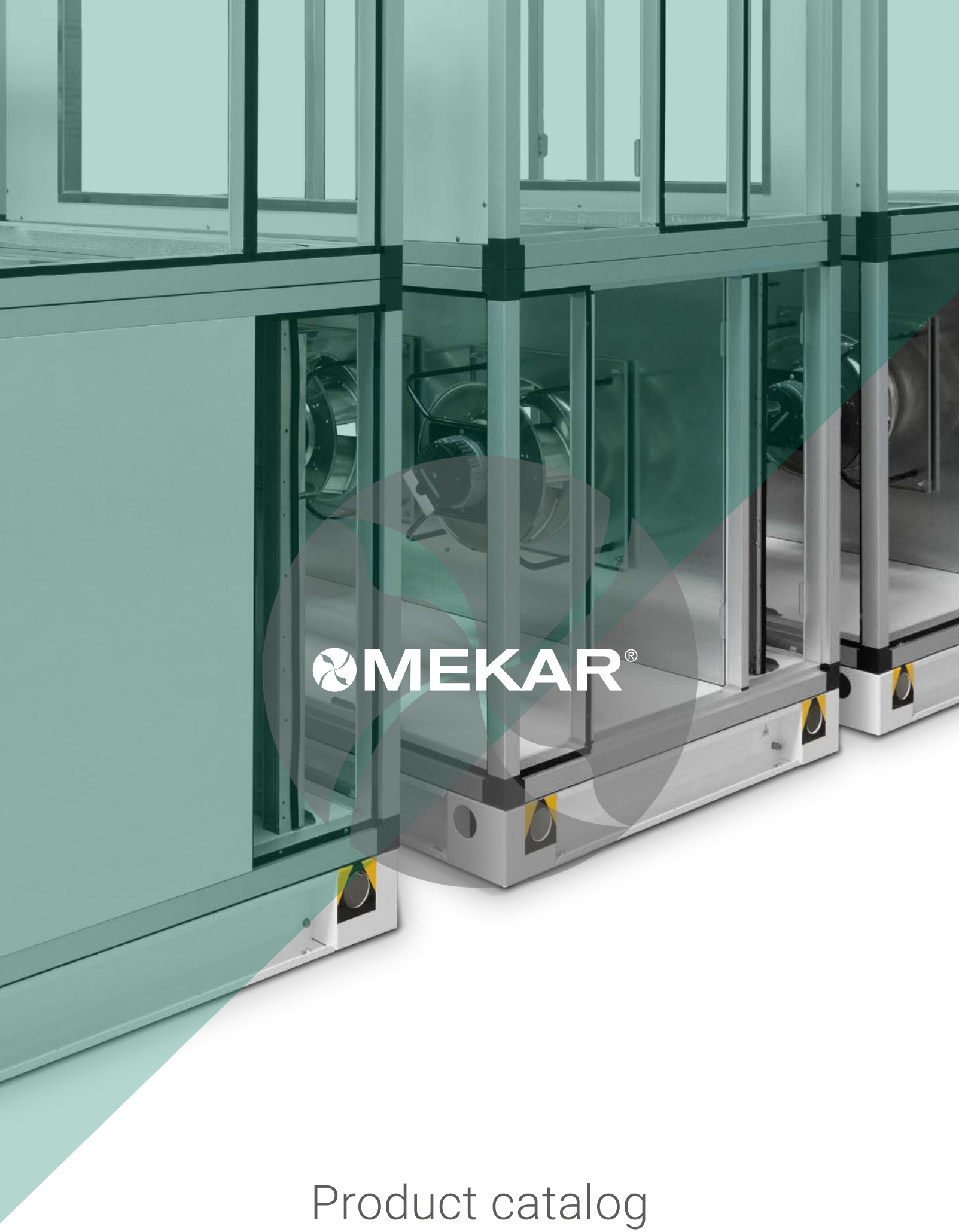


MEKAR®

Product catalog

Rel. 02_03_02

MEKAR®
AIR HANDLING UNITS

Product catalog

Rel. 02_03_02

Index

the best environmental control, of the world's tallest building

Burj Khalifa | Dubai

829.80 meters high
162 floor
344.000 m²
58 lifts
39.000 tons of steel
2.5 € milions
6.000 special Mekar's FCU

References and projects developed by Aliseo Group brands

BURJ TOWER - DUBAI, U.A.E. • YAS MARINA HOTEL - ABU DHABI, U.A.E. • BURJ AL ARAB - DUBAI, U.A.E.
NEERING CENTER - DUBAI, U.A.E. • ROSEWOOD HOTEL - ABU DHABI, U.A.E. • ROSE CEREMONY HALL CO
• FACULTY OF ENGINEERING - DAMASCUS, SYRIA • ALEPPO SPORT CITY - ALEPPO, SYRIA • MAMOON U
- BAGHDAD, IRAQ • MINISTRY OF EDUCATION - BAGHDAD, IRAQ • IMMAM HUSAIN MOSQUE - KARBALA,
CENTRE, PAKISTAN • WORLD TRADE CENTER, QATAR • AL WAKRA HOSPITAL, QATAR • BUSINESS PAR

• MINISTRY OF DEFENCE - ABU DHABI, U.A.E. • DUBAI MALL PROJECT - DUBAI, U.A.E. • EMIRATES ENGI-
MPLEX - IRAN • TABAN AIRLINE CENTRAL OFFICE - IRAN • KALAMOON UNIVERSITY - DAMASCUS, SYRIA
NIVERSITY - ALEPPO, SYRIA • HOSPITAL OF HEART SURGER - LATAKIA, SYRIA • MINISTRY OF HOUSING
IRAQ • PEPSI FACTORY - ERBIL, IRAQ • DIYALA HOSPITAL - DIYALA, IRAQ • DOLMEN CITY COMMERCIAL
K CROWN PLAZA, QATAR • MUSCAT AIRPORT - MUSCAT, OMAN • BAHRAIN CITY CENTER - BAHRAIN •

the best environmental control, of the ultimate hotel experience

Burj Al Arab | Dubai

7 stars

202 suites

321 meters high

70.000 m^3

foundation of **230** m length

9.000 m^2 of steel

600 € milions

2.000 special Mekar's FCU

650 special Mekar's AHU

References and projects developed by Aliseo Group brands

BURJ AL ARAB - DUBAI, U.A.E. • BURJ TOWER - DUBAI, U.A.E. • YAS MARINA HOTEL - ABU DHABI, U.A.E.
NEERING CENTER - DUBAI, U.A.E. • ROSEWOOD HOTEL - ABU DHABI, U.A.E. • ROSE CEREMONY HALL CO
• FACULTY OF ENGINEERING - DAMASCUS, SYRIA • ALEPPO SPORT CITY - ALEPPO, SYRIA • MAMOON U
- BAGHDAD, IRAQ • MINISTRY OF EDUCATION - BAGHDAD, IRAQ • IMMAM HUSAIN MOSQUE - KARBALA,
CENTRE, PAKISTAN • WORLD TRADE CENTER, QATAR • AL WAKRA HOSPITAL, QATAR • BUSINESS PAR

• MINISTRY OF DEFENCE - ABU DHABI, U.A.E. • DUBAI MALL PROJECT - DUBAI, U.A.E. • EMIRATES ENGI-
MPLEX - IRAN • TABAN AIRLINE CENTRAL OFFICE - IRAN • KALAMOON UNIVERSITY - DAMASCUS, SYRIA
NIVERSITY - ALEPPO, SYRIA • HOSPITAL OF HEART SURGER - LATAKIA, SYRIA • MINISTRY OF HOUSING
IRAQ • PEPSI FACTORY - ERBIL, IRAQ • DIYALA HOSPITAL - DIYALA, IRAQ • DOLMEN CITY COMMERCIAL
K CROWN PLAZA, QATAR • MUSCAT AIRPORT - MUSCAT, OMAN • BAHRAIN CITY CENTER - BAHRAIN •

the best environmental control, of the FIFA World Cup 2022 stadium

References and projects developed by Aliseo Group brands

BURJ TOWER - DUBAI, U.A.E. • YAS MARINA HOTEL - ABU DHABI, U.A.E. • BURJ AL ARAB - DUBAI, U.A.E.
NEERING CENTER - DUBAI, U.A.E. • ROSEWOOD HOTEL - ABU DHABI, U.A.E. • ROSE CEREMONY HALL CO
• FACULTY OF ENGINEERING - DAMASCUS, SYRIA • ALEPPO SPORT CITY - ALEPPO, SYRIA • MAMOON U
- BAGHDAD, IRAQ • MINISTRY OF EDUCATION - BAGHDAD, IRAQ • IMMAM HUSAIN MOSQUE - KARBALA,
CENTRE, PAKISTAN • WORLD TRADE CENTER, QATAR • AL WAKRA HOSPITAL, QATAR • BUSINESS PAR

• MINISTRY OF DEFENCE - ABU DHABI, U.A.E. • DUBAI MALL PROJECT - DUBAI, U.A.E. • EMIRATES ENGI-
MPLEX - IRAN • TABAN AIRLINE CENTRAL OFFICE - IRAN • KALAMOON UNIVERSITY - DAMASCUS, SYRIA
NIVERSITY - ALEPPO, SYRIA • HOSPITAL OF HEART SURGER - LATAKIA, SYRIA • MINISTRY OF HOUSING
IRAQ • PEPSI FACTORY - ERBIL, IRAQ • DIYALA HOSPITAL - DIYALA, IRAQ • DOLMEN CITY COMMERCIAL
K CROWN PLAZA, QATAR • MUSCAT AIRPORT - MUSCAT, OMAN • BAHRAIN CITY CENTER - BAHRAIN •

Best high profile units in the most technologically advanced racing circuit of Formula 1

Yas Marina Hotel | Abu Dhabi

5.389 glass panels

F1 integrated Formula 1 track

499 rooms

75 suite

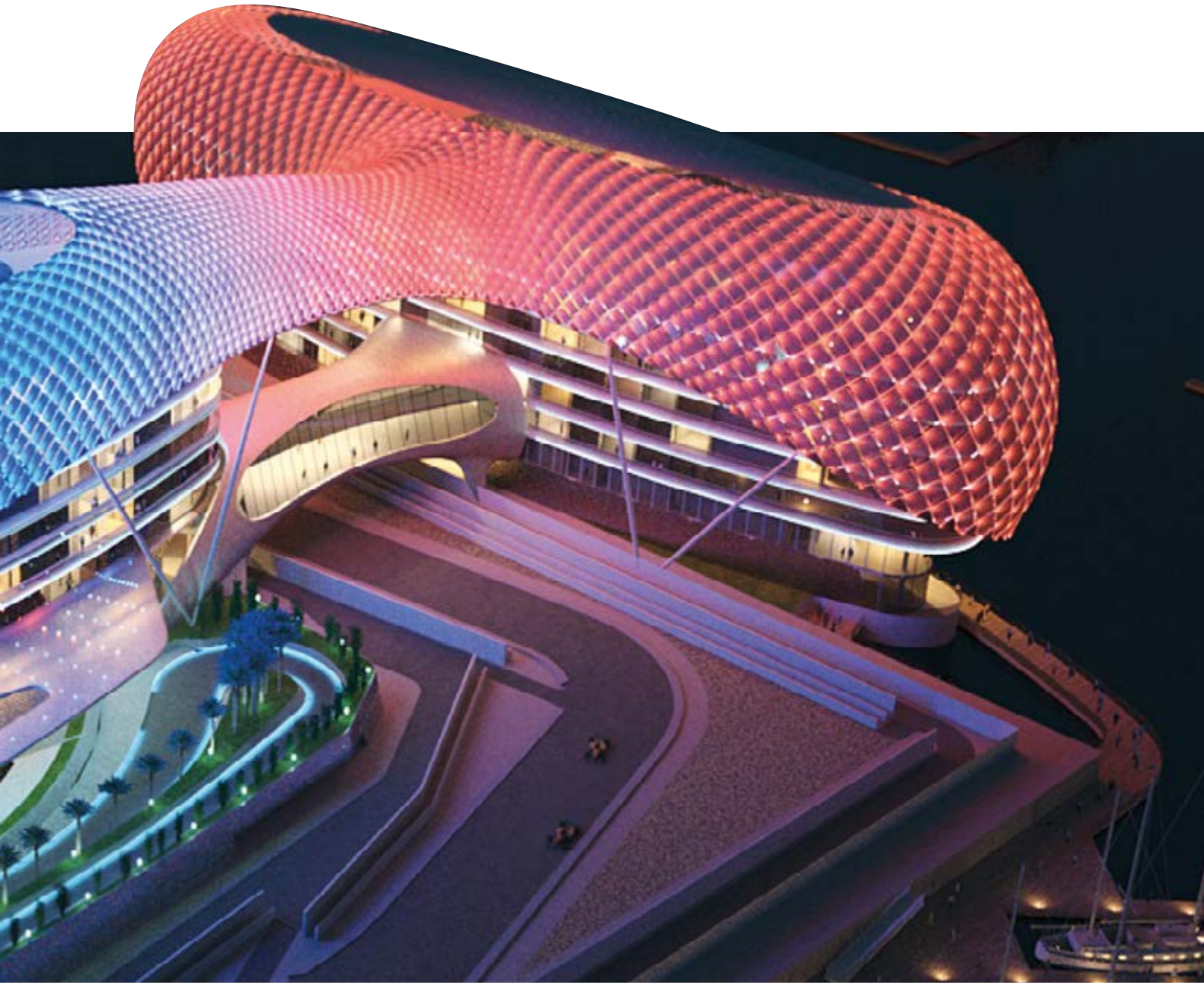
6 restaurants

85.000 m^2

53 Mekar's AHU

References and projects developed by Aliseo Group brands

YAS MARINA HOTEL - ABU DHABI, U.A.E. • BURJ TOWER - DUBAI, U.A.E. • BURJ AL ARAB - DUBAI, U.A.E.
NEERING CENTER - DUBAI, U.A.E. • ROSEWOOD HOTEL - ABU DHABI, U.A.E. • ROSE CEREMONY HALL CO
• FACULTY OF ENGINEERING - DAMASCUS, SYRIA • ALEPPO SPORT CITY - ALEPPO, SYRIA • MAMOON U
- BAGHDAD, IRAQ • MINISTRY OF EDUCATION - BAGHDAD, IRAQ • IMMAM HUSAIN MOSQUE - KARBALA,
CENTRE, PAKISTAN • WORLD TRADE CENTER, QATAR • AL WAKRA HOSPITAL, QATAR • BUSINESS PAR



• MINISTRY OF DEFENCE - ABU DHABI, U.A.E. • DUBAI MALL PROJECT - DUBAI, U.A.E. • EMIRATES ENGI-
MPLEX - IRAN • TABAN AIRLINE CENTRAL OFFICE - IRAN • KALAMOON UNIVERSITY - DAMASCUS, SYRIA
NIVERSITY - ALEPPO, SYRIA • HOSPITAL OF HEART SURGER - LATAKIA, SYRIA • MINISTRY OF HOUSING
IRAQ • PEPSI FACTORY - ERBIL, IRAQ • DIYALA HOSPITAL - DIYALA, IRAQ • DOLMEN CITY COMMERCIAL
K CROWN PLAZA, QATAR • MUSCAT AIRPORT - MUSCAT, OMAN • BAHRAIN CITY CENTER - BAHRAIN •

Tailor made units for a new generation of distinctive luxury

The Royal Atlantis Resort | Dubai

43 plans
795 rooms
231 residences
13 restaurants
90 pools
173.398 m²
1.2 € milions
4.000 Mekar's FCU

References and projects developed by Aliseo Group brands

MASERATI WORKS - MODENA • AERMACCHI WORKS - VARESE • DIESEL - VICENZA • DIADORA WORKS -
• INSTITUTE OF PHOTONICS - MILAN • INSTITUTE OF NUCLEAR PHYSIC - FLORENCE • VENDRAMIN PA
METRO - MILAN • UNIVERSITY - SAVONA • HOSPITAL - PIACENZA • PIRELLI BUILDING - MILAN • S.S. GI
AIRPORT - OLBIA • BAULI CONFECTIONERY - VERONA • BARILLA FOOD INDUSTRY - MELFI • NEGRONI F
ROPE DISTRICT - AVIANO • PALAZZO REALE VENARIA - TURIN • "S. RAFFAELE" HOSPITAL - ROMA • PIREL

TREVISO • DUCATI MOTORS - BOLOGNA • FERRARI STORE - MARANELLO • CORRER MUSEUM - VENICE
LACE - VENICE • “MOLINO STUCKY” GRAND HOTEL - VENICE • NESTLE’ - FROSINONE • AIRPORT - PISA •
OVANNI AND PAOLO CIVIL HOSPITAL - VENICE • S. PAOLO STADIUM - NAPLES • UNIVERSITY - VERONA •
OOD INDUSTRY - CREMONA • YOMO FOOD INDUSTRY - MILAN • FIAT WORKS - TURIN • BASE NATO EU-
LLI, SETTIMO TORINESE - TURIN • BANCA D’ITALIA - GENOVA • UNIVERSITY - MILAN • PALAVELA - TURIN

A reliable partner for a prestigious choice

References and projects developed by Aliseo Group brands

BURJ TOWER - DUBAI, U.A.E. • YAS MARINA HOTEL - ABU DHABI, U.A.E. • BURJ AL ARAB - DUBAI, U.A.E.
NEERING CENTER - DUBAI, U.A.E. • ROSEWOOD HOTEL - ABU DHABI, U.A.E. • ROSE CEREMONY HALL CO
• FACULTY OF ENGINEERING - DAMASCUS, SYRIA • ALEPPO SPORT CITY - ALEPPO, SYRIA • MAMOON U
- BAGHDAD, IRAQ • MINISTRY OF EDUCATION - BAGHDAD, IRAQ • IMMAM HUSAIN MOSQUE - KARBALA,
CENTRE, PAKISTAN • WORLD TRADE CENTER, QATAR • AL WAKRA HOSPITAL, QATAR • BUSINESS PAR

• MINISTRY OF DEFENCE - ABU DHABI, U.A.E. • DUBAI MALL PROJECT - DUBAI, U.A.E. • EMIRATES ENGI-
MPLEX - IRAN • TABAN AIRLINE CENTRAL OFFICE - IRAN • KALAMOON UNIVERSITY - DAMASCUS, SYRIA
NIVERSITY - ALEPPO, SYRIA • HOSPITAL OF HEART SURGER - LATAKIA, SYRIA • MINISTRY OF HOUSING
IRAQ • PEPSI FACTORY - ERBIL, IRAQ • DIYALA HOSPITAL - DIYALA, IRAQ • DOLMEN CITY COMMERCIAL
K CROWN PLAZA, QATAR • MUSCAT AIRPORT - MUSCAT, OMAN • BAHRAIN CITY CENTER - BAHRAIN •

A complete range of solutions for any comfort needs

References and projects developed by Aliseo Group brands

BMW WORKS - MÜNICH, GERMANY • MERCEDES BENZ WORKS - STUTTGART, GERMANY • STEELWIND
MANY • CARTIER PALACE - AMSTERDAM, NETHERLANDS • UNIVERSITY OF SCIENCES - AMSTERDAM, N
LA S.A. TELEVISION - MADRID, SPAIN • WILHEMIN HOSPITAL - WIEN, AUSTRIA • HILTON HOTEL - WIEN,
MENT EDA - BERN, SWITZERLAND • PHILIP MORRIS FACTORY, SWITZERLAND • NEW ØRESUND BRIDGE
TEST TRACK - ARVIDSJAUR, SWEDEN • UNESCO HEADQUARTER - PARIS, FRANCE • HOSPITAL MACED

O NORDENHAM GMBH - GERMANY • MÜNICH, GERMANY • MÜNCHEN HOSPITAL - HARLACHING, GER-
NETHERLANDS • GENERAL HOSPITAL - MADRID, SPAIN • TORRE DE CRISTAL - MADRID, SPAIN • ESPANO-
AUSTRIA • COURTHOUSE - WIEN, AUSTRIA • AIRPORT - WIEN, AUSTRIA • BUILDING OF SWISS GOVERN-
E - SWEDEN • SWEDISH ROYAL THEATRE - STOCKHOLM, SWEDEN • NOKIA - LINKOPING, SWEDEN • AUDI
O DE CAVALEIROS, PORTUGAL • GOVERNMENT BUILDING - SOFIA, BULGARIA • METELKOVA HOSPITAL

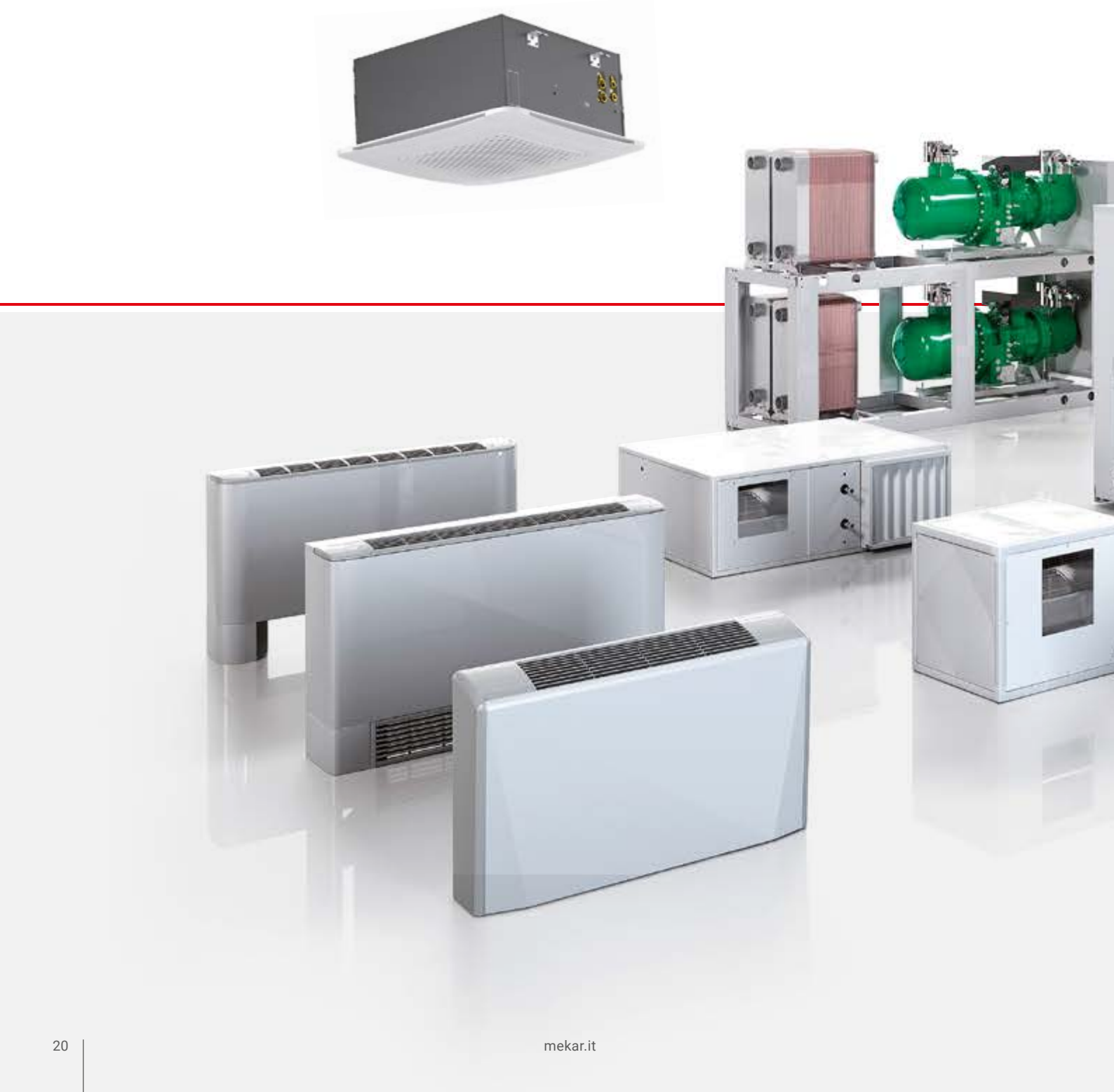
Quality and knowledges, supporting your goals

