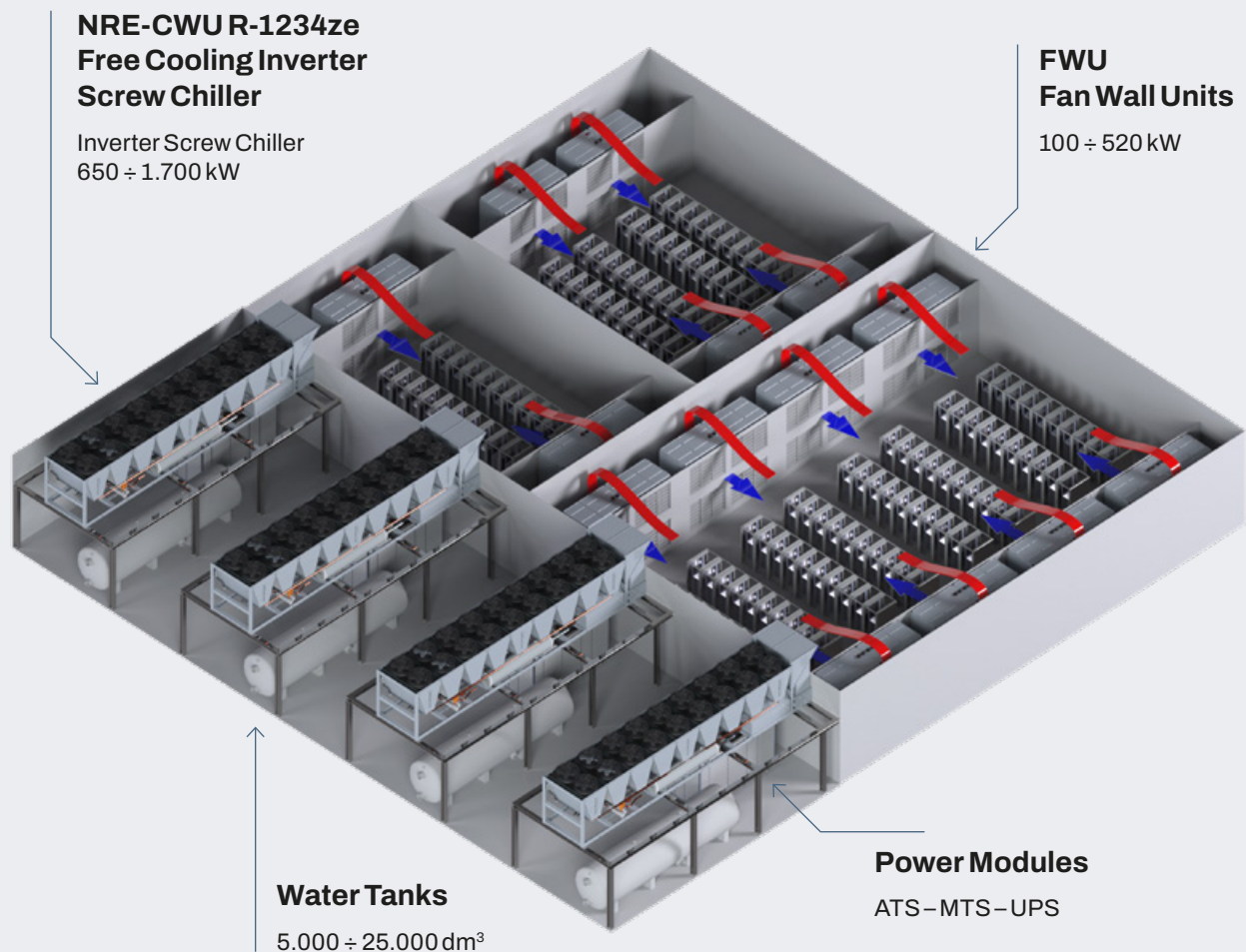
2

Cooling Management

Modular Data Hall Integrated System

Hyperscale Data Hall Side Cooling

- NRE-CWU R-1234ze Low-GWP Free Cooling Inverter Screw Chillers
- FWU FanWall Chilled Water Units
- 200 to 9.360 kW Multimaster Network
- Power Integration Room
- Water Storage and Distribution System
- Smart Chilled Water System Control and Optimization
- Remote Monitoring and Diagnostic