References and projects developed by Aliseo Group brands

MASERATI WORKS - MODENA • AERMACCHI WORKS - VARESE • DIESEL - VICENZA • DIADORA WORKS -
• INSTITUTE OF PHOTONICS - MILAN • INSTITUTE OF NUCLEAR PHYSIC - FLORENCE • VENDRAMIN PA
METRO - MILAN • UNIVERSITY - SAVONA • HOSPITAL - PIACENZA • PIRELLI BUILDING - MILAN • S.S. GI
AIRPORT - OLBIA • BAULI CONFECTIONERY - VERONA • BARILLA FOOD INDUSTRY - MELFI • NEGRONI F
ROPE DISTRICT - AVIANO • PALAZZO REALE VENARIA - TURIN • "S. RAFFAELE" HOSPITAL - ROMA • PIREL

TREVISO • DUCATI MOTORS - BOLOGNA • FERRARI STORE - MARANELLO • CORRER MUSEUM - VENICE
LACE - VENICE • “MOLINO STUCKY” GRAND HOTEL - VENICE • NESTLE’ - FROSINONE • AIRPORT - PISA •
OVANNI AND PAOLO CIVIL HOSPITAL - VENICE • S. PAOLO STADIUM - NAPLES • UNIVERSITY - VERONA •
OOD INDUSTRY - CREMONA • YOMO FOOD INDUSTRY - MILAN • FIAT WORKS - TURIN • BASE NATO EU-
LLI, SETTIMO TORINESE - TURIN • BANCA D’ITALIA - GENOVA • UNIVERSITY - MILAN • PALAVELA - TURIN

Network Aliseo Group



Aliseo Group is a 100% Italian industrial company that offers a complete range of solutions to ensure the desired climate and air quality for all requirements regarding air conditioning, heating, filtration and energy recovery.

Aliseo Group Network

A Group SpA (Ventilclima, Eden, Venco)

TREVISO - ITALY

Mekar Srl

VERONA - ITALY

Mekar Air Handling Units LLC

AJMAN - UAE

Mekar Air Handling Units LLC

JEDDAH - K.S.A.

Mekar Air Handling Units LLC

RIYADH - K.S.A.

Mekar Air Handling Units WLL

DOHA - QATAR

Mekar Air Conditioning Units LLC

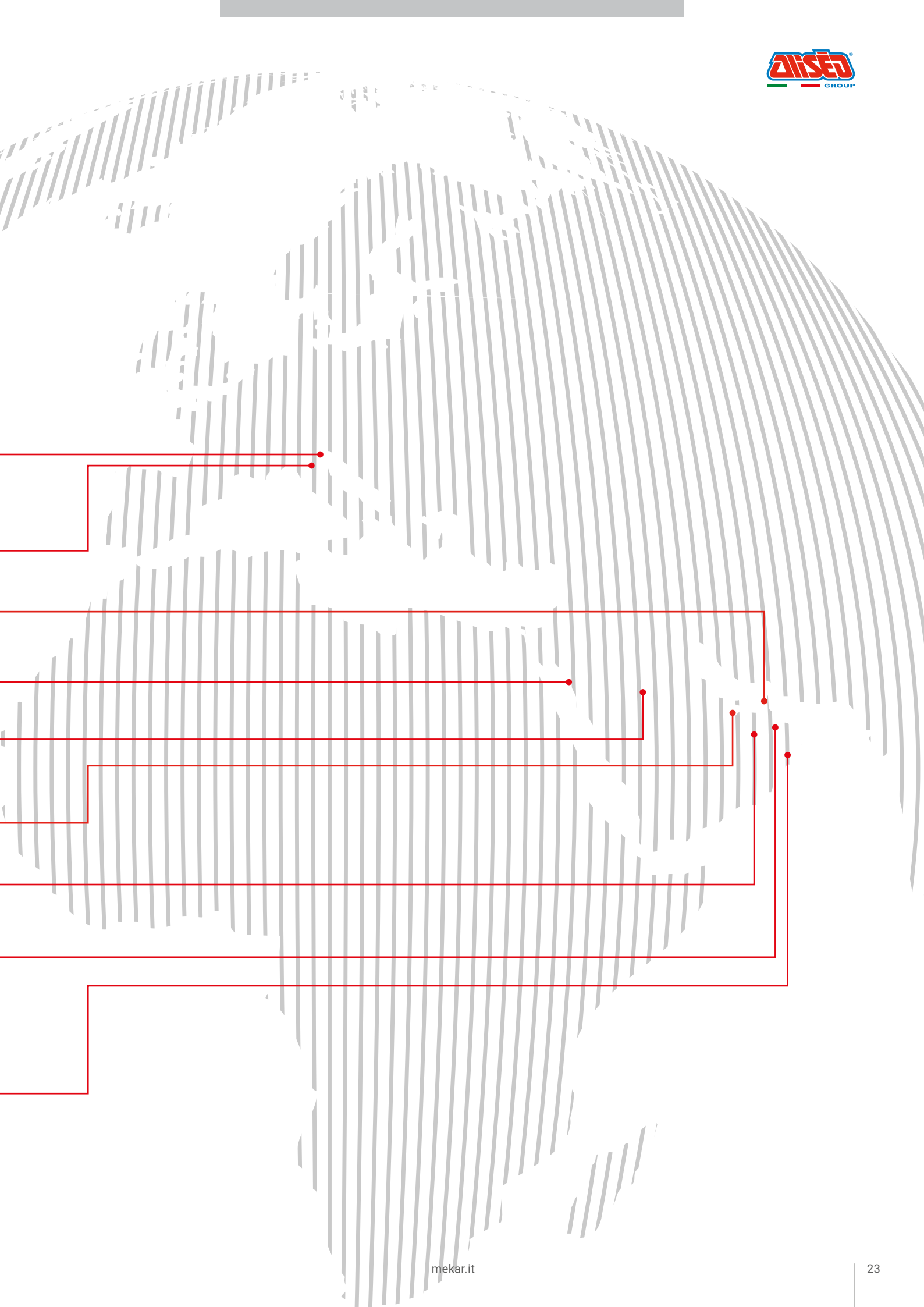
ABU DHABI - UAE

Royal Gulf LLC

DUBAI - UAE

Royal Gulf Air Conditioning Company LLC

MUSCAT - OMAN



MEKAR®
AIR HANDLING UNITS

Mekar is a dynamic company strongly oriented to technological innovation, specializing in the design, development and production of units and integrated solutions for air treatment.

The Company has as its primary objective the maximum customer satisfaction, for this it aims primarily to guarantee high standards of reliability of its product range and a pre and post-sales assistance service, provided by professionals and technicians highly specialized in the sector.
Mekar employs a widespread network of partners on an international scale, which contribute to the distribution of the product while guaranteeing quality control also through its assistance centers. The aim is quality understood in an absolute sense, certifying and producing according to UNI EN ISO 9001 standards.

Mekar is the ideal partner in the air treatment sector, the innumerable prestigious national and international references are the objective proof of the skills and service that the company is able to guarantee to its customers.

Relying on Mekar is a guarantee of satisfaction.

Mission

Our mission

Our mission is clear: to remain faithful to our values and ethical principles that since 1974 have allowed us to grow by doing what we do best: improving the quality of life of our customers, offering optimal comfort guaranteed by innovative solutions and informed decisions.

For over 45 years we have committed ourselves daily to the research, design and production of Made in Italy solutions that provide efficient and high-performing products to improve the psychophysical wellbeing of the occupants and ensure greater environmental sustainability.

Over the years we have adapted and evolved, but our essence has remained integral.
We always get back in the game to better understand the needs of our customers, and we are proud to realize that our values and know-how have won us the trust of a vast and demanding international clientele. Our customers see us as a reliable partner who can supply the most valuable thing in a building: comfort.

Our experience, perseverance and total dedication to full customer satisfaction - ensured by the human capital of our team - have allowed us to achieve important goals over the years, including the privilege of being chosen as the ideal partner in hundreds of projects of unquestionable prestige and international fame.

Applications

Innovative solutions, for every kind of need

The experience and know-how acquired in over 45 years of activity in the sector, wide-ranging flexibility and dynamism that has always characterized our company's DNA and the ever increasing attention paid to the human capital that makes up our team, have garnered us recognition on the market today as a reliable player who offers fully customized solutions according to customer specifications.

Thanks to our engineering, a research laboratory and partnership with the foremost European laboratories, we respond to all sorts of needs, whether it involves air treatment for comfort purposes or specific areas such as industry, manufacturing, naval, hospital, food or oil & gas, where durability, reliability and full operation must always be guaranteed.

With dedication and passion we know how to listen to the needs of our customers, and supply turnkey solutions, guaranteed by years of experience in the sector and by products designed, developed and manufactured entirely in Italy.


Residential


Business


Public


Industrial


Naval


Chemical


Enology


Museum


Hospital


Food


Process


Pharmaceutical

Quality

Quality and performance, certified

Our goal is total customer satisfaction, which is why we have always rigorously applied a meticulous and constant process to improve our products and processes, moving around from the performance aspect through a careful research and development phase supported by advanced testing and verification tools, to finally reach a scrupulous control of the entire corporate process certified according to ISO 9001.

The numerous certifications, including the one concerning the fulfillment of the most stringent health and hygiene requirements that comply with the criteria of DIN1946-4, testify to the primary attention and constant commitment put by Mekar on issues that have always been dear to the company, such as innovation, quality, efficiency and total reliability of the solutions and product ranges offered to the market

Health

Comfort and well-being, in total safety

TÜV NORD

CERTIFICATE

Permission to use the test mark

VOLUNTARY TEST OF HYGIENE REQUIREMENTS

TESTED HYGIENE SUITABILITY OF AIR HANDLING UNITS

TÜV NORD Systems GmbH & Co. KG, Hamburg, Germany,

hereby confirms that the Air Handling Unit in Hygienic Version of the range

"23MK-H"

conforms to the requirements set by TÜV NORD Systems GmbH & Co. KG.

Mekar S.r.l., Isola della Scala (VR), Italy,

is therefore granted the right to use the test mark shown below in connection with the above-mentioned product.

TÜV NORD Systems GmbH & Co. KG
Expert of Testing Laboratory for Ventilation, Air-Conditioning and Refrigeration

Dipl.-Ing. Vera Gräff

Essen, 23 February 2015

DIN 1946-4

Today it is vital for companies to guarantee an ideal healthy climate within various environments, ensuring both comfort and safety, favoring the psychophysical wellbeing of individuals, while improving their health, performance and concentration. Appropriate air management, not only in terms of the temperature but also the purity of the air, in the environments where we live, represents a vital aspect for the well-being of the occupants as it superbly maintains their health conditions.

Mekar set out to give a concrete answer to the primary aspect of user protection by designing, developing and certifying **DIN 1946-4** a dedicated range of units that guarantee a high standard of hygiene, with a broad range of fields of application. These applications include the most common areas such as offices, schools, gyms, spas and shared spaces in general where a healthier and safer environment is created. Then we provide even more sensitive applications for places such as hospitals, clinics, the food and pharmaceutical industries in which absolute levels of hygiene must be guaranteed.

The introduction of innovative technical construction solutions, the use of stainless materials and cutting-edge polymers tested according to **DIN EN ISO 846** and capable of inhibiting bacterial proliferation, have led to the creation of two series of products conforming to the parameters imposed by the **VDI 6022** guidelines. These are ever more widely recognized at the European level as a reference for the state-of-the-art design of public spaces where excellent hygiene and comfort can be ensured to the total benefit of the public well-being.

Safety

Certified solutions, full operation even in the event of an earthquake

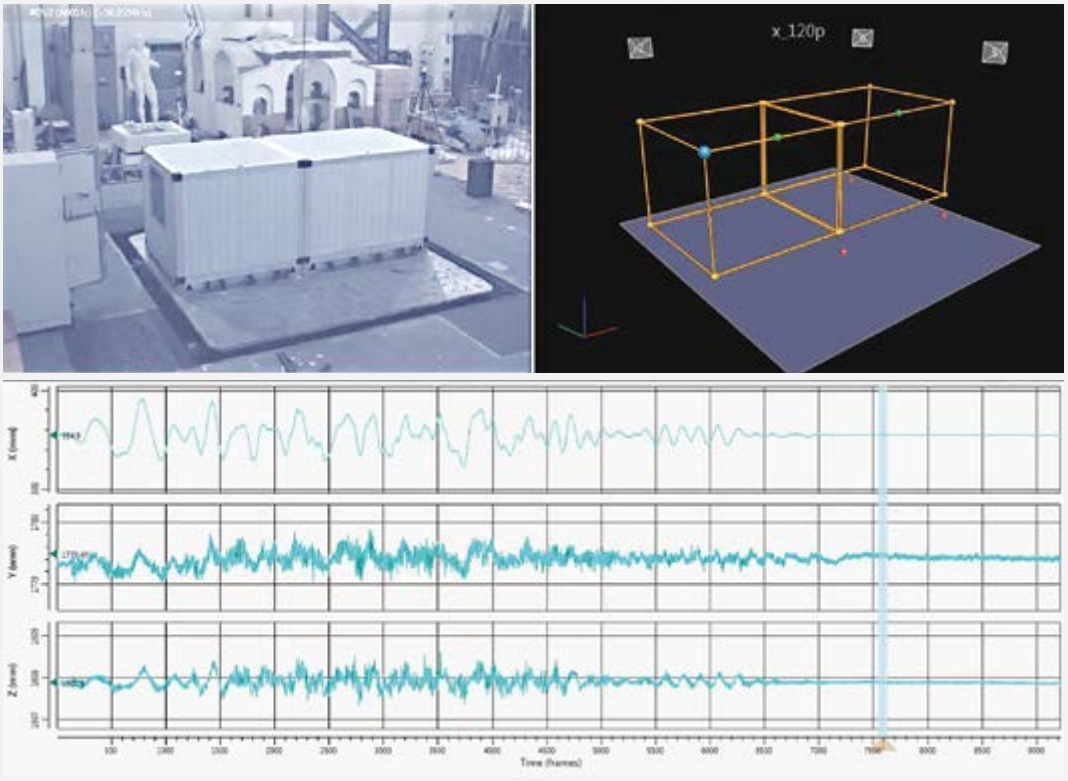
Ensuring the full operation of the systems that guarantee air treatment even in the case of adverse events, such as seismics, is a priority issue for any public building that must guarantee total safety for users and full functionality.

For this reason, as early as 2016, specific seismic tests were performed at the ENEA Research Center in Rome, where the suitability of the UTA Mekar 23MK series was certified for resisting without damage in the case of seismic events, in compliance with UBC97 (Universal Building Code 97).

Seismic tests performed at

ENEA

National agency for new technologies,
energy and sustainable economic development.



Support

Quality and skills, at your service

Every day we do our best to make our brand a synonym and guarantee of reliability, quality and maximum durability. This is why we work constantly to also offer a complete and professional after-sales service. Our team of specialized technicians and a network of international partners support our customers with qualified consultancies aimed at providing technical assistance and ongoing training.

Our professional after-sales service responds in a timely manner to every need, from the formulation of estimates for spare parts to the planning of technical interventions on site; technical consultancies dedicated to the creation of customized solutions, while minimizing inconvenience to the customer and guaranteeing full operation of the environments in which our products are installed.


support


analysis & consulting


installation & testing


spare parts


preventive maintenance


training


technical interventions


customized warranty solutions

From concept to installation, a turnkey solution

We propose solutions expanding our vision beyond the product and exploring the critical issues that are manifesting both in the design context and in the field of construction site and transforming them into opportunities.

This vision goes beyond the concept of AHU (Air Handling Unit) to the new concept of AHS (Air Handling Solutions) where the company is no longer just a producer and spectator of a process but protagonist of a realization that starts from the consultancy to the designer and to the support on site to the installer.

A.H.S Air Handling Solutions

Training

Continuous training and innovation, also in human capital

We believe the company is made first and foremost of people, for this reason we invest in human capital and training, convinced that only by sharing ideas, solutions and needs can responses be provided to an increasingly evolved and demanding market.

Since 1974 we have evolved and specialized in treating in an excellent way and with conscious choices the most important of the natural elements: the air.
In order to better convey our values and share choices and needs with our partners and our customers, we founded Mekar Academy.

MEKAR Academy

We offer training courses for consultants, designers, installers and specialists in the sector in order to share topics such as product innovations, new solutions, regulatory updates and in order to see first-hand the quality of the products and our services that we want to be able to put at the service of our partners.

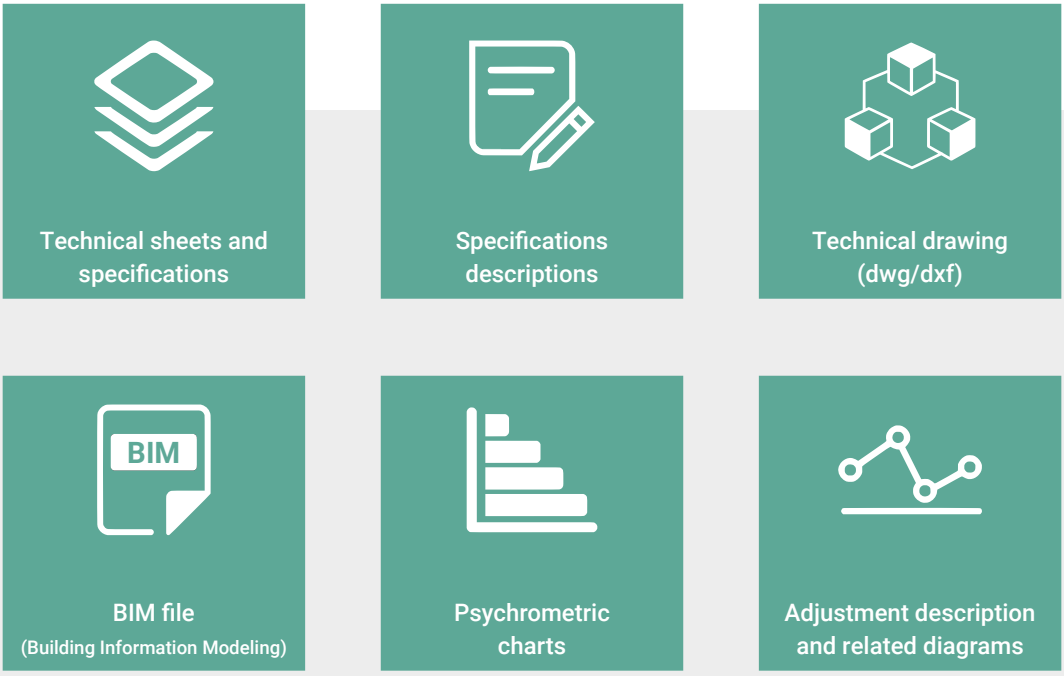
Software

Software Selection

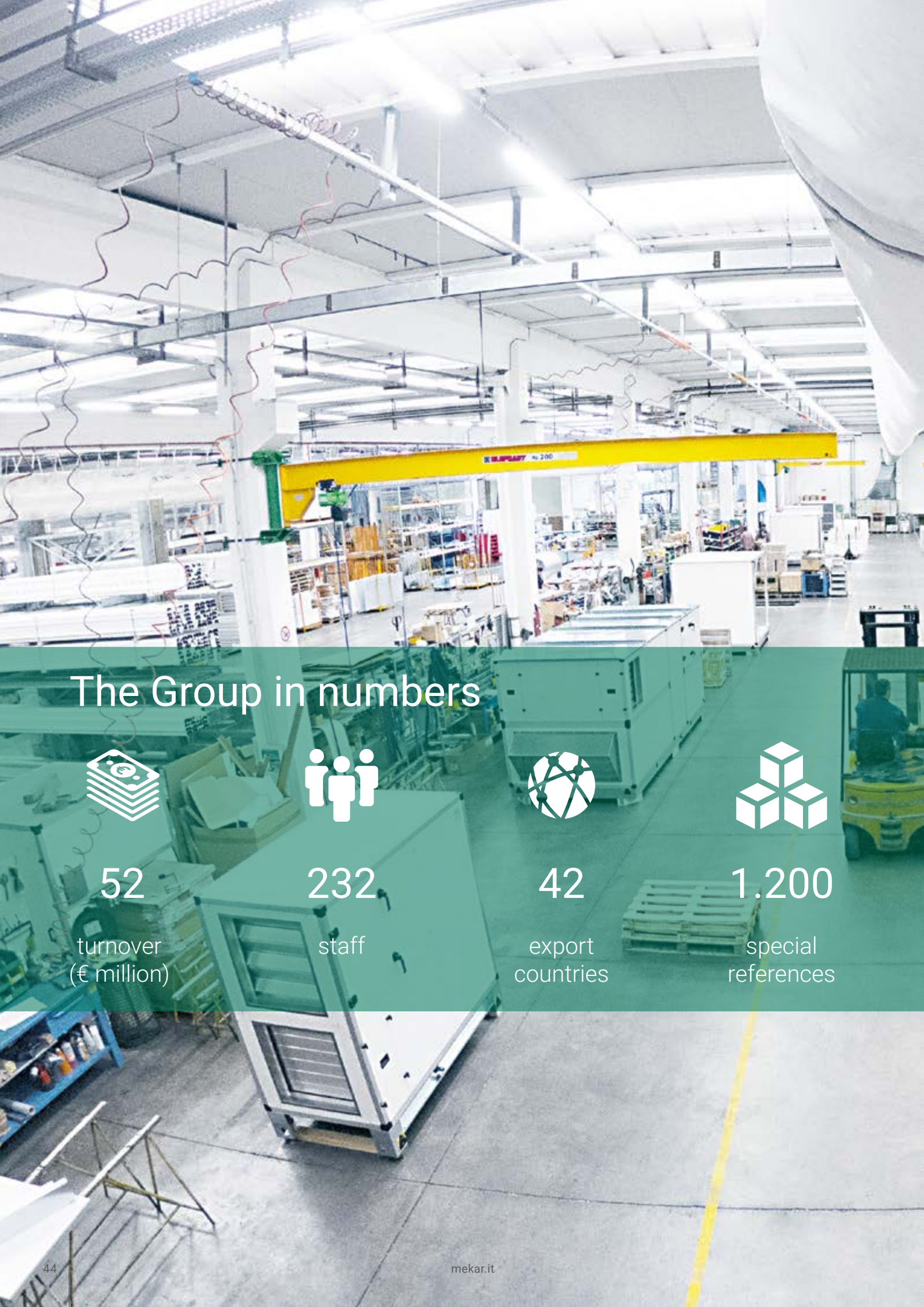
MEKAR has developed an exclusive product configuration and budgeting software, which integrates all the functions in a single easy-to-use tool, from which it will be possible, in a few simple steps, to obtain a complete selection based on your needs. Once the selection is complete, it will be possible to release all the necessary information in different formats, from the performance data, to the dimensional data, from the technical drawings to the BIM contents, up to the detailed economic offer.