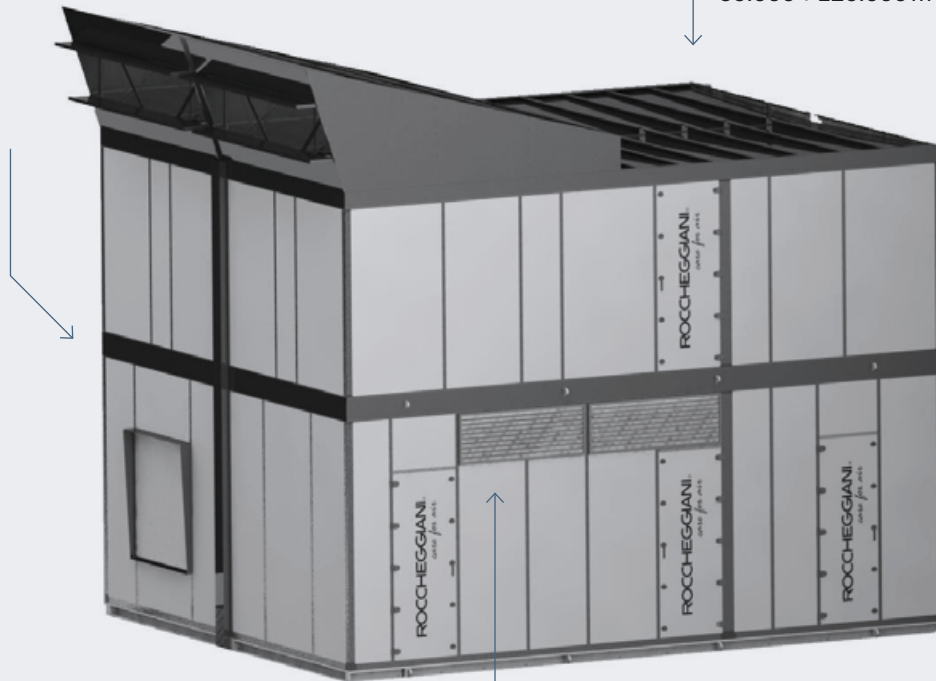
3 Cooling Management Packaged Integrated Unit

All-in-one Packaged Unit

- R-454b or R-1234ze Refrigeration System
- B-Blue Heat Exchanger with Indirect Evaporative Cooling
- Smart System Control and Optimization
- Remote Monitoring and Diagnostic