The completeness and the transversal functionalities of this powerful calculation tool allow to select in a dynamic and intuitive way a wide variety of possible configurations, composing the unit step by step with the integration of all the relative optional accessories.

Great attention and completeness has also been placed in the regulation and control part of the UTA, which can always be configured using the same instrument through a dedicated section, which offers the possibility of configuring a complete plug&play solution.



The Mekar software can be provided free of charge to professionals in the sector, who can also take advantage of training courses dedicated to the use of the same and organized at the MEKAR-ACADEMY. Furthermore, the Company provides a constant selection support service through its pre-sales office, made up of highly specialized technical profiles able to support the professional in the case of dedicated implementations or assistance in general.



The Group in numbers

52
turnover
(€ million)

232
staff

42
export
countries

1.200
special
references

8

branches

26.132

production area
(m^2)


MEKAR


MEKAR
MADE IN ITALY

Product range index


P
Park 3
Bus

23MK

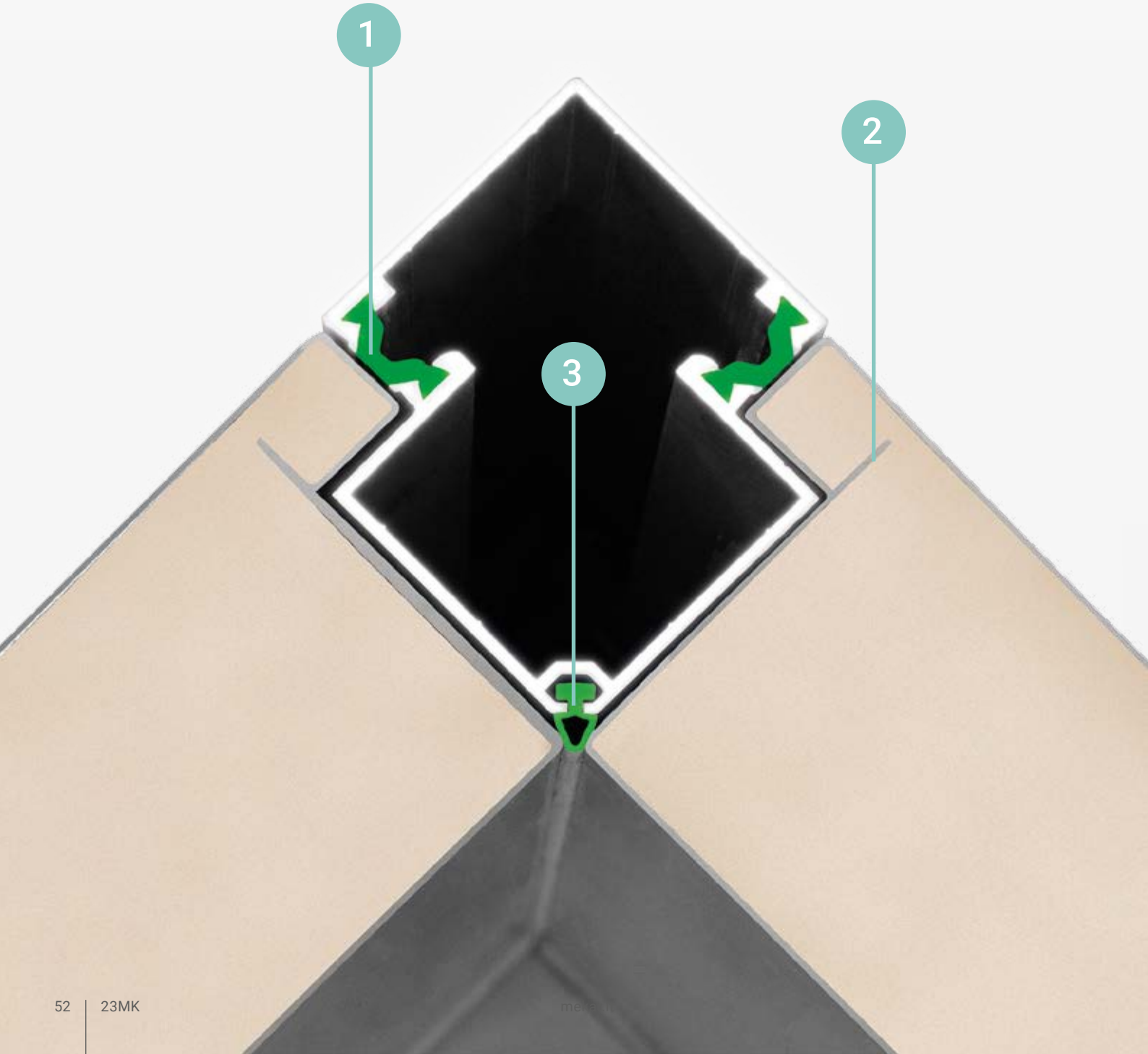
Air handling unit for the service sector

The 23MK series air handling units are characterized by sturdiness, flexibility, reliability and a deep industrialization, which allows to guarantee speed in delivery times while not renouncing to extreme versatility and multiplicity of configuration.

These features make it possible to maximize the combination of required performance, air crossing speed on the batteries, dimensional compactness and investment containment.

The 23MK series air handling units are available for a range of capacities between 1000 and 80000 m^3 / h and with total pressures up to 2500 Pa. However, in special execution units with higher values of flow rate and pressure can be made, based on specific customer requirements.

The details make the difference



STRUCTURAL PROFILES

Exclusive Mekar "***MK-Pro 2.0***" aluminum profile, specially designed and developed to optimize the construction aspect of the range. Available in the aluminum version with natural finish or in anodized aluminum, in the version with or without thermal break.

1

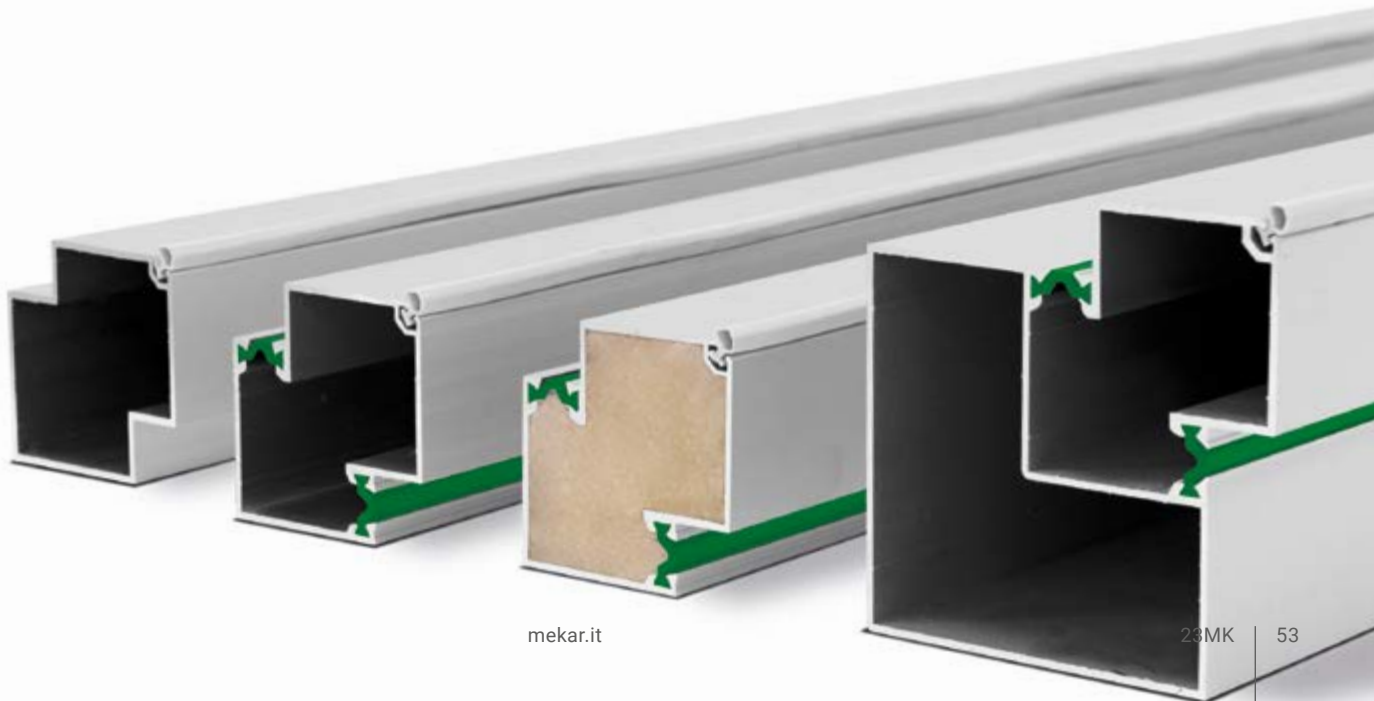
1The thermal cut is guaranteed by inserting a breaker segment made of extruded polyamide thermal conductivity 0.30 (W/m°K), which guarantees an optimal compromise between structural strength and maximum insulation capacity. Is also possible to select the profile even in the configuration injected with polyurethane foam density 45 kg/m^3, thermal conductivity 0.024 (W/m°K).

2

The particular conformation of the geometries and the constructive choices adopted make it possible to completely reduce the contact between external and internal surfaces, thus guaranteeing a total thermal bridge paneling.

3

The sealing gasket directly integrated on the corner profile allows to completely avoid the contact between the treated air inside the unit and the external surface.
In addition, the gasket eliminates the presence of the typical gap between the panels, guaranteeing a continuous surface, free of gaps where dirt can be deposited, for the benefit of a simpler and more effective sanitizing of the surfaces.



The details make the difference

INTERNAL SURFACES

The internal surfaces are completely smooth and free of screws, since all the fixings are confined inside the aluminum profile. This avoids stagnation of dirt and makes maintenance, cleaning and sanitizing operations easier, faster and safer.

ANGULARS AND BASE

Structural corners made of injection-molded PA6 Nylon, reinforced with glass fiber or alternatively and optional, made internally in stainless steel. The base is instead made of press-bent sheet metal of high thickness and selectable in multiple variations in terms of material, thickness, finishes and heights.

PANELS AND DOORS

In order to preserve the integrity of the insulating material and facilitate cleaning operations, each screw used to fasten the panels is coupled to an insert made of Nylon, appropriately developed to guarantee the complete integrity of the paneling even in the face of multiple interventions. The unit can also be configured with multiple types of fixed or adjustable hinges, standard or thermal cut handles of the fixed type, adjustable and with safety key or ratchet latches with reinforced omega for doors under pressure.

PANELING

Sandwich panels made in a wide range of materials and with a thickness of 60mm (standard) or 100mm (optional). The construction details adopted in the exclusive geometry of the Mekar panel make it possible to reduce contact between the whole internal panel and external panel guaranteeing an excellent thermal cut, guaranteed also thanks to a suitable gasket fixed in the perimeter part of each panel.
The inner lip of the gasket ensures pressure tightness on its stop against the frame.

60 mm
(Standard)

Casing classification according to EN1886

Mechanical resistance	D1
leakage	L1
filter by-pass	F9
transmittance	T2
thermal bridges	TB2/TB3

100 mm
(Optional)

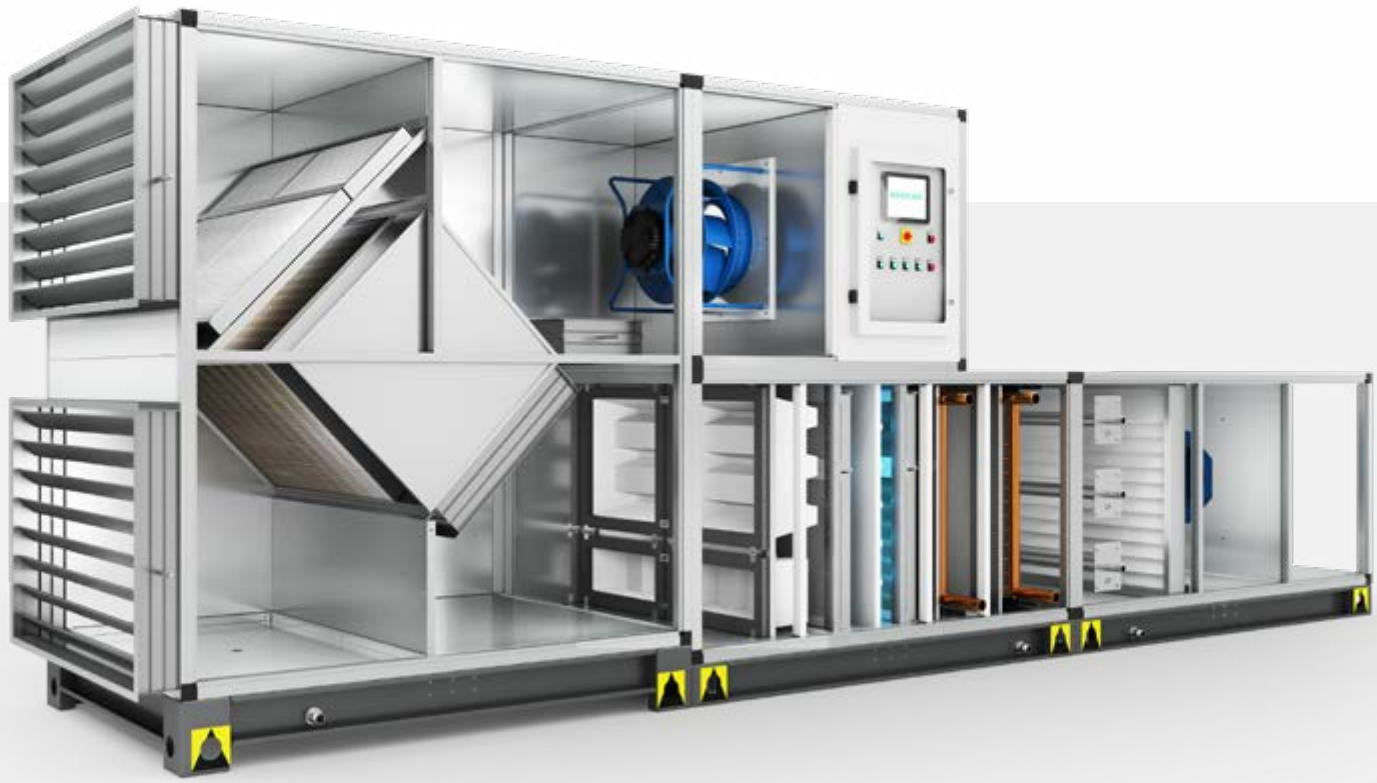
Classificazione casing secondo EN1886

Mechanical resistance	D1
leakage	L1
filter by-pass	F9
transmittance	T1
thermal bridges	TB2

THERMAL-ACOUSTIC INSULATION

Configurable in two alternatives, with insulation in injected polyurethane foam density 45 kg/m^3, thermal conductivity 0.024 (W/m°K) and reaction class to fire B2 or with mineral wool insulation density 90 kg/m^3, thermal conductivity 0.039 (W/m°K) which offers excellent performance in terms of thermal / acoustic insulation and excellent fire behavior with reaction class A1.

Innovation and constant search for maximum efficiency



For over 45 years we have been committed to research, design and production of solutions that aim to provide efficient, reliable, high-performance products in line with the most stringent regulations in force.
To always try to achieve these goals, we strongly value the aspect of continuous evolution and research, in order to develop, evaluate and validate increasingly innovative solutions, able to respond to the multiple needs of a constantly changing market. Thanks to a dedicated engineering, a team of highly specialized technicians and a profitable collaboration with partners and suppliers, we are now able to offer excellent solutions, which allow us to express the best results obtainable in the world of air treatment, in timely and dedicated to the individual specifications dictated by the customer.

To follow, a brief introduction of some of the solutions that can be implemented in Mekar air handling units and which aim to offer the most innovative solutions available on the market today.

FOCUS POINT

Efficiency

Air quality

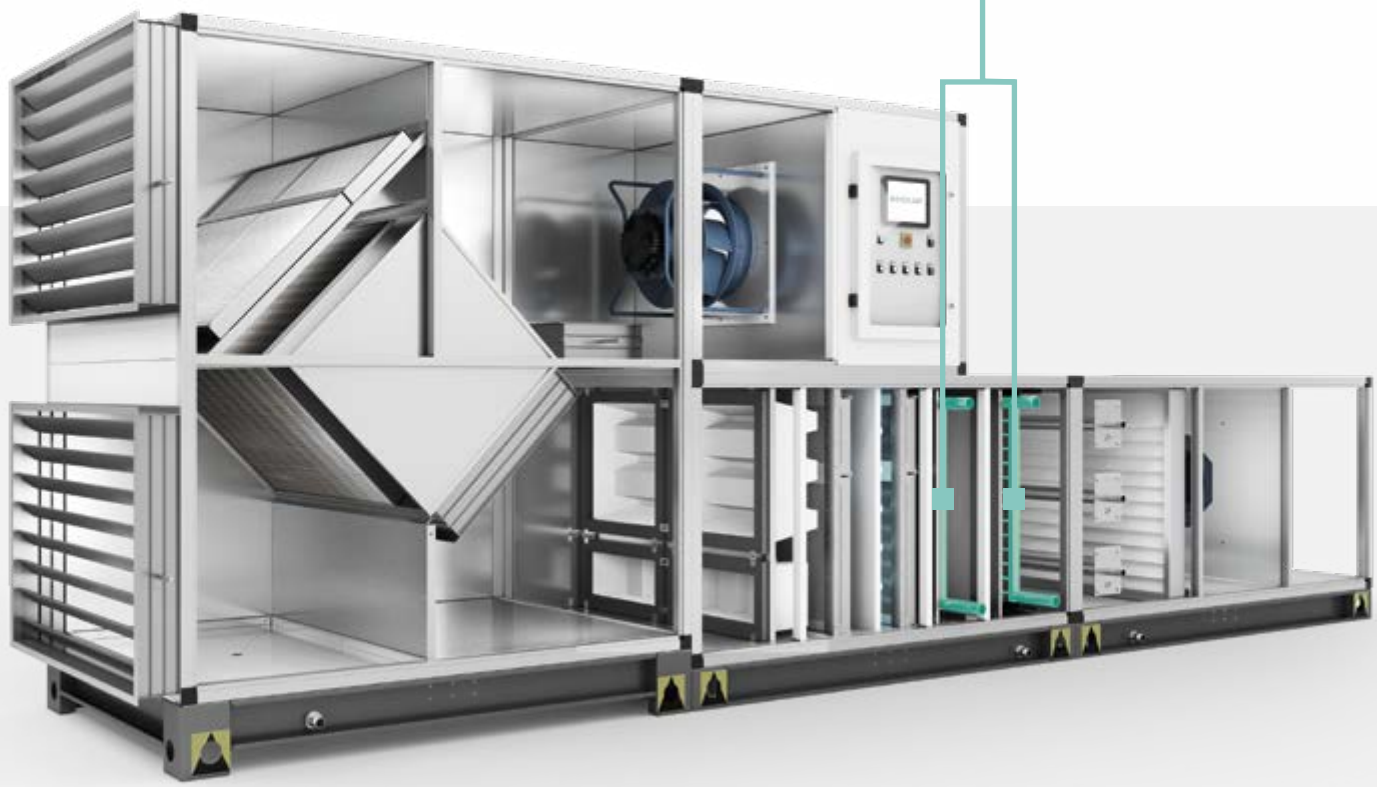
Reliability

Energy saving

Punctual management

Focus Point

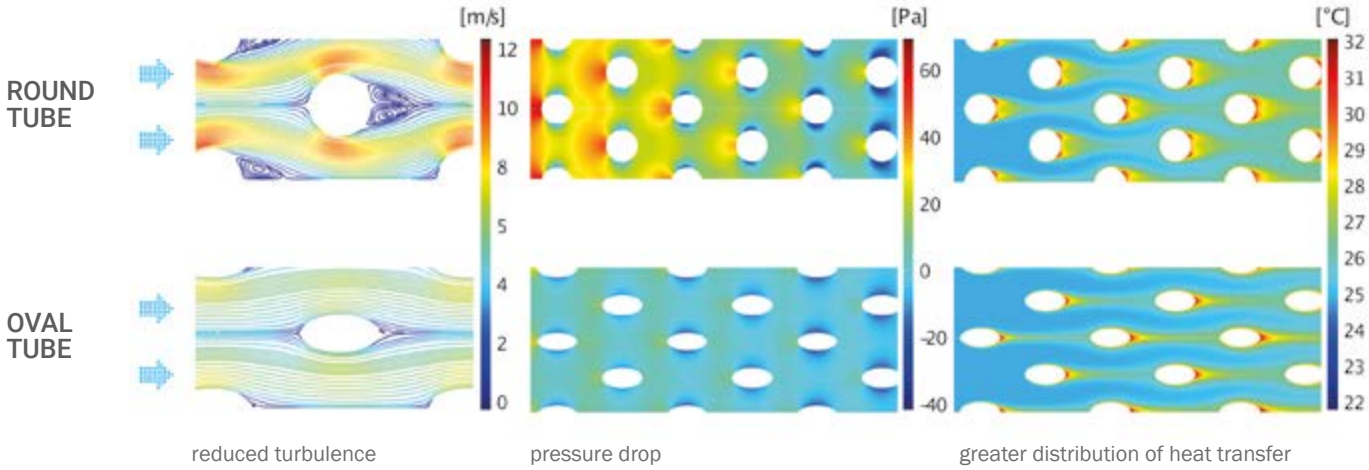
OVAL TUBE TECHNOLOGY



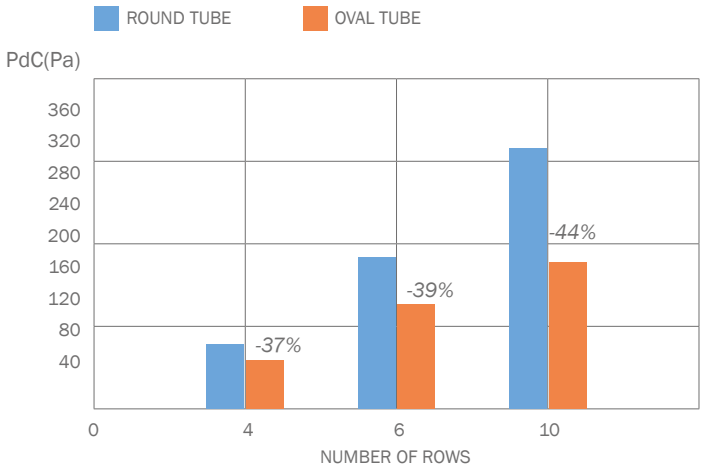
Energy efficiency in buildings is forcing heat-carrying fluid generators to work with increasingly lower thermal levels in order to increase the performance of the generators themselves. Consequently, for the same power output, the heat exchange battery of the CTA requires a greater surface area to the detriment of the load losses and therefore of the overall electrical absorption of the CTA.

It is for these reasons that MEKAR, as an alternative to the traditional round tube heat exchangers, proposes the OVAL TUBE technology which guarantees an improvement in performance up to 15% and a reduction in air side pressure losses over 40%.

Round tube vs oval tube

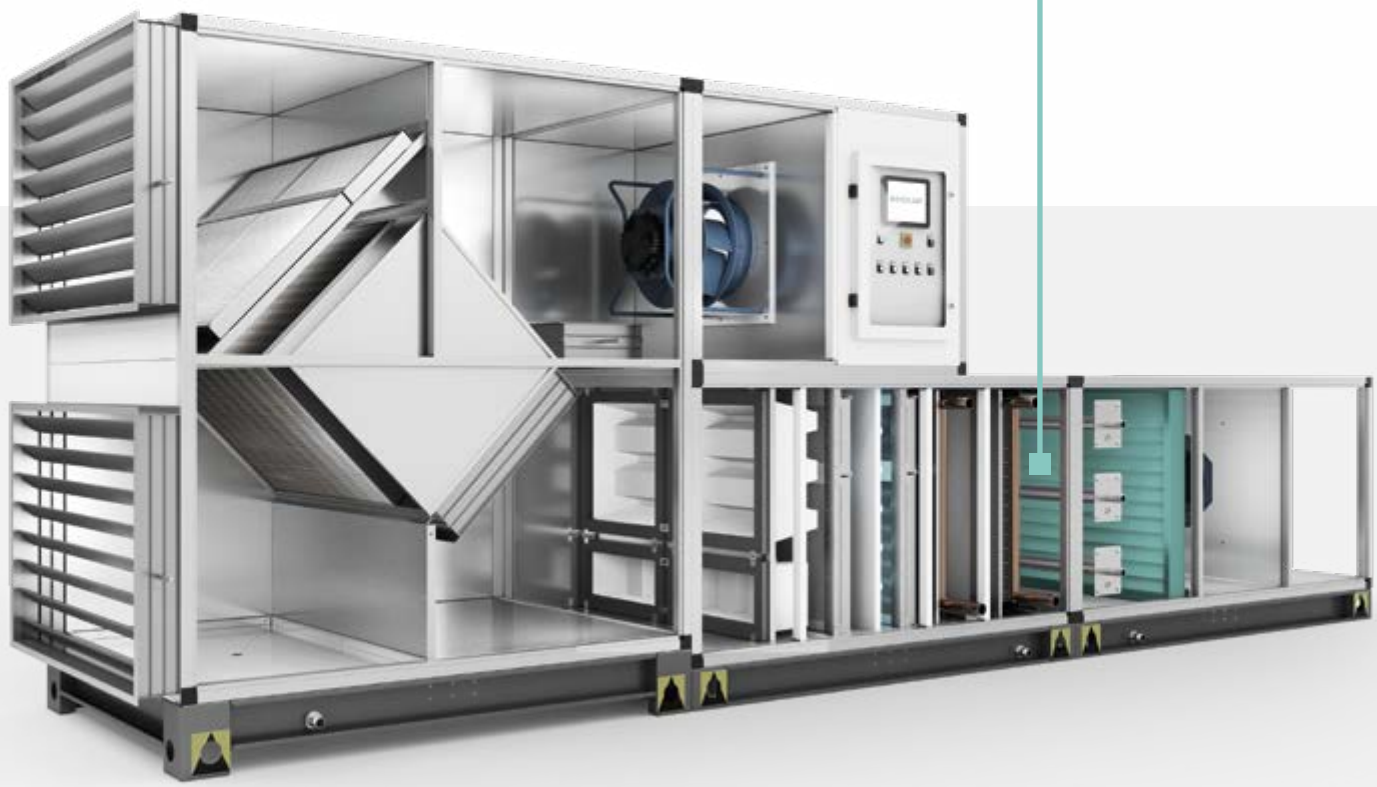


Air side pressure drop



Focus Point

HYBRID ADIABATIC HUMIDIFICATION



Water is a precious commodity and the efficiency of humidification systems inside CTAs is important to avoid waste especially in production systems with reverse osmosis.

Adiabatic humidification system that combines the use of atomization nozzles, capable of generating a homogeneous mist, which evaporates along the process at a subsequent stage composed of ceramic elements that absorb the remaining water and completely re-evaporate it .
The features and the main benefits of this innovative system are listed below:

- 95% humidification efficiency
- Reduced absorption lengths (from 60 cm)
- Low air side pressure drop (40 Pa at 2 / ms)
- Absence of aerosol components in the air
- Institut Fresenius and VDI 6022 certification
- Patented silver ionization group
- Reduced electricity consumption
- Reduced maintenance
- Easy and quick installation

Two adiabatic methods, cleverly combined.

Hybrid humidification is based exclusively on the advantages of two types of humidification such as atomization and evaporation. In this way there is a lasting solution to the problems that may occur in the event of separate use of these techniques. In terms of hygiene, energy efficiency and economy, the humidification system is therefore the first choice.

Atomization

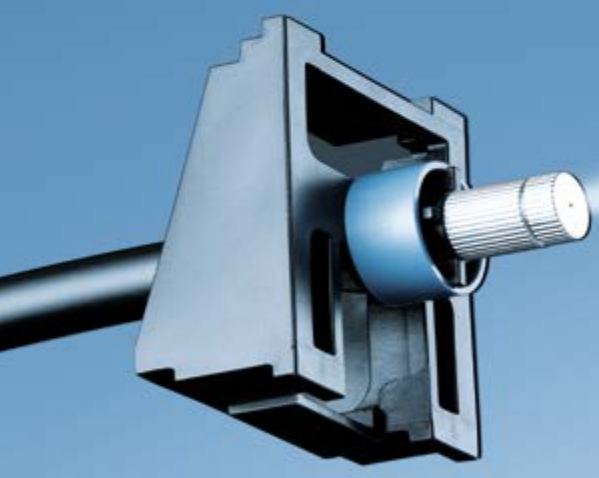
Humidification water is atomized by low-pressure molecular atomizers. The atomising nozzles have an adjustable spray mist and are optimally distributed over the entire section of the appliance. This arrangement allows a high evaporation effect and a homogeneous distribution of humidity.

Evaporation

The patented evaporation unit in high-quality ceramic is located at the end of the humidification section. It captures the humidification water and achieves the best possible post-evaporation. The ceramic allows the maximum use of the precious humidification water. At the same time it prevents the accumulation of water in the downstream components.
Hybrid humidification always guarantees air free of aerosols and hygienically humidified

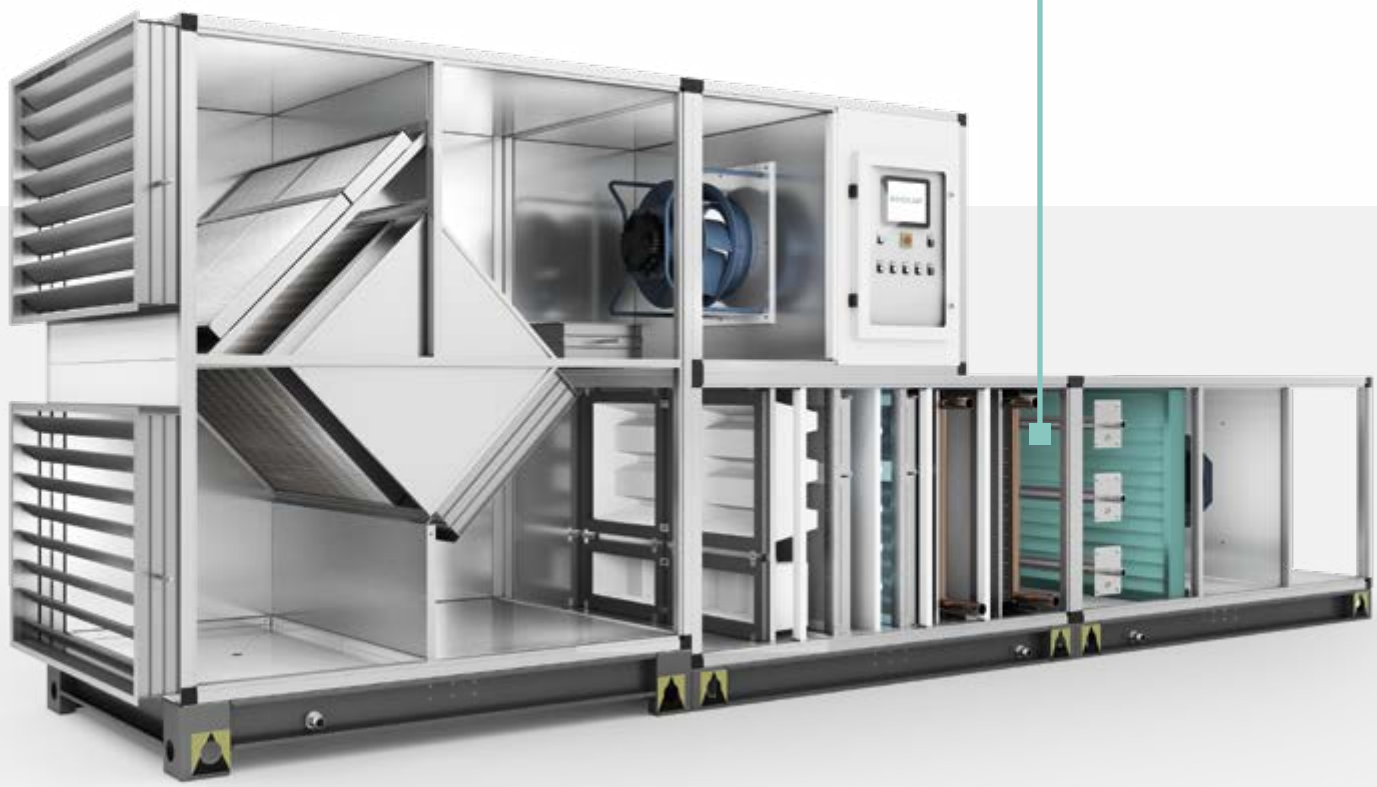
Adjustable molecular atomizing nozzles

Low pressure operation already allows considerable energy savings, thanks to low compression work.
Low-pressure molecular nozzles work in the range of 2 to 10 bar in an absolutely wear-free way.
The nozzle itself is housed on a flexible carrier clip that can be adjusted in a straight position or with an angle of 15°.
The nozzle spray cone can therefore be directed so that even the humidification water reaches the evaporation ceramic completely in the peripheral critical areas.



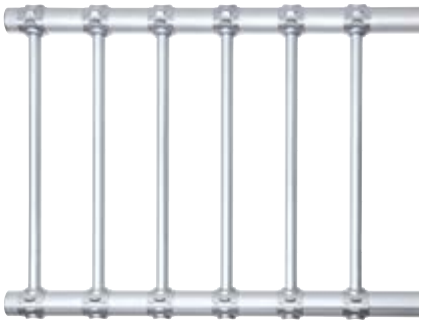
Focus Point

COMPACT ISOTHERMAL HUMIDIFICATION



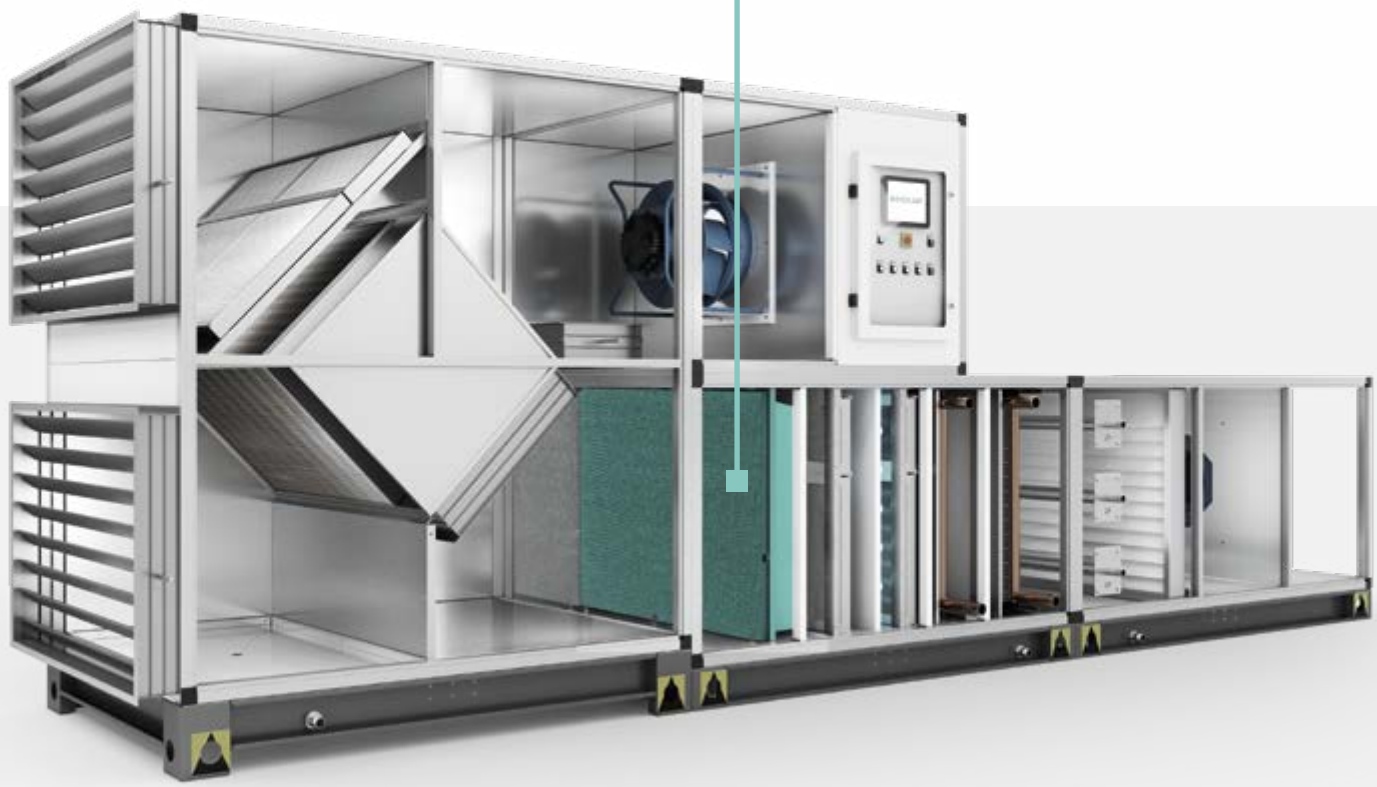
Always with great attention to space, MEKAR offers a multi-lance steam distribution system that reduces absorption distances compared to traditional steam distribution systems.
The patented central flow injectors nozzles extract the steam from the center of the distribution pipes, where it is hot and drier. In this way it is ensured that the steam is introduced into the humidification section without the formation of drops. Otherwise, when the steam touches the cooler outer surfaces of the tubes, it may condense.

A uniform distribution of the nozzles through the entire distribution system ensures a homogeneous exit in the air flow and reduces the humidification path compared to traditional steam pipes.



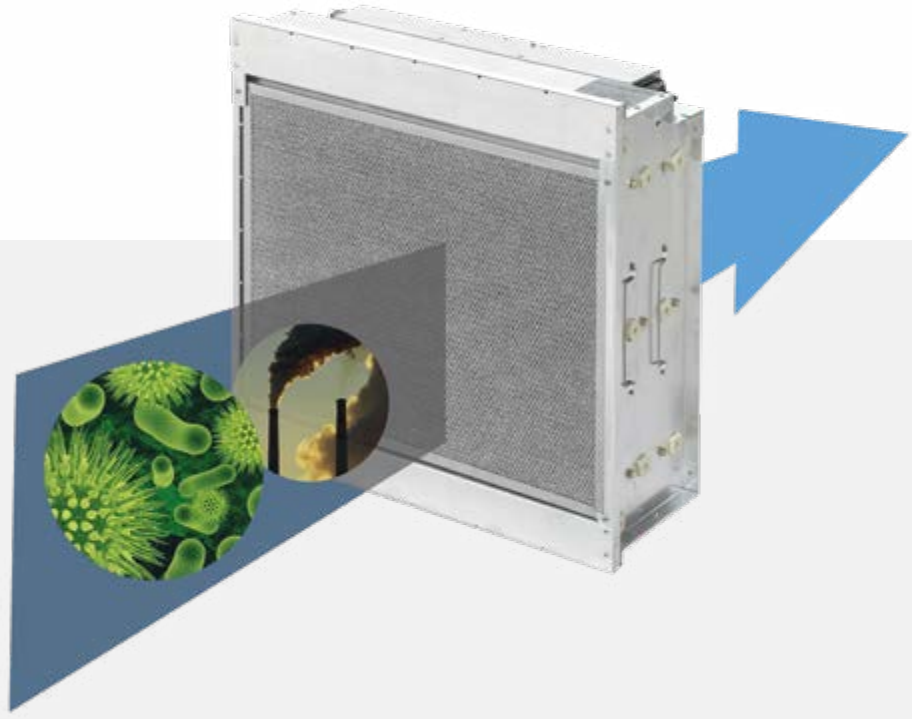
Focus Point

ELECTROSTATIC FILTRATION



With the ultimate aim of guaranteeing a filtration characterized by maximum efficiencies and able to meet the increasingly stringent energy saving requirements, Mekar can also supply units equipped with an innovative type of extremely high performance filters and certified according to UNI EN ISO16890. The high-efficiency electrostatic filtration systems are already widely used and tested in civil and industrial environments and are based on the phenomenon of electrostatic precipitation characterized by different pluses including:

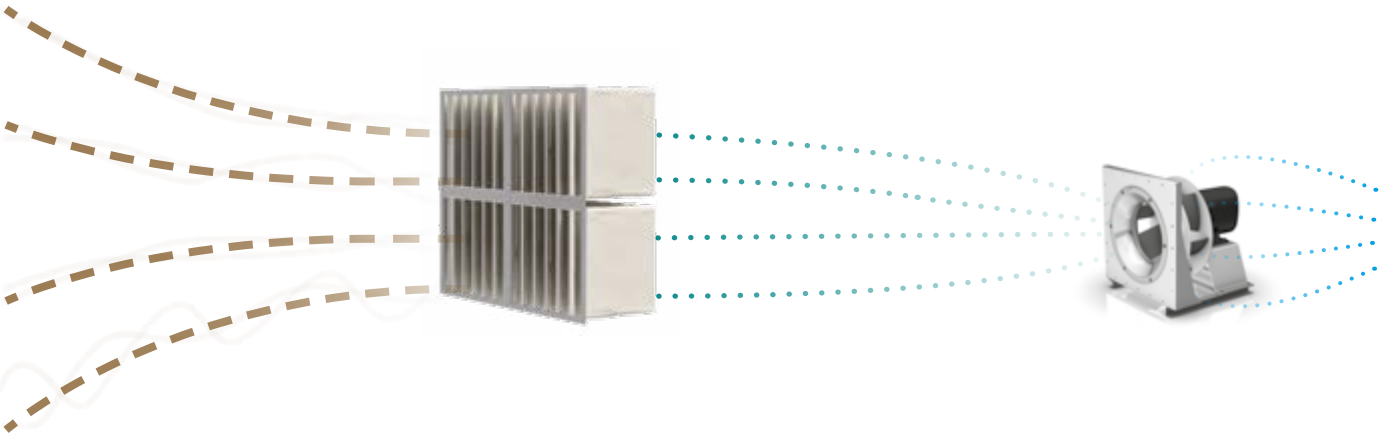
1. Extremely high filtration efficiencies, with efficiencies greater than 99%.
2. Contemporary removal of microorganisms such as bacteria, yeasts, molds and germs.
3. Negligible load losses through the filter.
4. Duration of filters equal to the useful life of the entire unit, with minimum maintenance requirements.
5. Very high degree of product reliability.