Power Module
ATS-MTS-UPS



**CTA Integrated
Air Handling Unit**

50.000 ÷ 120.000 m³/h

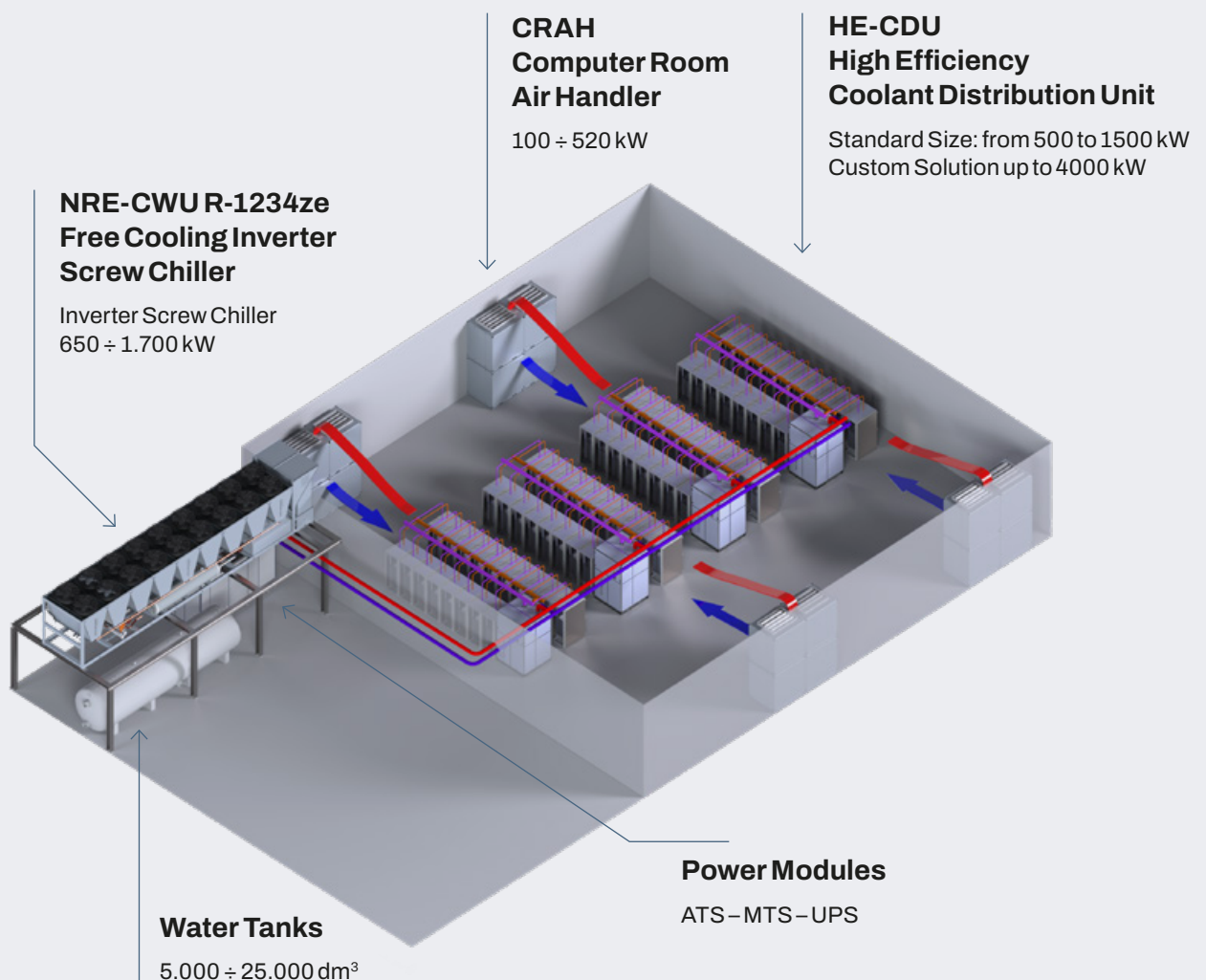
**B-Blue Heat Exchanger
with Indirect Evaporative Cooling**

4

Cooling Management Hyperscale Hybrid Solution

Hyperscale Data Hall Hybrid Solution

- NRE-CWU R-1234ze Low-GWP Free Cooling Inverter Screw Chillers
- FWU FanWall Chilled Water Unit
- High Efficiency Coolant Distribution Unit
- 200 to 9.360 kW Multimaster Network
- Power Integration Room
- Water Storage and Distribution System
- Smart Chilled Water System Control and Optimization
- Remote Monitoring and Diagnostic