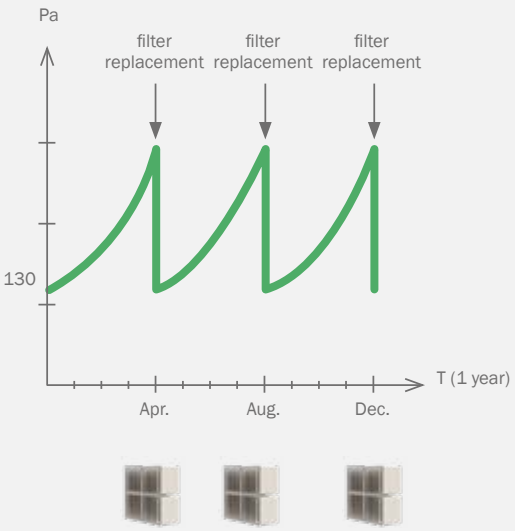
All this allows the recovery in a very short time of the major initial investment compared to a traditional filtration system, for example of the pocket type, thanks to the reduction of the electric consumption of the ventilating sections, since the load losses are very low, and to the costs for maintenance extremely inferior, since periodic replacement of the filters is not necessary.
Practical cases show that the return on investment typically occurs in a few months.
With the new UNI EN ISO 16890 classification, the electrostatic filter proposed by MEKAR is the only air filter with real energy classification A + over time.

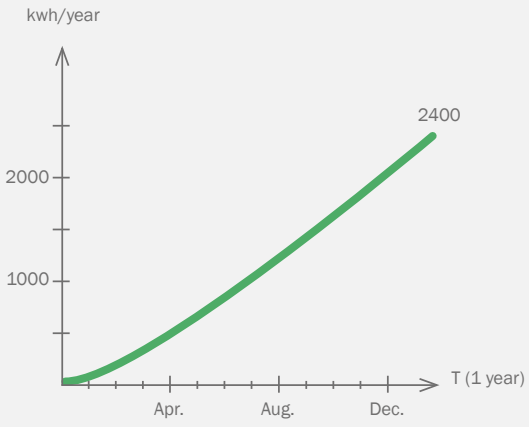
Case Study

Unit equipped with pocket filter

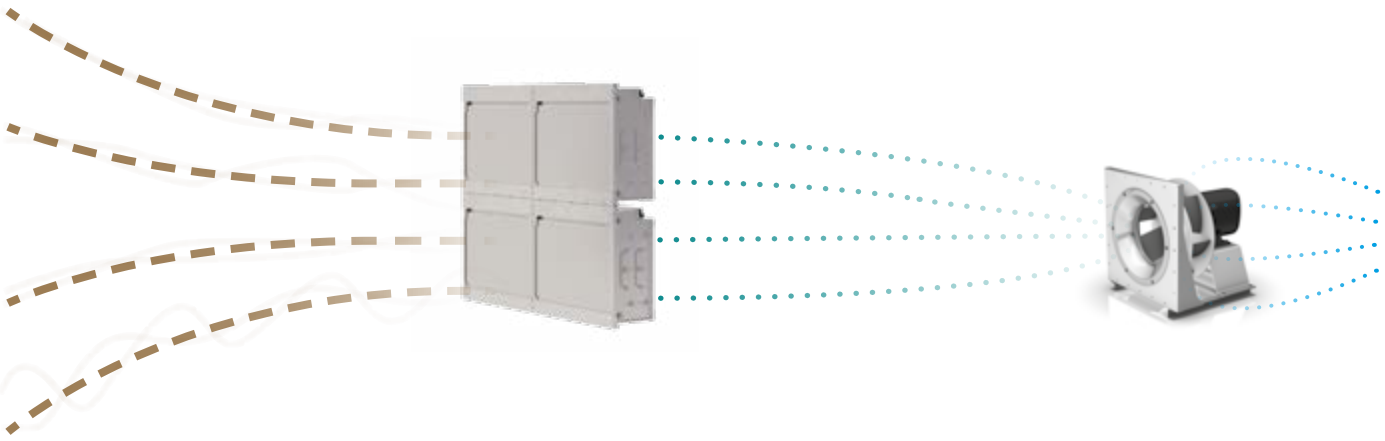


Energetic class	Consumption (kwh/a)	Filtration class EN ISO 16890	Initial load loss (Pa)	Final load loss (Pa)	Annual replacement
C	2400	ePM_1 70%	130	300	3



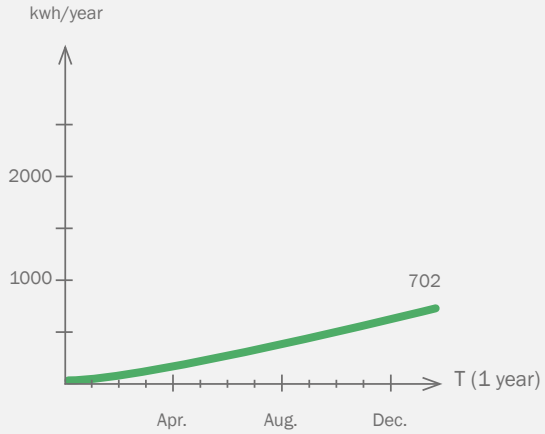


Unit equipped with electrostatic filter



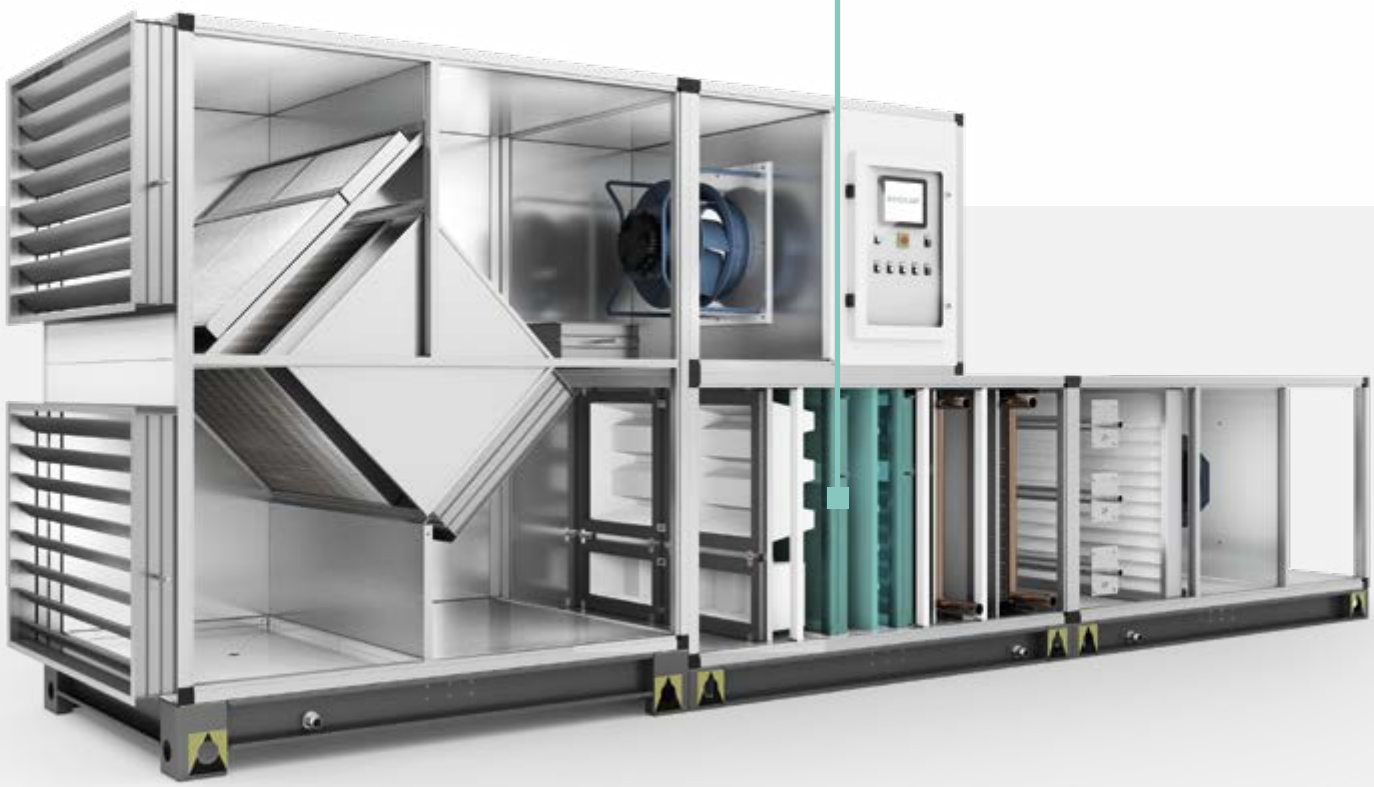
Energetic class	Consumption (kwh/a)	Filtration class EN ISO 16890	Initial load loss (Pa)	Final load loss (Pa)	Annual replacement
A+	702	ePM_1 70%	44	64	0

Data refer to the single filter cell with an air flow of 3,400 m^3 / h and operation of 6,000 hours.



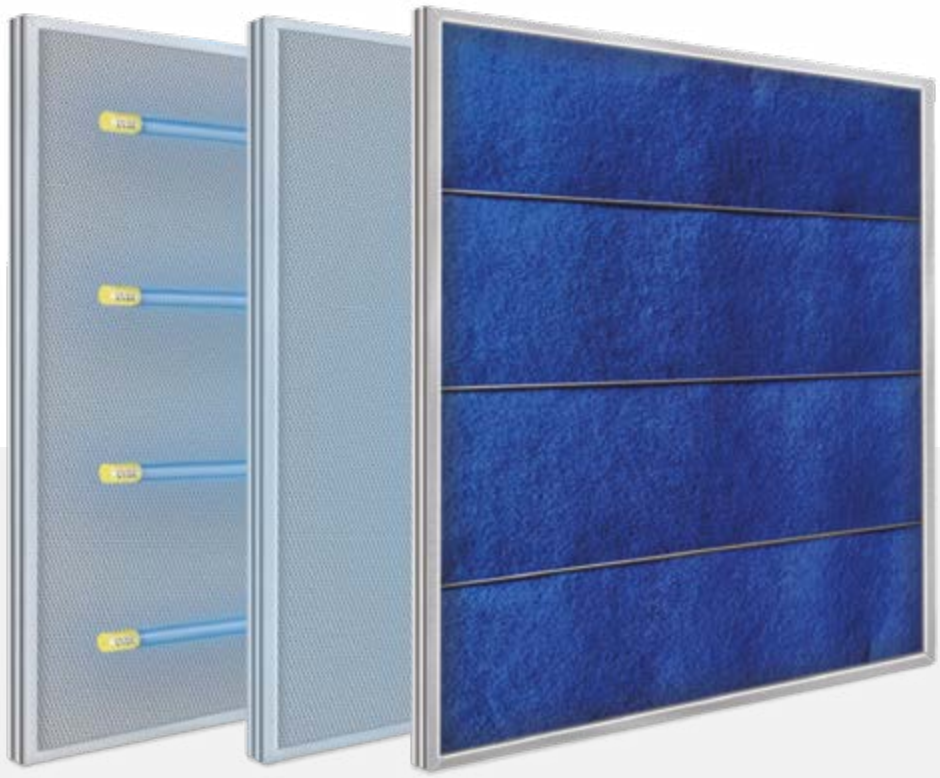
Focus Point

PHOTO-CATALYTIC OXIDATION SYSTEM



A complete sanitization, through the Photo-Catalytic Oxidation System

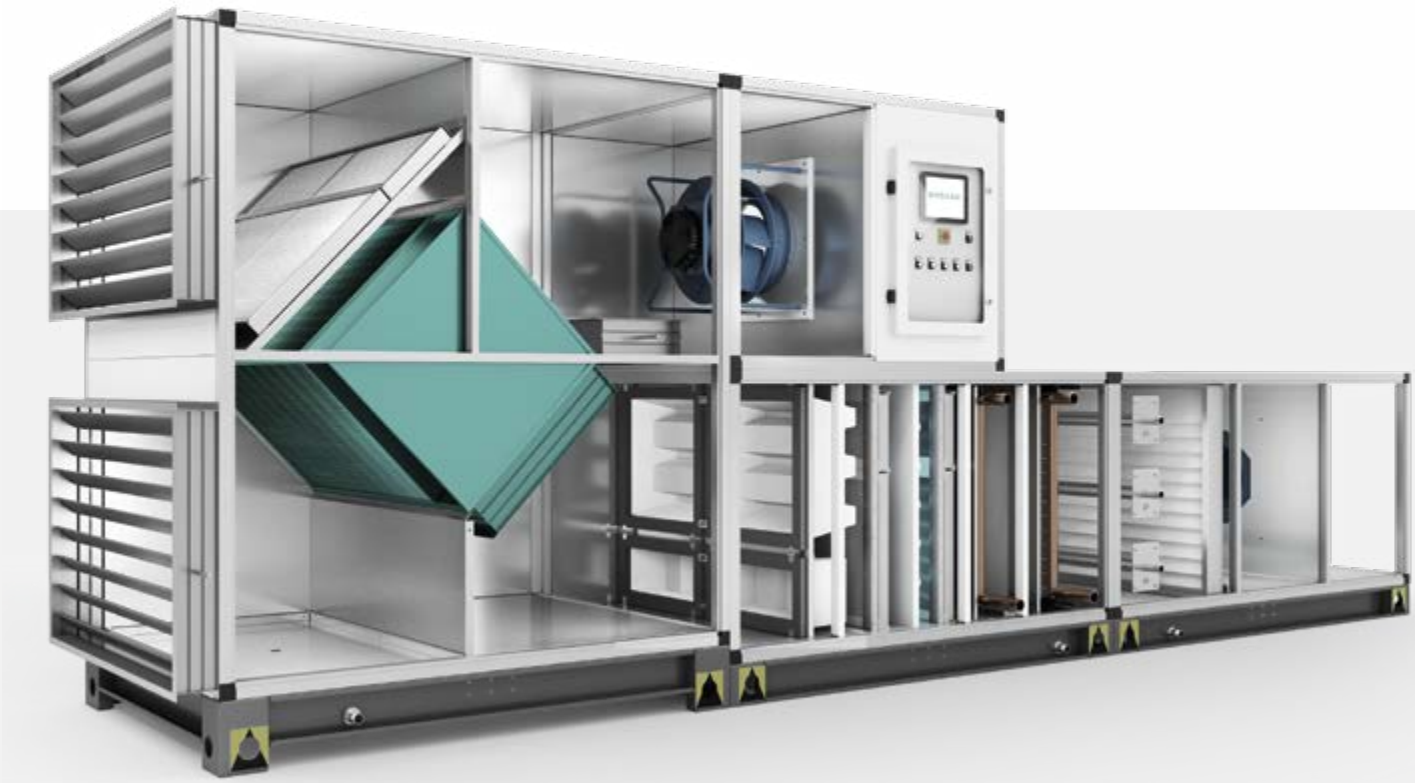
The Photo-Catalytic Oxidation System is a technology studied for over 20 years and applied and validated in multiple applications on an international scale. It is mainly based on the use of titanium dioxide as a photographic catalyst in synergy with a powerful UVC light capable of generating powerful oxidizing hydroxyl radicals and superoxide ions that destroy gaseous contaminants.
All reactions occur on the surface of the photo-catalyst in the air flow path ensuring 100% contact with all contaminants



The mechanism of operation occurs through a chemical and biological destruction deriving from a photo-catalytic oxidation process (PCO) that reduces and destroys gaseous contaminants, VOCs and odor molecules. Everything happens through a powerful UVC light, able to break down the DNA of all biological microorganisms (molds / fungi, bacteria and viruses) making them no longer vital and therefore no longer able to reproduce, proliferate and therefore infect.

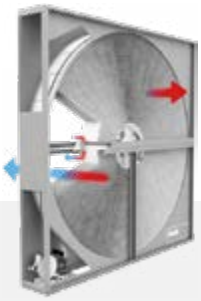
This process, besides being particularly efficient and efficient, guarantees the total absence of ozone.

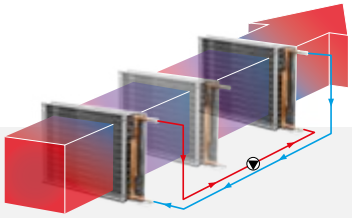
Innovation and constant search for maximum efficiency



For us, efficiency means guaranteeing ideal comfort while reducing energy expenditure, in order to limit operating costs and preserve the environment by reducing CO_2 emissions.

To achieve this goal, we rely on innovative design choices, which we apply rigorously and consistently in our product ranges in order to be able to provide solutions capable of meeting the ever-increasing demands for high efficiency required today by the market.





CURRENT PLATE HEAT EXCHANGERS

Aluminum plate heat exchanger in counter-current that allows to increase the volume of exchanged air, guaranteeing very high recovery efficiency, reducing the overall dimensions, ensuring robustness and high resistance values to the differential pressure with a recovery efficiency up to 93% .

Through such high efficiency values it is possible to compensate the electric consumption values of the fans, thus allowing to configure more compact air handling units.

ROTARY ENTHALPIC HEAT EXCHANGERS

Rotary heat exchangers that allow the exchange not only of heat, but also of humidity. Desiccant wheel to transfer sensitive and latent thermal energy with very high efficiency.

Aluminum matrix coated for moisture transmission in winter and summer, consisting of a cylindrical rotor and a containment frame complete with special seals to minimize the leakage between the inflow and expulsion air flows.

Also available with specific treatments to work in an aggressive atmosphere, such as applications located in coastal areas.

SINGLE-FLOW ENERGY TRANSFER SYSTEM

The use of the S.E.T. System allows significant energy savings with double benefits: eliminates post-heating needs in the summer and reduces the need for refrigeration compared to traditional cross-flow recovery systems

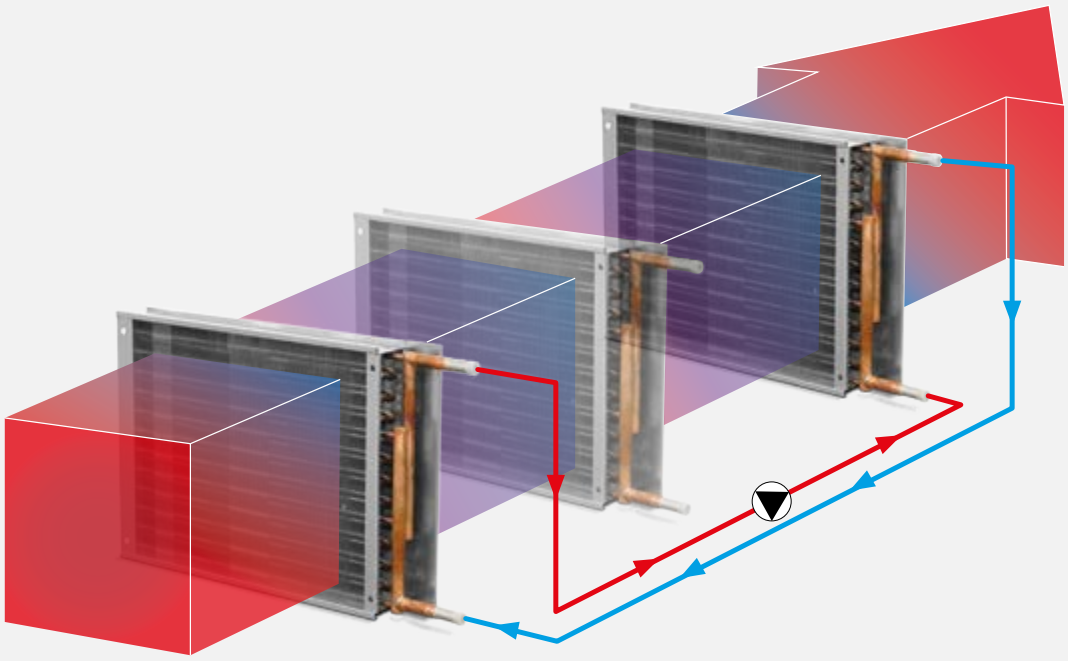
The level of COP in recovery is very high, and it is essentially due to an important power recovered in the face of very low pressure drops, offering higher seasonal energy savings compared to traditional recovery systems

Focus Point

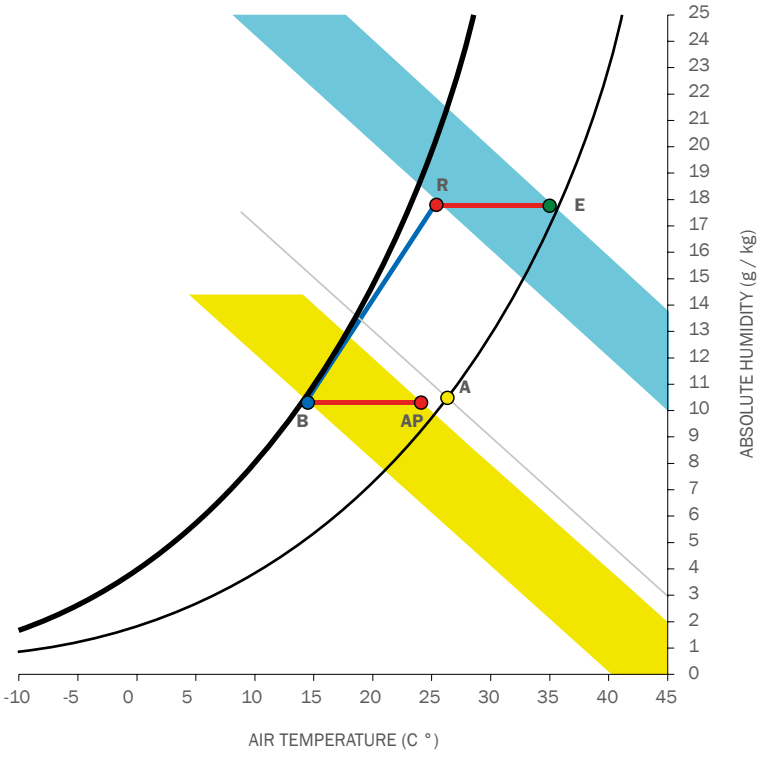
SINGLE-FLOW ENERGY TRANSFER SYSTEM

S.E.T. System It consists of a dual battery system hydraulically circulated on the summer cooling coil: the heat of the hot air entering the system is captured by the first battery and then transferred via a circulator to the post-heating battery. There is therefore a double benefit: both the reduction of the post-heating requirement and the reduction of the cooling requirement through the pre-cooling operated by the first coil.

SET. System is a recovery system that can be used only in the summer season. The heat recovery unit in the summer season is mainly bypassed to allow correct operation of the S.E.T. System



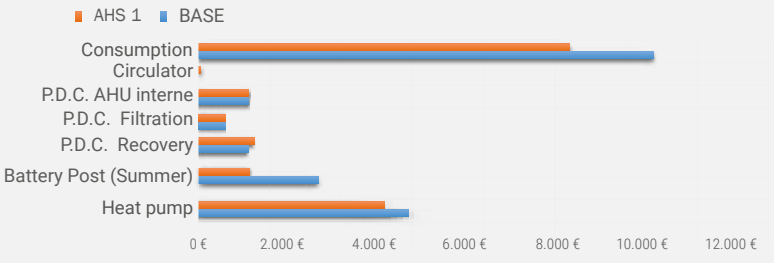
Transformation Psicro-metrica S.E.T. System

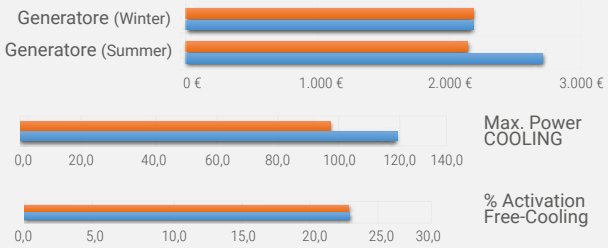


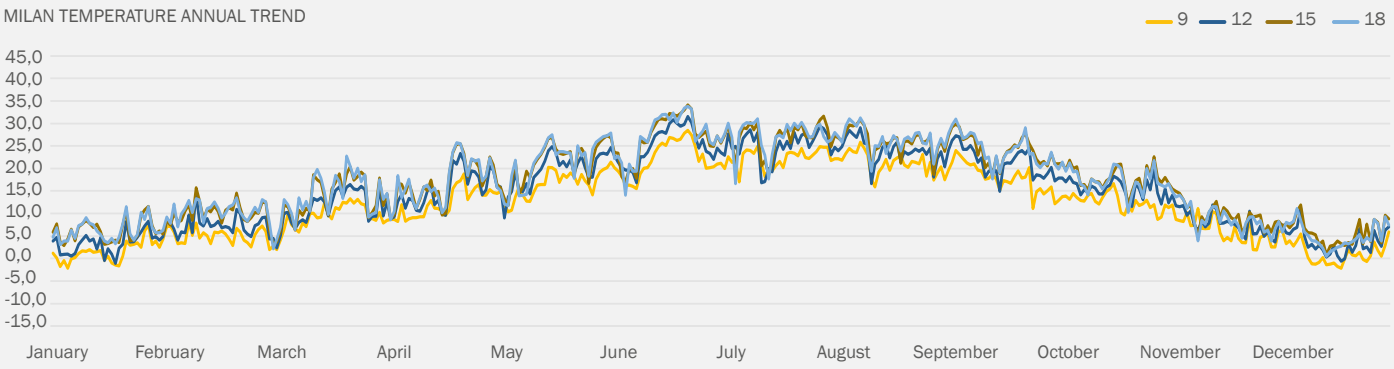
The share of pre-cooling energy (E-R) is transferred to the post-heating (B-AP)

Annual energy analysis

The following data refer to:
UTA flow: 10.000 cm/h, City: Milano, Costs Energy Consumption: 0.17 €/kW, Methane Cost: 0.85 €/mc
Summer Post: Boiler/Boiler | Filter: Fiber/Fiber | Battery: Round/Round

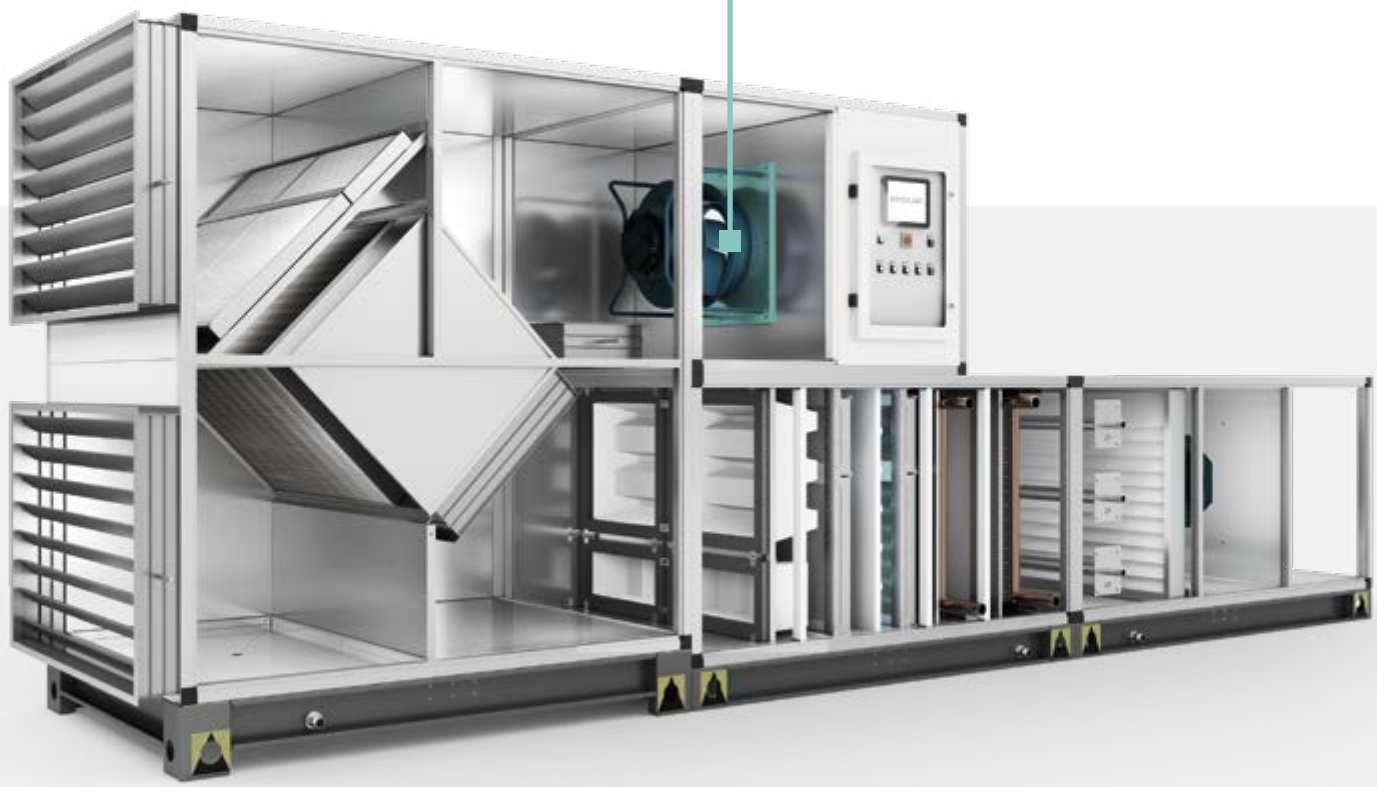






Focus Point

FAN WALL SYSTEM

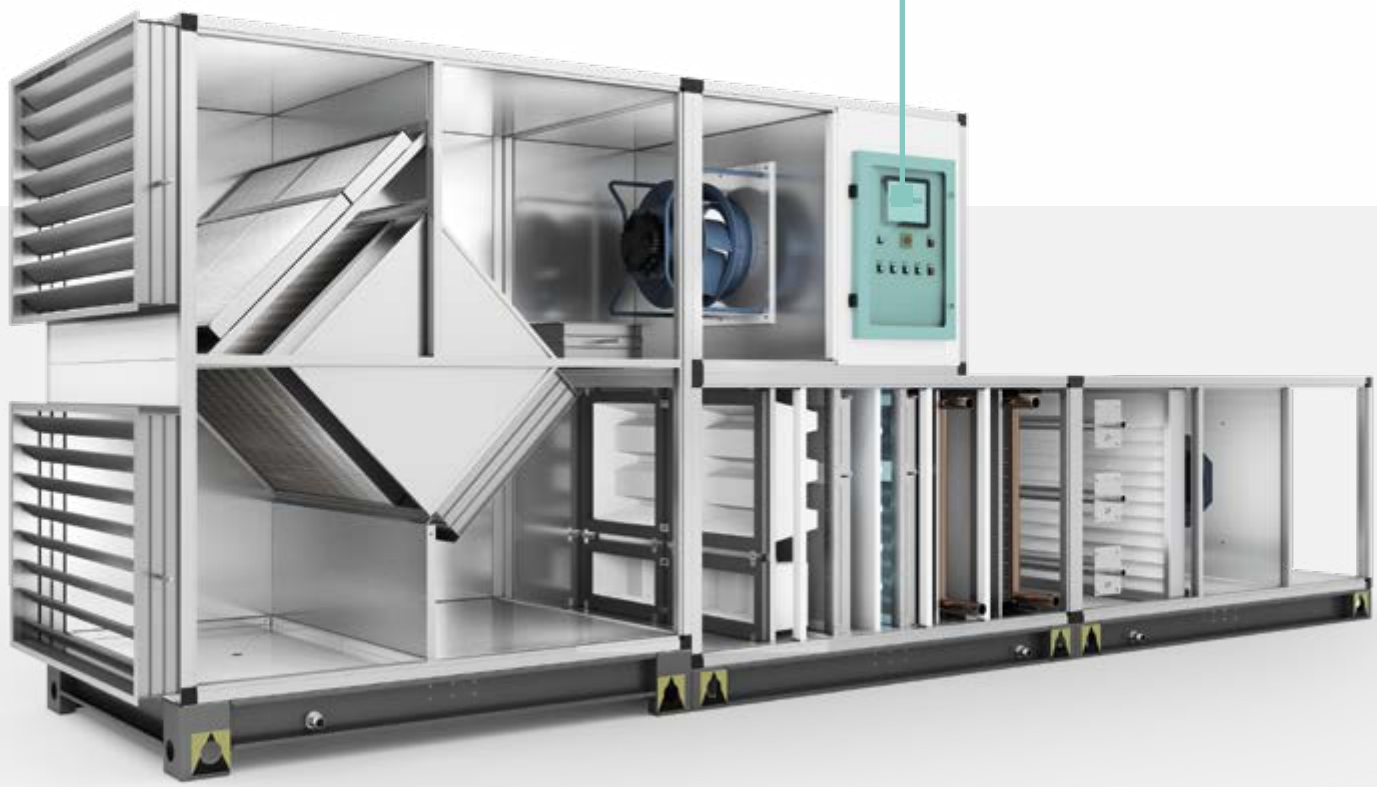


The Mekar range of products, in addition to being equipped with high-performance plug fan or external rotor motor fans, can also be configured with the innovative **Fan Wall System** solution that ensures significant benefits including:

- redundancy and guarantee of operations
- ease of maintenance and handling
- reduction of consumption
- greater compactness of the unit
- uniformity of the air flow on the exchangers

Focus Point

CONTROL SYSTEM



DeviceNet · EtherNet/IP · PROFINET · PROFIBUS · KNX · WebServer

M-Bus · Modbus · BACnet · CANopen · LonWorks · SNMP

We aim to provide integrated, functional and complete solutions capable of responding to the most specific needs, with considerable added value and reliability for our customers.

For this reason, over the years MEKAR has also specialized in the supply of complete regulation and wiring products, all made directly in the company by highly qualified personnel and technicians specialized and able to satisfy any control request. A complete 360° service, which ranges from the development of the customer's specific requests, to the design and parameterization, up to the installation of the elements and the power and control panel in order to guarantee an accurate performance management and a timely reading of the parameters psychometric.

The configuration of the functionalities and accessories can be done directly through the Mekar selection software, which allows the configuration of the solution in terms of regulation more suited to one's needs

The possibility of offering complete adjustment units, in addition to guaranteeing the customer a Plug&Play solution, allows the use of a product that has been fully tested and calibrated directly in the company, allowing not only a considerable saving in installation times but also a greater guarantee of functionality and reliability of the product, all managed and supplied by a single interlocutor.

Mekar, through its network of service centers distributed throughout the national territory, and thanks to specialized internal technicians, is also able to offer a complete support service as far as concerns on-site assistance, whether it relates to start-up or to assistance services in general.

23MK-Hy

Air handling unit for hospital applications

DIN 1946-4

When the field of application of air handling units is critical which the hospital environment the cleanliness and hygiene requirements that must be guaranteed become stringent.

Mekar has developed and certified a specially dedicated range able to comply with the specifications of the DIN 1946-4 standard, which applies to planning, construction, testing and operation (including maintenance) of ventilation and air conditioning systems air in buildings and in health care rooms, and in which medical examinations, treatments and surgical operations are performed on people, as well as in directly connected rooms.

23MK-Hy

Air handling unit for hospital applications

TÜV NORD

CERTIFICATE

Permission to use the test mark

VOLUNTARY TEST OF HYGIENE REQUIREMENTS

TESTED HYGIENE SUITABILITY OF AIR HANDLING UNITS

TÜV NORD Systems GmbH & Co. KG, Hamburg, Germany,

hereby confirms that the Air Handling Unit in Hygienic Version of the range

"23MK-H"

conforms to the requirements set by TÜV NORD Systems GmbH & Co. KG.

Mekar S.r.l., Isola della Scala (VR), Italy,

is therefore granted the right to use the test mark shown below in connection with the above-mentioned product.

TÜV NORD Systems GmbH & Co. KG
Expert of Testing Laboratory for Ventilation, Air-Conditioning and Refrigeration

Dipl.-Ing. Vera Gräff

Essen, 23 February 2015

Tested compliance with the device-specific hygiene requirements according to:

- DIN 1946 Part 4 : 2008
- VDI 6022 Part 1 : 2011
- ÖNORM H6020 : 2007
- ÖNORM H6021 : 2003
- SWKI 99-3 : 2003
- SWKI VA104-1 : 2008

In further consideration of:

- DIN EN 1751 : 2014
- DIN EN 1886 : 2009
- DIN EN 13053 : 2012
- DIN EN 13779 : 2007
- VDI 3803 : 2010

Tested Hygiene Suitability of Air Handling Units

SEPT/2154/14

The validity of the Certificate is laid down in the Agreement concerning the granting of entitlement to use a TÜV NORD test mark.

DIN 1946-4

The HY series guarantees construction standards certified according to this legislation, in particular:

- Internal surfaces and components in AISI 304 steel
- Smooth internal surfaces to ensure complete product sanitation
- Minimum space of respect at the various sections
- Simplification and facilitation of access necessary for maintenance and cleaning
- Extractable components (batteries, fans, silencers, etc.)
- Dampers conforming to class 2 EN 1751
- Double or triple filtration stage (F7, F9 and H13); UV-C lamps
- VDI 6022 certified steam or atomised water humidifiers
- Inclined tanks and draining bottoms
- Extractable components to facilitate maintenance and cleaning operations
- Use of intrinsically safe and hypoallergenic materials
- Full guarantee of operation and high efficiency
- Fans in stand-by and directly coupled
- High degree of resistance to air leakage

Dust accumulation limits

Smooth monobloc filter frames

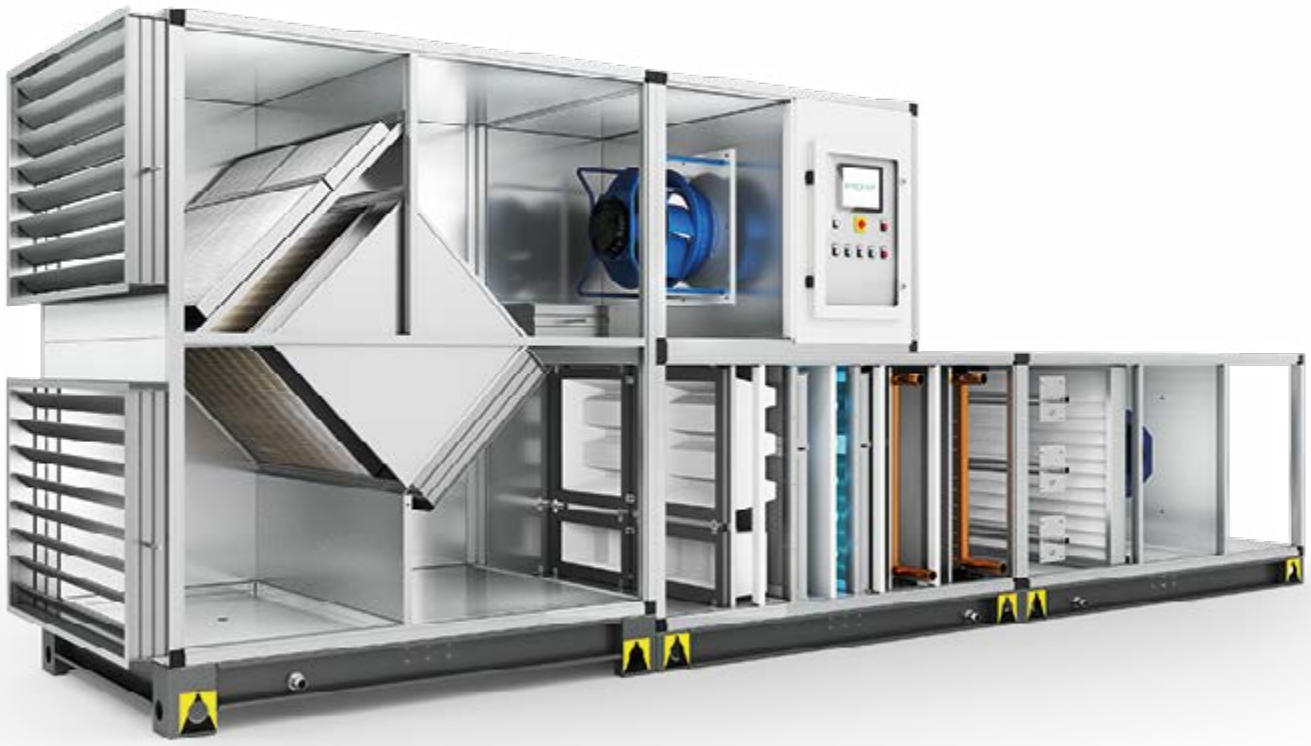
The filter cells (of the rigid pocket type in the example, but the solution is validly applicable also to absolute filters) are fixed to a smooth frame made of sandwich paneling; this guarantees maximum rigidity, and therefore maximum sealing of the gaskets, without presenting gaps and sharp edges where dust can deposit. The frame is also more easily washable than standard frames.

Frame and internal profile with double seal

The inside of the plant is completely smooth, with few joints and no visible screws. The gasket mounted on the aluminum profiles prevents the contact between the air and the angular profile, improving the cutting of the thermal bridges, further reduces air leaks and prevents the accumulation of dust by eliminating the cracks.

“Plug” type fans (without auger)

The absence of the auger limits the interstices where dust can accumulate and in any case the fan is completely visible, controllable and clean. The “plug” type fan is also better suited to a configuration of the pressurized air handling unit as it ensures a more uniform distribution of the air on the downstream components.



Adequate filtration

Air cleaning classes for particles according to ISO 14644-1

Class		Maximum concentration limit in number of particles / m^3 of air					
ISO (N)	F.S.209 D	0.1 µm	0.2 µm	0.3 µm	0.5 µm	1 µm	5 µm
ISO 1		10	2				
ISO 2		100	24	10	4		
ISO 3	1	1'000	237	102	35	8	
ISO 4	10	10'000	2'370	1'020	352	83	
ISO 5	100	100'000	23'700	10'200	3'520	832	29
ISO 6	1'000	1'000'000	237'000	102'000	35'200	8'320	293
ISO 7	10'000				352'000	83'200	2'930
ISO 8	100'000				3'520'000	832'000	29'300
ISO 9					35'200'000	8'320'000	293'000

Sequence of filtration classes in the cleanroom

Air cleaning class (ISO 14644-1)	Degree of air cleaning (F.S.209 D)	Air spares (vol / h)	Sequence of filtration classes for the various stages				
			I	II	III	IV	V *
ISO 3	1	360-600	G4	F8		H12	U17
ISO 4	10	300-540	G4	F8		H10	U16
ISO 5	100	240-480	G4	F7	F9		U16
ISO 6	1'000	40-120	G3	F7	F9		H14
ISO 7	10'000	20-40	G3	F6	F8	H13	
ISO 8	100'000	10-20	G3	F6	F8	H12	

* The last stage in the cleanroom, not in the plant

High sanitation

Condensate collection tanks
Inclined completely draining to avoid water stagnation, the tanks have an inclined bottom in the sense of air for complete drainage. They are always made of stainless steel.

Central steam humidifiers and with local generator and immersed electrodes
Steam is intrinsically safe. Where there is a centralized steam production plant, the distributor tube is fed with superheated steam through a modulating control valve. For small systems it is possible to provide a saturated steam generator with immersed electrodes, with modulating operation.

Water humidifiers
A high-pressure pump allows the cold water to be sprayed into very fine drops, which immediately evaporates, leaving the inside of the plant practically dry. The nozzles can be partialised and the water flow is regulated by an inverter to obtain a modulating operation of the humidifier. Demineralized water must be used.

Dedicated sanitary sealants
The sealant, although to a modest extent, is used to ensure the air or water tightness of some components. The sealant used is anti-bacterial, anti-mold and does not contain any components which are dangerous or allergenic.

UVC lamps
The germicidal ultraviolet radiation is characterized by a band of wavelengths such as to destroy bacteria, viruses and other microorganisms, modifying their DNA or RNA and then inactivating them and preventing their reproduction. This principle allows air disinfection.

Internal construction

The maintenance of the hygienic level is guaranteed by a series of technical and design solutions, designed to ensure a high ease of cleaning operations. All surfaces and materials applied are characterized by a particular predisposition to maintain a perfect hygienic condition.
The inner part is made of AISI 304 or 316 steel and includes draining bottom panels and the dedicated drain for collecting the cleaning / disinfectant liquid. This guarantees a high standard of hygiene, through the complete drainage of liquids favored by the particular inclination of the panels.

Removable batteries

The batteries are mounted on guides and are free to be removed from both sides of the control unit once the corresponding panel has been removed.

Silent septum

The silencer septa are mounted horizontally to be individually removed laterally after removing the relative panel. Mineral wool is wrapped in waterproof plastic material and contained by a micro-perforated sheet. In this way there can be no release of fiber into the air flow and the silencer septa are washable.