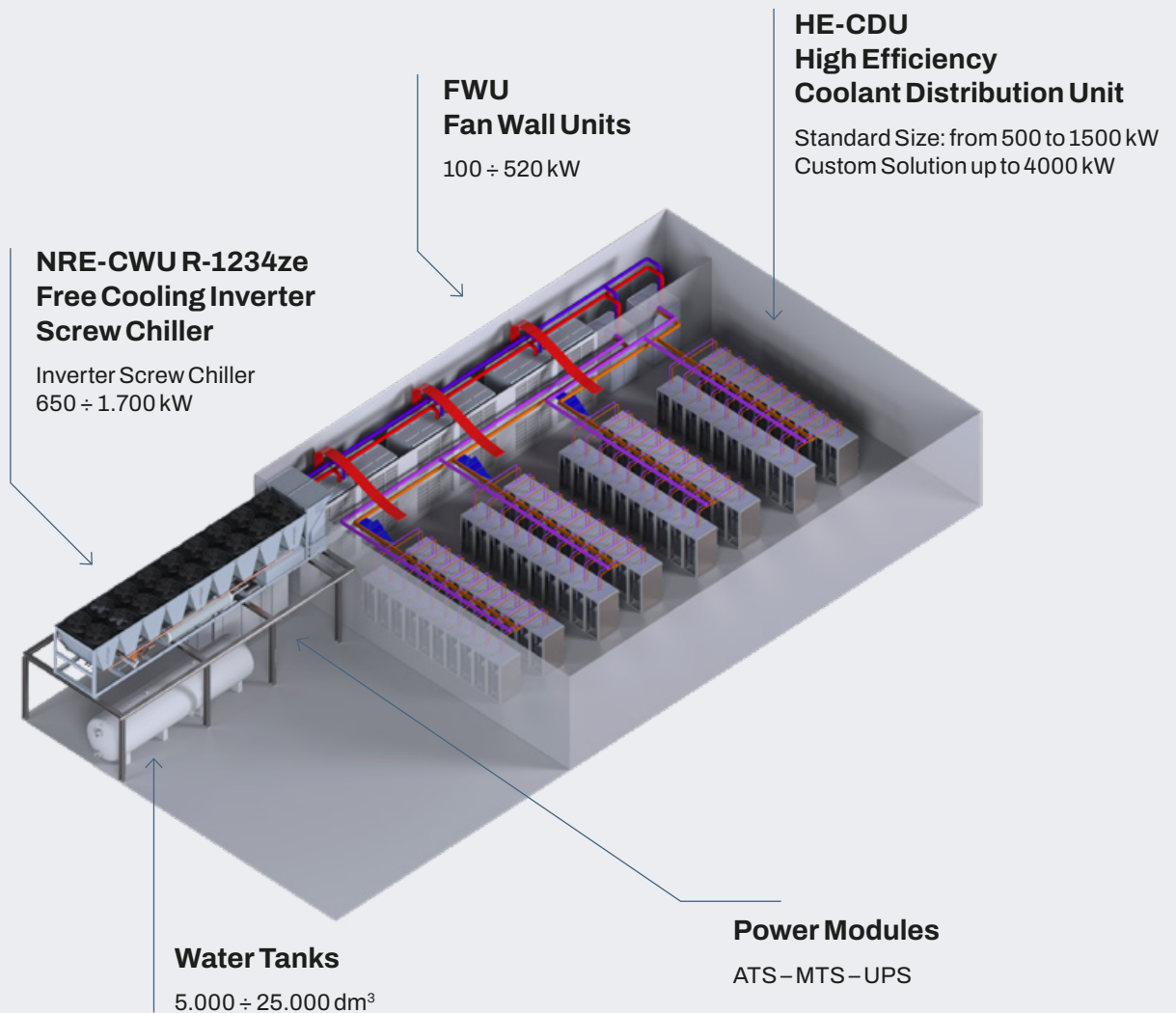


5

Cooling Management Hyperscale Hybrid Solution

Hyperscale Data Hall Hybrid Solution

- NRE-CWU R-1234ze Low-GWP Free Cooling Inverter Screw Chillers
- Computer Room Air Handler (CRAH)
- High Efficiency Coolant Distribution Unit
- 200 to 9.360 kW Multimaster Network
- Power Integration Room
- Water Storage and Distribution System
- Smart Chilled Water System Control and Optimization
- Remote Monitoring and Diagnostic



Cooling Management

Free Cooling Chiller

NRE-CWU

- R-1234ze Low-GWP Free-cooling Inverter Screw Chiller for IT Application
- 11 Sizes 650 to 1.700 kW
- 3 Version: Chiller, Free-cooling, Glycol-free
- Fully Inverter Driven Screw Type Compressor (VFD)
- Low GWP R-1234ze HFO Refrigerant (Global Warming Potential = 7 kg CO₂,eq)
- High Part Load Efficiency
- Fast Restart Functionality
- Variable Flow/Variable Temperature Supply Water Control
- Set point up to 25°C, ΔT up to 12°C
- Harmonic Filter: Built-in active PFC (Power Factor Correction) ensures power factor > 0.97 and THDi < 5%.



Cooling Management

FanWall Units

FWU

- 7 Sizes from 100 to 520 kW
- 2 – 12 Direct-driven IE5 EC Industrial Fans
- Integrated Control with on-board Ultra capacitor UPS
- Cooling Smart Control
- Pressure Independent Energy Valve
- Thermal Energy Meter
- Front Side Easy Maintenance
- Back-draught damper for Fan Failure Continuous Operation
- Multimaster network up to 18 units
- Parametric Construction
- Customized Design according to Customer Specification
- Right/Left Configuration for side-by-side for Space saving In-Row Assembly
- Optional Configuration: Dual Power Automatic Transfer Switch
- Harmonic Filter: Built-in active PFC (Power Factor Correction) ensures power factor > 0.97 and THDi < 5%



Cooling Management

Computer Room Air Handler (R-ACU)