Fan motor units

The fan motor unit can be completely removed from the side for cleaning or maintenance operations.

Operating safety

Anallergic Materials (Latex Free)

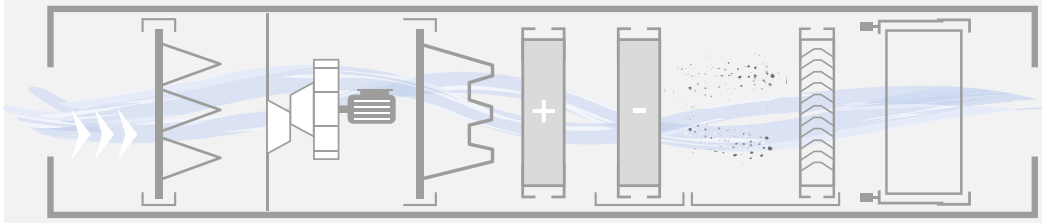
All materials and components installed on the machine are latex-free.

Ventilating sections

Dual fan 100% compartmentalized.
Where a complete stand-by unit cannot be provided, it can be considered the solution of the only safety fan unit.
The fans never work simultaneously. The inlet and outlet dampers of the stopped fan are closed. If the fan flow switch in operation indicates a lack of air flow, its dampers will close, those of the other fan will open and will start running. The fan in alarm can also be inspected while the other fan is running, therefore without stopping the control unit.

Leak-proofing

In this type of application the absolute degree of air leakage must always be guaranteed. In order to avoid contamination, the unit always works at positive pressure, therefore any air leaks are from the central to the outside, thus excluding the danger of infiltration of untreated air from the outside towards the central.
In this type of application the suction and prefilter are positioned upstream of the fan, all the other components downstream.



Negative pressure

Positive pressure *

* Positive pressure: any air leaks are from the central to the outside and therefore the risk of infiltration of unfiltered air from the outside into the central unit itself which can then be sent to the environment to be conditioned is excluded. Suction and prefilter upstream of the fan, all the other components downstream.

23MK-Food

Air handling unit for the food industry

DIN 1946-4

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

The food sector as well as requiring a construction standard that guarantees the highest level of hygiene in line with the HY series, must be able to guarantee the absence of structural thermal bridges due to the low operating temperatures in which it is customary to operate in these areas.

The use of structural profiles in AISI 304 or AISI 316 stainless steel, oversized panel thicknesses or fiberglass solutions, allow, depending on the specific application, to create units dedicated to giving concrete answers to the many needs of the food industry.

Mekar has always been recognized on the market as a reliable, flexible and dynamic partner, able thanks to its skills and know-how to provide solutions for every application need. As evidence of this, the countless references made in cross-cutting areas and with important brands in the food industry, both nationally and internationally.

23MK- Pharma

Air handling unit for the pharmaceutical industry

DIN 1946-4

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

The pharmaceutical sector imposes very hygienic technical solutions that avoid the transmission of pathogenic component in the environment.

MEKAR guarantees a construction standard and technical solutions in line with the specifications of this sector. In particular:

- DIN 1946-4 certified construction standards
- VDI 6022 certified filtrations
- HEPA filtration
- Germicidal lamps
- Dedicated climate control for precise maintenance of ambient overpressure
- Maintenance of thermo-hygrometric conditions with low relative humidity % using drying wheels.

Moreover, in order to increase antibacterial performance, MEKAR has a new film coating with antibacterial properties.

23MK - Pool

Air handling unit for pools and SPAs

The indoor pool is an energy-intensive application context and this is why the air treatment has a fundamental function both in maintaining the thermo-hygrometric conditions necessary for user comfort and for energy recovery.

We believe that each project must be examined and treated with dedicated units based on the following variables: climate location, type, period and method of use, water and air temperature, relative air humidity, tank surface, ambient air volume, air exchange.

Together with a dedicated technical solution based on the above variables and depending on the chloride concentrations, MEKAR can also have construction standards suitable for the application that prefer anodized aluminum, AISI 304 or AISI 316 stainless steel and high resistance epoxy paints. The choice can be directed to a dehumidification unit with only ventilation or with an integrated cooling circuit.

23MK - Marine

Air handling unit for naval and offshore sector

Official supplier

FINCANTIERI

Mekar is able to offer solutions for use in the marine and offshore sectors, both in terms of climate comfort and in terms of maintaining optimal operating conditions in technical or service rooms.

The products developed are always the result of an intense collaboration between the Company and the Customer, in order to be able to offer the most suitable solution to guarantee total functionality, durability and extreme reliability, in compliance with the most stringent health and safety regulations specified by the shipowner.

Mekar, as a company of the Aliseo Group, can take advantage of highly qualified transversal skills also in the field of refrigeration, allowing it to offer integrated turnkey solutions, efficiency and compactness, all characterized by an extreme degree of customization, both in terms of size, constructive and performance.

23MK - Ecology

Air handling unit for ecology

Dedicated solutions for the ecology sector, where there is the need to guarantee the healthiness and neutrality of the working environment in an efficient and continuous manner, while reducing the environmental impact through the removal of polluting substances such as oil vapors, fumes and odors present in the extracted air volumes.

Thanks to an accurate sizing of the filtering stages and the adoption of innovative technical devices such as electrostatic filters, the units of the 23MK-Ecology series allow to ensure not only maximum efficiency but also a significant reduction in operating costs thanks to a lower demand of ordinary and extraordinary maintenance, guaranteed by the constructive choices specifically adopted for this area.

23MK - HiTech

Air handling units for industry

Dedicated and fully customized solutions for different industrial applications.

Mekar thanks to its know-how and to the marked flexibility and dynamism that has always characterized its engineering, is able to find turnkey solutions with different purposes, such as for example the increase in production efficiency, energy saving, the safeguarding the wear and tear of equipment and technical systems, the recovery of energy sources that are differently dispersed, high temperature treatments or the need to guarantee a strictly constant climate control and absolute air quality.

Numerous and transversal are the references in the industrial world, in which Mekar has succeeded in developing, designing and providing solutions aimed at satisfying the specific requests of the Customer, with innovative and cutting-edge proposals.

31MK

Air handling unit with reduced thickness

The 31MK series air handling units are configurable units to satisfy, with the adoption of the appropriate components, the functions for the air to be introduced into the environment, for mixing, filtration, heating, cooling and ventilation.

The typical application is the conditioning of offices, shops, public buildings, common parts of residential buildings, industrial environments and in all environments where it is necessary to keep the height of the machine as low as possible. The series consists of 10 sizes, developed on two heights, 400 and 560 mm and 7 widths, for a range of capacities between 1000 and 8100 m^3/h, and with total pressures up to 1000 Pa.

The 31MK series is characterized by a reduced height as it is specifically designed for false ceiling installation that does not require dedicated technical spaces, making the entire surface of the rooms usable. The inspection and access to the components is therefore ensured from below.

24MK

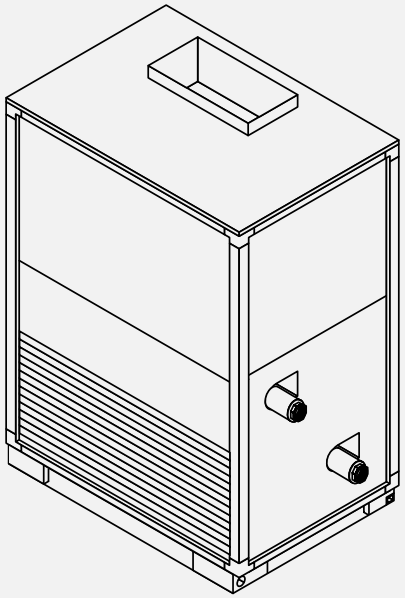
Thermo-ventilation units

The 24MK series air handling units are modular sectional units that can be configured to meet the following functions with the use of the appropriate components: filtration, heating, cooling, mixture of ambient air with external air and ventilation for the air to be introduced into the environment.

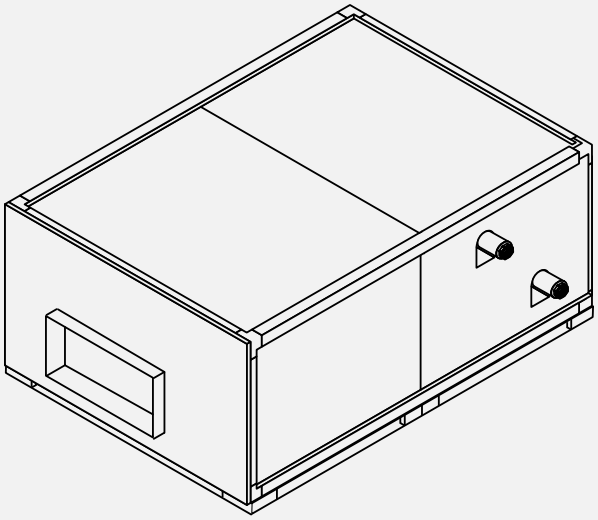
Available in 8 sizes for a range of air flow rates between 1,700 and 25,000 m^3/h (maximum flow 18,900 m^3/h in case of air conditioning) with total pressures up to 1000 Pa.

Configurations

Type A orientation



Type B orientation



The construction is of the type with aluminum frame and sandwich infill panels 25mm thick. The surfaces of the panels are in pre-painted sheet metal, externally and internally galvanized. Sheet thickness 0.5 mm. Thermo-acoustic insulation guaranteed by 45 kg/m³ density polyurethane foam.

Although the use is often required in a vertical cabinet configuration, the series is characterized by two other possible installation configurations: vertical "L" and horizontal. Both versions have been designed to minimize the overall dimensions and therefore make the most of the useful space: in height for horizontal installation (typically on the ceiling) and in depth for vertical installation, especially when the unit is leaning against a wall .

The base unit can be configured in various ways according to the needs, however the typically supplied version is normally composed of:
• 48mm thick corrugated synthetic filter. Eff. G4 easily removable with removable inspection panel
• Double-use coil for heating and /or cooling applications from 2/4/6 Rows P3012 complete with peraluman condensation collection tank
• Motor-ventilating unit with one or more forward-bladed fans, three-phase electric motor with belt drive with variable pulley from standstill. Optional directly connected fan fans EC fan.

The base unit is normally supplied monoblock to the advantage of a better thermal insulation (the junction between the fan section and the treatment is missing) and the assembly times on site.

Performance technical data

		01	02	03	04	05	06	07	08
FAN SECTION									
Rated air flow (1)	m³/h	2500	2800	3900	5100	7200	10300	14900	18900
MINIMUM air flow rate	m³/h	1742	1960	2737	3655	5132	7278	10544	13608
MAXIMUM air flow (Heating only)	m³/h	2900	3600	5000	6700	9000	12500	19400	25000
Type of fan		Single	Single	Single	Single	Single	Single	Twin	Twin
Impeller standard size		9-7	10-8	12-9	15-11	15-15	18-18	18-13	18-18
Standard motor type		4-pole IP55 Class F motors with 400V / 3 phase / 50Hz							
Minimum electric motor power installed	kW	0,25	0,37	0,55	0,75	1,1	1,5	2,2	3
Maximum electric motor power installed	kW	0,75	1,1	1,5	2,2	3	4	5,5	7,5
POWER IN HEATING AND COOLING									
	Rows								
Total cooling capacity [kW]	4 (1)	12,60	14,30	19,10	25,30	33,80	52,10	75,00	96,40
	6 (2)	23,20	26,30	35,90	47,50	67,20	93,10	140,00	179,40
Sensitive cooling capacity [kW]	4 (1)	9,80	11,10	15,10	20,00	27,40	37,50	58,50	75,20
	6 (2)	14,40	16,00	22,20	29,40	41,00	57,70	85,40	109,40
Thermal power [kW]	2 (3)	22,10	25,00	35,30	45,50	66,70	92,50	136,70	175,10
	4 (4)	15,00	16,80	23,00	30,40	41,70	61,80	89,10	114,10
	6 (4)	18,30	20,60	28,40	37,40	52,80	74,70	109,30	139,60
Water flow rate [l/h]	2 (3)	1899	2195	3098	4092	5862	8128	12010	15390
	4 (4)	2167	2452	3284	4352	5816	8956	12887	16566
	6 (4)	3988	4521	6176	8157	11554	16004	24062	30841
Water side pressure drop [kPa]	2 (3)	3	4	6	8	18	5	11	17
	4 (4)	30	41	15	18	7	32	28	39
	6 (4)	30	41	22	28	31	14	40	50

Dimensions

24MK			01	02	03	04	05	06	07	08
A		mm	940	1020	1180	1260	1660	1900	2620	2860
C		mm	1180	1180	1260	1340	1340	1580	1580	1660
HO (5)		mm	760	760	840	920	920	1080	1080	1160
B		mm	700	700	780	860	860	1020	1020	1100
HV - 1 Coil		mm	1400	1400	1560	1720	1720	2040	2040	2200
HV - 2 Coils		mm	1640	1640	1800	1960	1960	2280	2280	2520
A1		mm	940	1020	1180	1260	1660	1900	2620	2860
A2		mm	600	600	600	600	600	600	600	600
B1		mm	600	600	600	700	850	1000	1000	1000
B2 (6)		mm	600	600	600	700	850	1000	1000	1000
C1 - C2		mm	600	600	600	700	850	1000	1000	1000
weight	2 Rows Coil	kg	85	93	115	136	172	227	305	416
	4 Rows Coil	kg	90	99	121	137	165	221	303	405
	6 Rows Coil	kg	95	106	131	150	184	248	337	442
	4+2 Rows Coil	kg	101	111	136	157	189	255	347	466
	6+2 Rows Coil	kg	106	118	146	170	208	282	381	503

Note:
(5) 60 mm reduction for false ceiling version
(6) not mandatory

10MK

High efficiency heat recovery unit

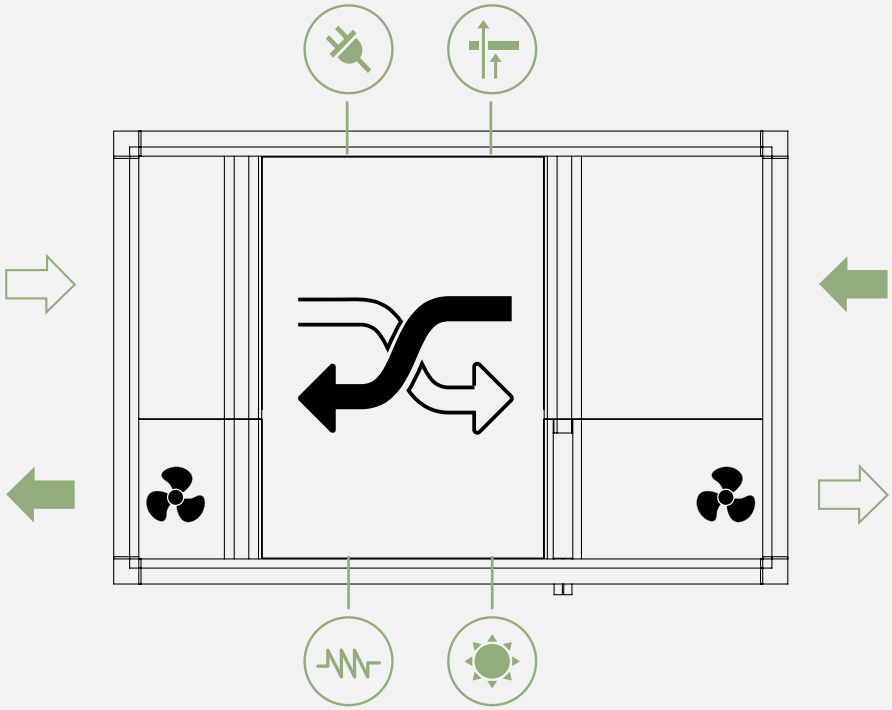
The 10MK series of recuperators has been developed in order to guarantee a comfortable and healthy environment aiming at maximum efficiency, ensuring a high energy saving and relative reduction in operating costs.

The range consists of 6 sizes for the series equipped with asynchronous motors and 8 sizes for the series equipped with innovative brushless motors. The units are suitable for horizontal installation, with an air flow range from 320 to 4700 m^3/h and recovery efficiencies up to over 90%.

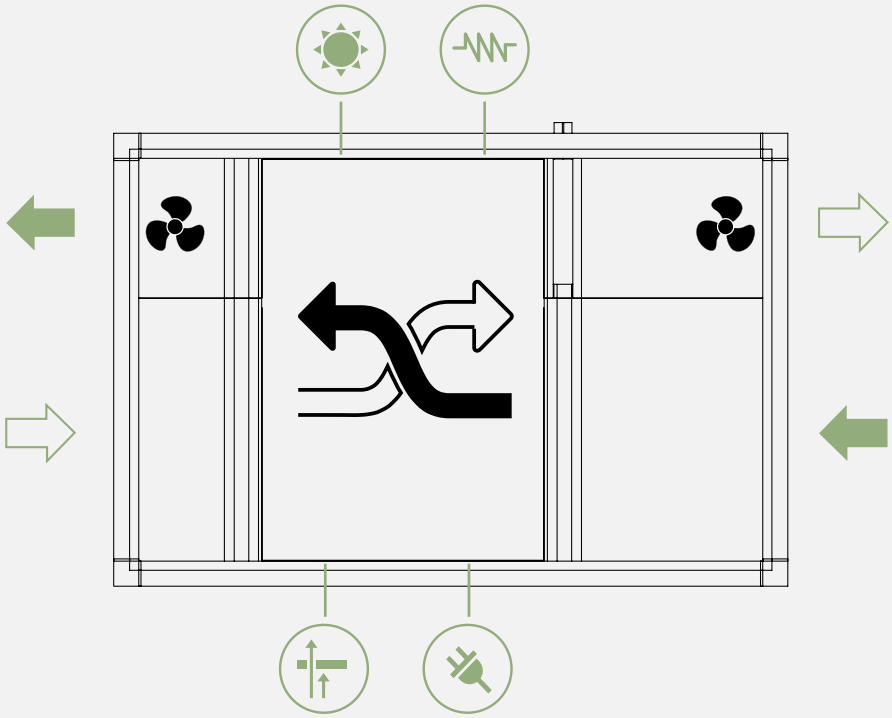
The wide range of capacities and configurations allows to satisfy multiple application requirements for different areas ranging from residential to industrial. These series of recuperators have been suitably sized in order to comply with the requirements of the European Ecodesign Directive (EU Regulation 1253/14).

Configurations

Type A orientation



Type B orientation

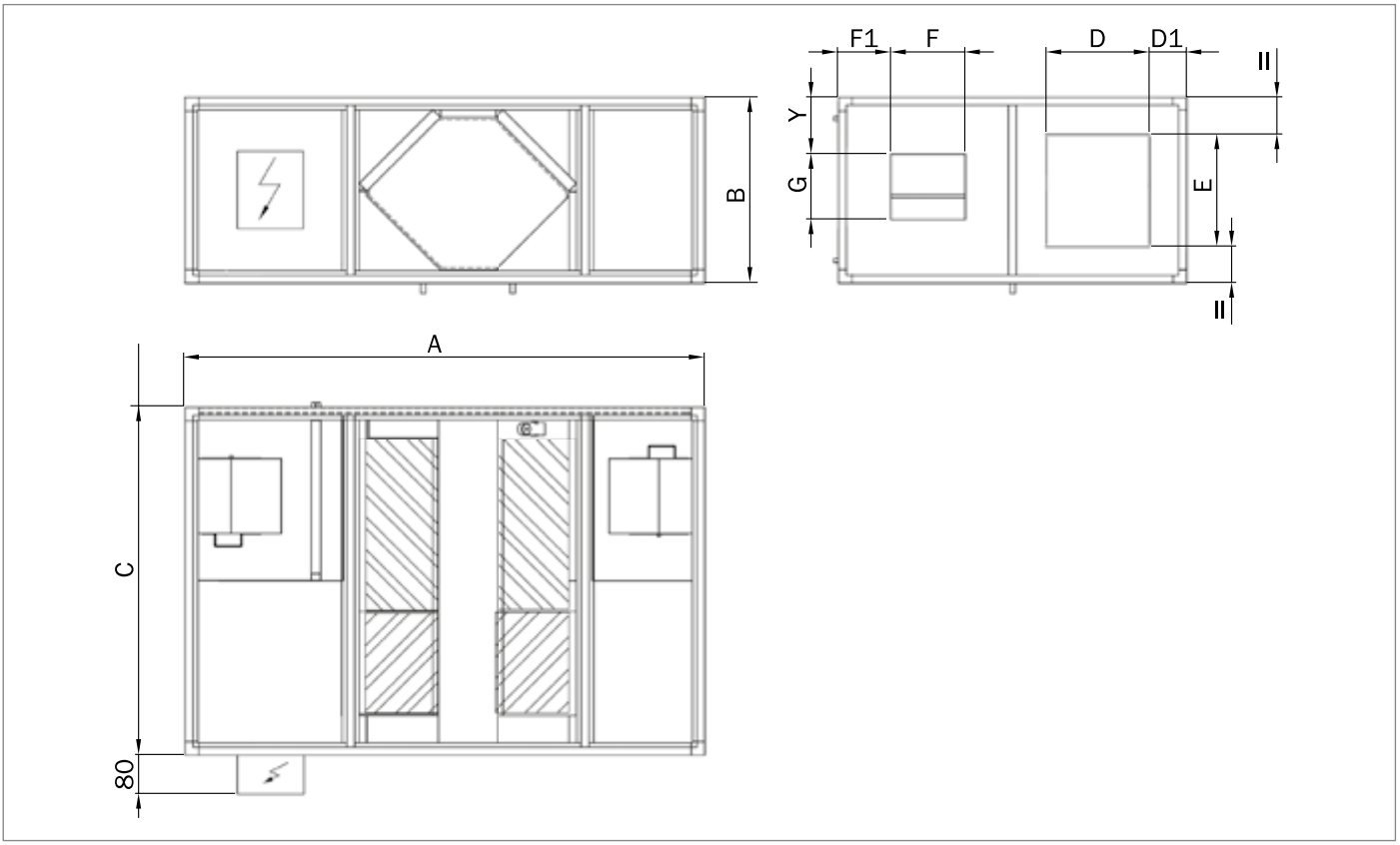


The orientations shown are related to the machine viewed from above

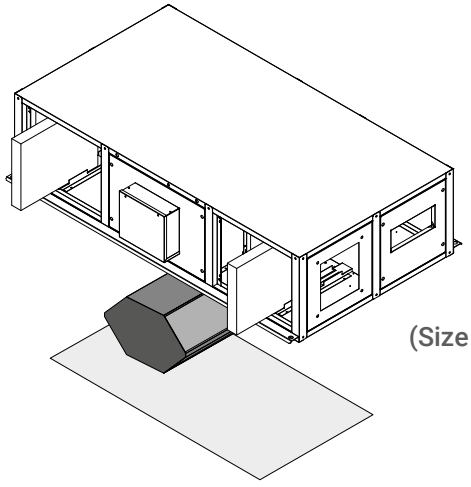
expelled air | fresh air | electric socket | air filter | electrical resistance | heating