R-ACU

- 7 Sizes from 14 to 520 kW R-ACU(W)
- 7 Sizes from 14 to 105 kW R-ACU(D) - R-ACU(F)
- 1 – 8 Direct-driven IE5 EC Industrial Fans
- Integrated Control with on-board Ultra capacitor UPS
- Cooling Smart Control
- Pressure Independent Energy Valve (R-ACU(W))
- Frequency Converter Driven BLDC Compressor with Electronic thermostatic Valve (R-ACU(D/F))
- Thermal Energy Meter
- Front Side Easy Maintenance
- Airflow configuration: Upflow, Downflow, Displacement
- Multimaster network up to 18 units
- Parametric Construction
- Customized Design according to Customer Specification
- Optional Configuration: Dual Power Automatic Transfer Switch
- Steam Humidifier
- Harmonic Filter: Built-in active PFC (Power Factor Correction) ensures power factor > 0.97 and THDi < 5%



I-RC(W)_30/60

System Types: 300/600mm - 20,6/41,2kW (W20/30°C)

- Front View: Perforated front door (70% permeability) for low-velocity air discharge.
- Touchscreen User Interface (HMI) located at eye level (1.6m).
- Rear View: High-flow intake grille (Hot Aisle capture).
- Side view: Intake openings for Side-by-side combination for complete separation of IT equipment from Data Hall
- Hydraulic Connections (Bottom/Top), Single/Dual power supply input (A+B feeds) optional (Top);
- Units are configured with Top or Bottom pipe entry to suit raised floor or overhead piping busways.
- Harmonic Filtering: Built-in active PFC (Power Factor Correction) ensures power factor > 0.97 and THDi < 5%.

Cooling Management

High Efficiency Coolant Distribution (HE-CDU)

HE-CDU

- 3 Standard Size: 500 kW, 1000 kW, 1500 kW
- Custom Solution up to 4000 kW
- Approach Temperature down to 3°C
- All Coolant distribution system 2x100% or 3x50% duty – stand-by redundancy
- Frequency Converter Driven IE5 motor Close-coupled Pump with Stainless Steel housing and Impeller
- User secondary coolant filtration up to 25µm
- Brazed Plate Heat Exchanger for a complete fluid separation
- Stainless steel Coolant circuit with Expansion tank
- Self-controlled Stainless steel Pressurization system with expansion tank
- Components redundancy as per coolant circuit
- Coolant Temperature control with 2-way PI-CCV Valve
- Coolant flow control with Electromagnetic Flowmeter
- Automation Control with Local Supervisor with Roccheggiani Proprietary Software
- 10" Graphic Terminal Display
- TCP/IP Modbus/Bacnet Communication Protocol
- Primary fluid filtration system (option)
- Integral ATS (Option)
- Harmonic Filter: Built-in active PFC (Power Factor Correction) ensures power factor > 0.97 and THDi < 5%.

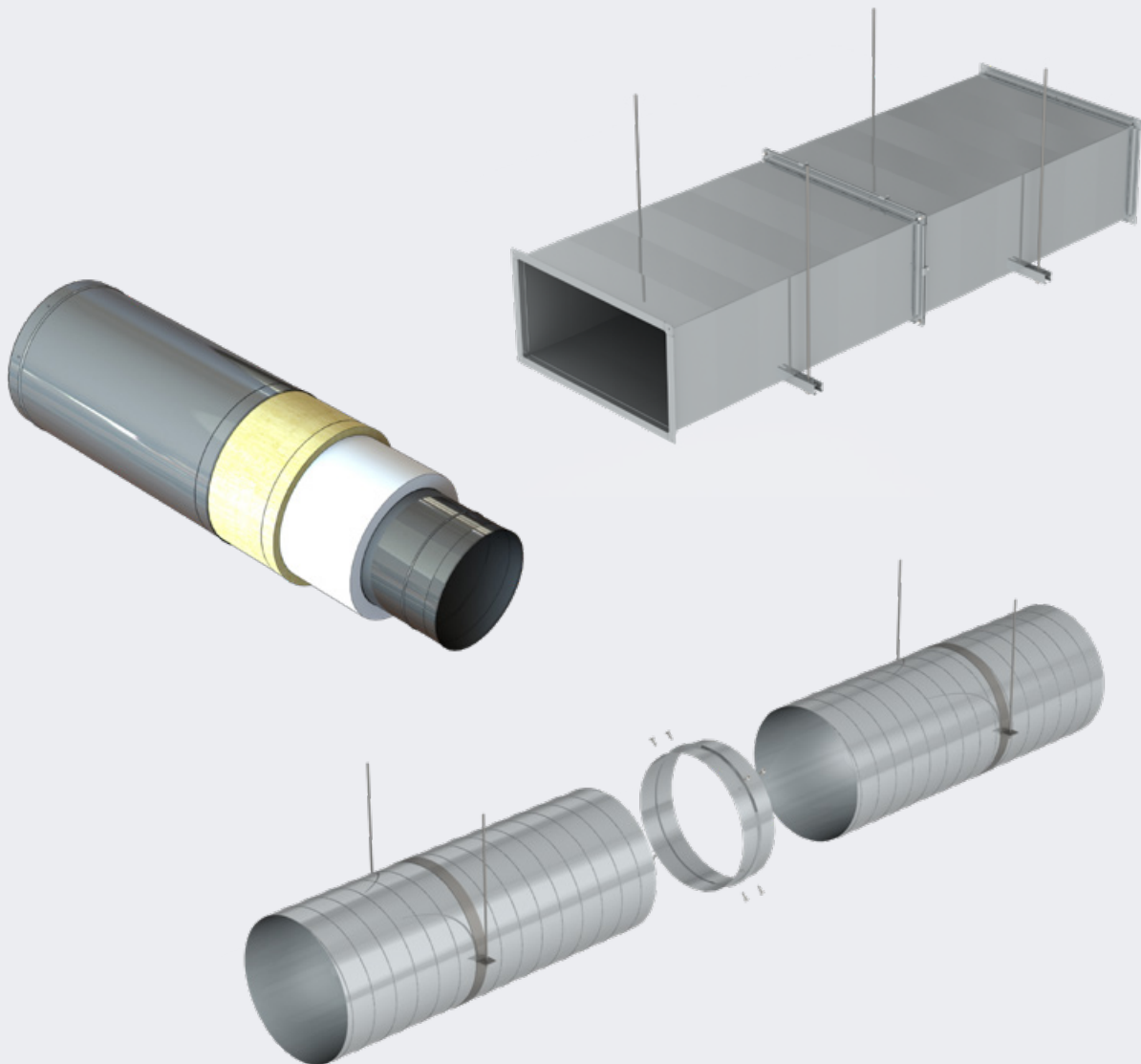




Heat & Smoke Control Systems

The Ductfire SR, SR-BS, SC and M products range represent quality solutions able to guaranteeing safety and efficiency even in the most extreme conditions.

Roccheggiani offer for multi-compartment (Ductfire M) and single compartment (Ductfire SR and SC) installations are designed to ensure greater safety in ventilation systems and are characterized by high versatility and speed of installation.

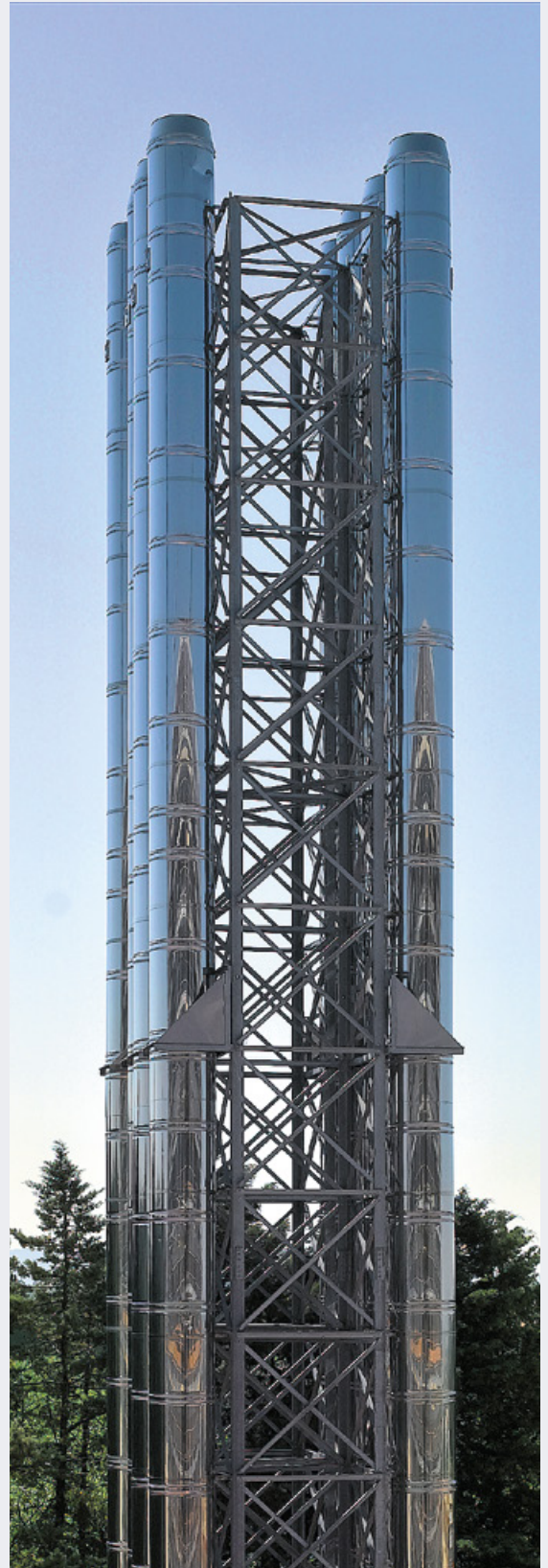
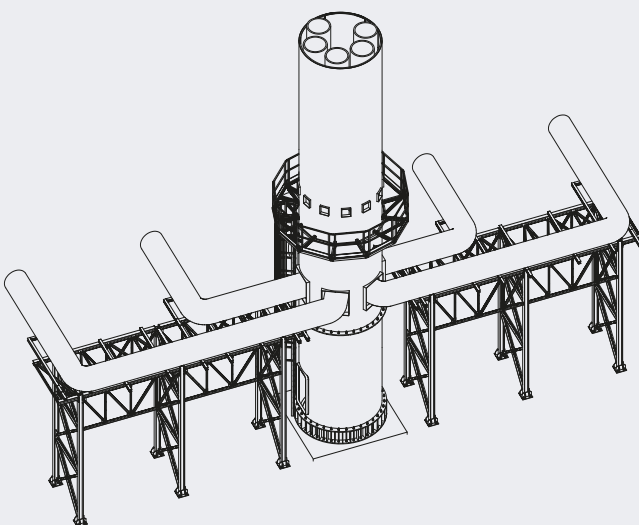


Flue systems

Engineering division

The Engineering division, operating with **UNI EN ISO 9001** certified project management methodologies, is able to manage all the milestones of a project, from the quotation to production planning and quality check, up to the direction of the installation activities on site, ensuring to the customer a complete service:

- technical/regulatory support
- technical-economic feasibility study
- technical inspection and measurements on site
- design and construction of flues
- upon request, design and construction of support poles, support structures for anchoring the flues
- installation on site



Check & test

Calorimetric Enthalpy Chamber

FAT – Factory Acceptance Test

Upon request from the customer, all Roccheggiani products can undergo a Factory Acceptance Test and Factory Performance Test to measure and check air flow, static pressure, vibrations, leaks, noise and heating and chilling capacity.

Enthalpy Climate Chamber EN14511 - EN14825



The company has a double-room Climate Chamber capable of testing Refrigeration Machines with cooling and heating powers above 3.8 MW; the Chamber is equipped with an Enthalpy Tunnel for accurate measurement.

Standard	Test conditions	Type of test
EN 14511:2022	Temperature:	Air – Air
EN 14825: 2022	-20 °C to +65 °C	Air – Water
AHRI 550/590: 2017	Relative humidity:	Water – Air
EN 12599: 2012	15% to 98%	Water – Water
ISO 3746: 2010		Hydronic Units
ISO 9614-2: 1998		







5

production
units

30

countries
in the world

48.000

sq.m.
of production area

1958

year of
foundation



Developing and producing
innovative HVAC&R solutions

ROCCHEGGIANI®
care for air



Roccheggiani S.p.a.
Via 1° Maggio, 10 - 60021 Camerano (An) Italy
Tel +39 071 730 00 23
Fax +39 071 730 40 05
info@roccheggiani.it

www.roccheggiani.it

ROCCHEGGIANI®
care for air