Dimensions and accessibility

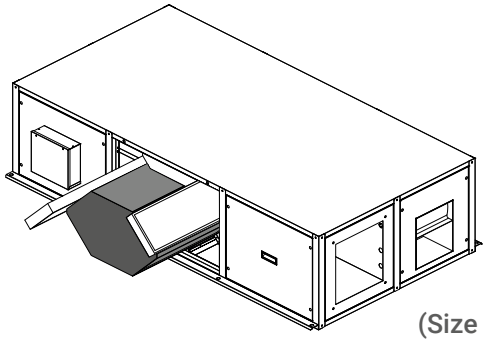
			1	2	3	4	5	6	7	8
Lunghezza / *Lenght*	A	mm	1480	1940	1940	2200	2200	2500	2500	2500
Altezza / *Height*	B	mm	380	480	480	550	550	680	680	680
Profondità / *Depth*	C	mm	800	990	990	1000	1400	1400	1400	1700
	D	mm	200	300	300	300	500	400	500	500
	D1	mm	110	100	100	100	100	150	100	185
	E	mm	210	310	310	410	410	510	510	510
	F	mm	230	230	230	230	300	330	405	405
	F1	mm	90	140	140	145	215	195	157.5	232.5
	G	mm	70	210	260	260	260	290	405	450
	Y	mm	115	160	160	90	90	115	115	115



Accessibility (filters and exchanger)



(Size 1)



(Size 2÷8)

Performance technical data

MOTORE ECM / *ECM MOTOR*			10MK-SHE-ECM								10MK-HHE-ECM							
			1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Portata aria nominale *Nominal air flow*		m^3/h	400	750	1000	1500	2050	3200	3800	4700	320	600	800	1200	1600	2500	3500	4300
Pressione statica utile nominale *Nominal external static pressure*		Pa	160	120	130	160	120	180	200	200	165	150	160	160	150	250	200	200
Pressione statica utile massima *Maximun external stati pressure*		Pa	340	210	520	500	540	375	330	200	380	300	600	450	600	440	350	220
VENTILATORI - *FANS*																		
Tipologia motore *Motor typology*			ECM															
N° velocità Speed Number	(1)		Multiple															
Controllo ventilazione *Fan control*	(1)		0-10V		0-10V VSD						0-10V		0-10V VSD					
Potenza assorbita nominale totale *Total nominal power input*		kW	0.16	0.30	0.49	0.76	0.84	1.77	1.78	2.19	0.16	0.24	0.32	0.53	0.61	1.32	1.87	2.27
Corrente assorbita nominale totale *Total nominal load amperage*		A	0.7	1.3	2.1	3.2	3.6	7.5	7.6	9.3	0.7	1.0	1.4	2.2	2.6	5.6	8.0	9.6
Efficienza statica dei ventilatori secondo (UE) n.327/2011 *Static efficency of fans (UE) n.327/2011*		%	32.7	32.7	53.2	53.2	55.9	59.8	66.9	66.9	32.73	32.73	53.20	53.20	55.90	59.80	66.90	66.90
Potenza assorbita massima totale *Total full load power input*		kW	0.56	0.56	2.12	2.12	2.12	2.35	2.07	2.07	0.56	0.56	2.12	2.12	2.12	2.35	2.07	2.07
Corrente assorbita massima totale *Total full load amperage*		A	2.4	2.4	9.0	9.0	9.0	10.0	8.8	8.8	2.4	2.4	9.0	9.0	9.0	10.0	8.8	8.8
Alimentazione elettrica *Electrical power supply*		V/ph/Hz	230 / 1 / 50		230 / 1 / 50-60						230 / 1 / 50		230 / 1 / 50-60					
RECUPERATORE DI CALORE - *HEAT RECOVERY UNITS*																		
INVERNO *WINTER* Efficienza termica invernale *Winter thermal efficiency*	(2)	%	83.6	82.9	81.6	83.3	83.7	86.8	84.1	84.2	90.2	91.1	90.0	90.0	90.4	91.5	90.1	90.2
ESTATE *SUMMER* Efficienza termica estiva *Summer thermal efficiency*	(3)	%	75.5	75.9	74.5	75.1	75.6	78.0	75.0	75.1	79.6	80.1	78.7	79.2	79.8	80.0	78.4	78.5
Efficienza termica a secco *Dry thermal efficiency*	(4)	%	75.9	76.4	75.0	75.6	76.0	76.3	75.5	75.6	83.1	83.7	82.2	82.7	83.3	83.5	81.8	81.9
LIMITI DI FUNZIONAMENTO - *OPERATING LIMITS*																		
Condizioni di temperatura - umidità limite esterne *Outdoor temperature – humidity working limits*		°C / %	-5 ... +45 °C / 5 ... 95%															
Condizioni di temperatura - umidità limite esterne con accessorio RMS *Outdoor temperature – humidity working limits with RMS option*		°C / %	-15 ... +45 °C / 5 ... 95%															
Condizioni di temperatura - umidità limite interne *Indoor temperature – humidity working limits*		°C / %	+10 ... +35 °C / 10 ... 90%															
DATI SPECIFICI ECODESIGN																		
Tipologia dichiarata *Declared typology*			UVNR - UVB															
Potenza specifica interna dei componenti della ventilazione *(SFPint)* *Internal specific fan power of ventilation components (SFPint)*	(4)	W/(m^3/s)	705	742	1059	1048	898	1040	949	935	830	608	722	866	722	816	1157	1129
Potenza massima specifica interna dei componenti della ventilazione *(SFPint_limit)* *Maximun internal specific fan power of ventilation components (SFPint_limit)*		W/(m^3/s)	1170	1171	1118	1116	1105	1066	1017	982	1390	1396	1343	1341	1342	1311	1218	1188
Velocità frontale alla portata nominale *Face velocity at design flow rate*		m/s	0.93	1.36	1.81	2.00	1.83	2.06	2.44	2.42	0.74	1.08	1.45	1.60	1.42	1.61	2.25	2.21
Perdita di pressione dei componenti interni della ventilazione (Δps,int) *Internal pressure drop of ventilation components (Dps, int)*		Pa	140	119	179	202	177	194	252	248	135	105	154	184	157	183	294	287
Massimo trafilamento esterno dell'involucro *Declared maximun external leakage rates of the casing of ventilation units*		%	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5
Massimo trafilamento interno o flusso residuo *Declared maximun internal leakage rates for bidirectional ventilation units*		%	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
Consumo annuo calcolato di energia dei filtri (8760 h di funzionamento) *Calculated annual energy consumption of the F7 and M5 filter (8760 hours of operation)*		kWh/a	487	1448	1684	2862	3325	4036	5456	6649	297	884	1028	1747	1922	2229	4476	5368
Livello di potenza sonora irradiato dall'involucro *Sound power level (LWA)*	(5)	dB (A)	57	60	59	61	59	64	66	68	56	57	60	60	60	66	68	67

(1) Multiple = Multivelocità > 3; Multispeed > 3
Man = Manuale da selettore o tastiera; *manual by selector switch or control panel*
0-10V = Da potenziometro o tastiera; *by potentiometer or control panel*
VSD = A portata costante o modulazione da sensore qualità/umidità aria; *constant flow control or modulation by air quality or air humidity sensor*

(2) Aria esterna -5°C 80% UR . aria ambiente 20°C 50% UR; *outside air: -5'C 0B, RH 80 % . ambient air: 20'C 0B, RH 50 %*

(3) Aria esterna 32°C 50% UR . aria ambiente 26°C 50% UR; *outside air: 32°C 0B, RH 50 % . ambient air: 26°C DB, RH 50 %*

(4) Secondo regolamento UE 1253/2014: alla pressione nominale; condizioni di temperatura e umidità riferite a EN 308.
Refeer to EU 1253/2014 regulation: at nominal pressure; air conditions refer to EN 308 standard.

(5) Livello di potenza sonora alle condizioni di funzionamento nominali ; *Sound power level at nominal working conditions*

MOTORE ASINCRONO / *ASYNCHRONOUS MOTOR*			10MK-SHE						10MK-HHE					
			1	2	3	4	5	6	1	2	3	4	5	6
Portata aria nominale *Nominal air flow*		m^3/h	400	750	1000	1500	2050	3200	320	600	800	1200	1600	2500
Pressione statica utile nominale *Nominal external static pressure*		Pa	160	120	130	160	120	180	165	150	160	160	150	250
Pressione statica utile massima *Maximun external stati pressure*		Pa	160	120	130	160	120	180	165	150	160	160	150	250
VENTILATORI - *FANS*														
Tipologia motore *Motor typology*			AC											
N° velocità Speed Number	(1)		3											
Controllo ventilazione *Fan control*	(1)		Manuale											
Potenza assorbita nominale totale *Total nominal power input*		kW	0.17	0.38	0.52	0.80	1.00	1.79	0.22	0.32	0.35	0.59	0.70	1.60
Corrente assorbita nominale totale *Total nominal load amperage*		A	0.7	1.6	2.2	3.4	4.3	7.6	0.9	1.4	1.5	2.5	3.0	6.8
Efficienza statica dei ventilatori secondo (UE) n.327/2011 *Static efficency of fans (UE) n.327/2011*		%	N.A.	38.6	38.6	38.6	40.4	43.4	N.A.	38.60	38.60	38.60	40.40	43.40
Potenza assorbita massima totale *Total full load power input*		kW	0.35	0.68	1.41	1.41	1.41	3.29	0.35	0.68	1.41	1.41	1.41	3.29
Corrente assorbita massima totale *Total full load amperage*		A	1.5	2.9	6.0	6.0	6.0	14.0	1.5	2.9	6.0	6.0	6.0	14.0
Alimentazione elettrica *Electrical power supply*		V/ph/Hz	230 / 1 / 50		230 / 1 / 50-60				230 / 1 / 50		230 / 1 / 50-60			
RECUPERATORE DI CALORE														
INVERNO *WINTER* Efficienza termica invernale *Winter thermal efficiency*	(2)	%	83.6	82.9	81.6	83.3	83.7	86.8	90.2	91.1	90.0	90.0	90.4	91.5
ESTATE *SUMMER* Efficienza termica estiva *Summer thermal efficiency*	(3)	%	75.5	75.9	74.5	75.1	75.6	78.0	79.6	80.1	78.7	79.2	79.8	80.0
Efficienza termica a secco *Dry thermal efficiency*	(4)	%	75.9	76.4	75.0	75.6	76.0	76.3	83.1	83.7	82.2	82.7	83.3	83.5
LIMITI DI FUNZIONAMENTO														
Condizioni di temperatura - umidità limite esterne *Outdoor temperature – humidity working limits*		°C / %	-5 ... +45 °C / 5 ... 95%											
Condizioni di temperatura - umidità limite esterne con accessorio RMS *Outdoor temperature – humidity working limits with RMS option*		°C / %	-15 ... +45 °C / 5 ... 95%											
Condizioni di temperatura - umidità limite interne *Indoor temperature – humidity working limits*		°C / %	+10 ... +35 °C / 10 ... 90%											
DATI SPECIFICI ECODESIGN														
Tipologia dichiarata *Declared typology*			UVNR - UVB											
Potenza specifica interna dei componenti della ventilazione *(SFPint)* *Internal specific fan power of ventilation components (SFPint)*	(4)	$W/(m^3/s)$	740	934	1105	1102	1078	1054	1153	821	793	974	830	988
Potenza massima specifica interna dei componenti della ventilazione *(SFPint_limit)* *Maximun internal specific fan power of ventilation components (SFPint_limit)*		$W/(m^3/s)$	1170	1171	1118	1116	1105	1066	1390	1396	1343	1341	1342	1311
Velocità frontale alla portata nominale *Face velocity at design flow rate*		m/s	0.93	1.36	1.81	2.00	1.83	2.06	0.74	1.08	1.45	1.60	1.42	1.61
Perdita di pressione dei componenti interni della ventilazione (Δps,int) *Internal pressure drop of ventilation components (Dps, int)*		Pa	140	119	179	202	177	194	135	105	154	184	157	183
Massimo trafilamento esterno dell'involucro *Declared maximun external leakage rates of the casing of ventilation units*		%	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5
Massimo trafilamento interno o flusso residuo *Declared maximun internal leakage rates for bidirectional ventilation units*		%	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
Consumo annuo calcolato di energia dei filtri (8760 h di funzionamento) *Calculated annual energy consumption of the F7 and M5 filter (8760 hours of operation)*		kWh/a	613	1228	2320	3945	4601	5562	374	749	1416	2408	2659	3071
Livello di potenza sonora irradiato dall'involucro *Sound power level (LWA)*	(5)	dB (A)	58	61	61	64	64	68	57	57	60	62	63	68

(1) Multiple = Multivelocità > 3; Multispeed > 3
Man = Manuale da selettore o tastiera; *manual by selector switch or control panel*
0-10V = Da potenziometro o tastiera; *by potentiometer or control panel*
VSD = A portata costante o modulazione da sensore qualità/umidità aria; *constant flow control or modulation by air quality or air humidity sensor*

(2) Aria esterna -5°C 80% UR . aria ambiente 20°C 50% UR; *outside air: -5'C 0B, RH 80 % . ambient air: 20'C 0B, RH 50 %*

(3) Aria esterna 32°C 50% UR . aria ambiente 26°C 50% UR; *outside air: 32°C 0B, RH 50 % . ambient air: 26°C DB, RH 50 %*

(4) Secondo regolamento UE 1253/2014: alla pressione nominale; condizioni di temperatura e umidità riferite a EN 308.
Refeer to EU 1253/2014 regulation: at nominal pressure; air conditions refer to EN 308 standard.

(5) Livello di potenza sonora alle condizioni di funzionamento nominali ; *Sound power level at nominal working conditions*

07MK

Ductable air handling unit

The ductable air handling units of the 07MK series are available in 4 construction versions, 7 power sizes, in the horizontal or vertical version and with air flow rates ranging from 480 to 8,000 m^3/h, thermal outputs from 2.8 to 56 kW and cooling capacities from 2.5 to 42 kW.

The units are particularly suitable for use in small and medium rooms for civil, commercial or industrial applications. The modularity of the basic components makes the units suitable for typical installation in false ceilings.

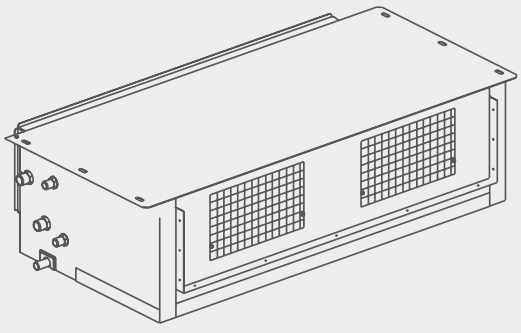
Configurations

The ductable air handling units of the 07MK series are available in 4 construction versions, 7 power sizes, in the horizontal or vertical version and with air flow rates ranging from 480 to 8,000 m^3/h, thermal outputs from 2.8 to 56 kW and cooling capacities from 2.5 to 42 kW.

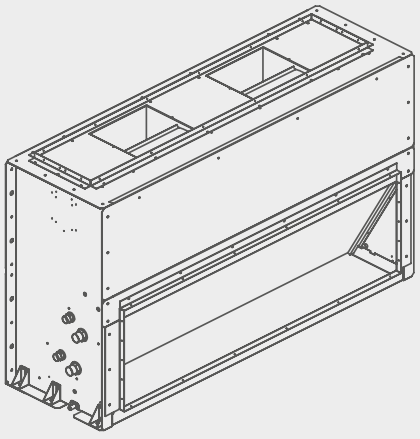
The units are particularly suitable for use in small and medium rooms for civil, commercial or industrial applications. The modularity of the basic components makes the units suitable for typical installation in false ceilings.

versions	
07MK-H	horizontal installation, asynchronous motor
07MK-ECM-H	horizontal installation, ECM motor
07MK-V	vertical installation, asynchronous motor
07MK-ECM-H	vertical installation, ECM motor

Horizontal installation



Vertical installation



Impianto a 2 tubi (batteria 3R taglie 10-50) (batteria 4R taglie 60,70)
2 pipe system (3R coil sizes 10-50) (4R coil sizes 60,70)

					10	20	30	40	50	60 (*)	70 (*)
RAFFREDDAMENTO - *COOLING* Temp. acqua ingresso - *Inlet water temp.*: 7°C Temp. acqua uscita - *Outlet water temp.*: 12°C Temp. aria ingresso - *Inlet air temp.*: 27°C d.b. - 19°C w.b.	Potenza frigorifera totale *Total cooling capacity*	(E)	W	7	-	5063	-	-	-	-	-
			W	6	-	5040	-	-	-	-	-
			W	5	-	**4974**	-	-	-	-	-
			W	4	**2735**	**4711**	-	-	-	-	-
			W	3	2714	4412	**6936**	**8277**	**10850**	23488	42068
			W	2	**2683**	**4084**	**6797**	**8066**	**9764**	21629	39655
			W	1	**2543**	3678	**6536**	**7596**	**8081**	19816	35610
	Potenza frigorifera sensibile *Sensible cooling capacity*	(E)	W	7	-	3753	-	-	-	-	-
			W	6	-	3740	-	-	-	-	-
			W	5	-	**3684**	-	-	-	-	-
			W	4	**2025**	**3471**	-	-	-	-	-
			W	3	2014	3232	**5216**	**6187**	**8250**	16918	30788
			W	2	**1983**	**2964**	**5107**	**6016**	**7334**	15469	28875
			W	1	**1873**	2648	**4856**	**5626**	**5971**	14096	25670
	Portata acqua *Water flow*		l/h	7	-	892	-	-	-	-	-
			l/h	6	-	887	-	-	-	-	-
			l/h	5	-	875	-	-	-	-	-
			l/h	4	487	828	-	-	-	-	-
			l/h	3	484	777	1225	1459	1936	4200	7550
			l/h	2	479	720	1197	1418	1736	3858	7081
			l/h	1	454	650	1143	1336	1438	3517	6352
	Perdite di carico lato acqua *Water pressure drop*	(E)	kPa	7	-	25,4	-	-	-	-	-
			kPa	6	-	25,1	-	-	-	-	-
			kPa	5	-	**24,5**	-	-	-	-	-
			kPa	4	**13,5**	**22,2**	-	-	-	-	-
			kPa	3	13,4	19,9	**28,3**	**27,7**	**23,9**	34,4	36,4
			kPa	2	**13,1**	**17,4**	**27,2**	**26,3**	**19,7**	29,6	32,5
			kPa	1	**12,0**	14,5	**25,0**	**23,7**	**14,1**	25,1	26,9
RISCALDAMENTO - *HEATING* Temp. aria - *Air temp.*: 20°C Temp. acqua ingresso - *Inlet water temp.*: 45/40°C	Potenza termica *Heating capacity*	(E)	W	7	-	5490	-	-	-	-	-
			W	6	-	5450	-	-	-	-	-
			W	5	-	**5370**	-	-	-	-	-
			W	4	**3080**	**5060**	-	-	-	-	-
			W	3	3060	4720	**7660**	**9040**	**12430**	25450	46880
			W	2	**3030**	**4350**	**7470**	**8760**	**11010**	23210	43630
			W	1	**2860**	3900	**7100**	**8210**	**8960**	20970	38670
	Portata acqua *Water flow*		l/h	7	-	956	-	-	-	-	-
			l/h	6	-	950	-	-	-	-	-
			l/h	5	-	936	-	-	-	-	-
			l/h	4	537	881	-	-	-	-	-
			l/h	3	534	822	1335	1575	2165	4433	8166
			l/h	2	527	758	1301	1526	1918	4042	7604
			l/h	1	498	679	1237	1430	1562	3652	6736
	Perdite di carico lato acqua *Water pressure drop*	(E)	kPa	7	-	23,6	-	-	-	-	-
			kPa	6	-	23,3	-	-	-	-	-
			kPa	5	-	**22,7**	-	-	-	-	-
			kPa	4	**13,2**	**20,5**	-	-	-	-	-
			kPa	3	13,1	18,1	**27,1**	**26,1**	**24,0**	31,1	34,5
			kPa	2	**12,8**	**15,7**	**25,9**	**24,7**	**19,4**	26,5	30,4
			kPa	1	**11,6**	12,9	**23,7**	**22,0**	**13,5**	22,1	24,5
RISCALDAMENTO - *HEATING* Temp. aria - *Air temp.*: 20°C Temp. acqua ingresso - *Inlet water temp.*: 50°C	Potenza termica *Heating capacity*		W	7	-	6540	-	-	-	-	-
			W	6	-	6500	-	-	-	-	-
			W	5	-	6410	-	-	-	-	-
			W	4	3660	6030	-	-	-	-	-
			W	3	3640	5640	9120	10770	14730	30440	55840
			W	2	3600	5200	8890	10440	13070	27750	52020
			W	1	3400	4660	8450	9790	10670	25100	46190
	Portata acqua *Water flow*		l/h	7	-	892	-	-	-	-	-
			l/h	6	-	887	-	-	-	-	-
			l/h	5	-	875	-	-	-	-	-
			l/h	4	487	828	-	-	-	-	-
			l/h	3	484	777	1225	1459	1936	4200	7550
			l/h	2	479	720	1197	1418	1736	3858	7081
			l/h	1	454	650	1143	1336	1438	3517	6352
	Perdite di carico lato acqua *Water pressure drop*		kPa	7	-	20,7	-	-	-	-	-
			kPa	6	-	20,4	-	-	-	-	-
			kPa	5	-	20,0	-	-	-	-	-
			kPa	4	11,0	18,1	-	-	-	-	-
			kPa	3	10,9	16,2	23,1	22,5	19,4	28,0	29,7
			kPa	2	10,7	14,2	22,1	21,4	16,0	24,1	26,5
			kPa	1	9,7	11,8	20,4	19,3	11,5	20,5	21,9

velocità cablate / *wired speed*

- Il test per la rilevazione del livello di potenza sonora è stato eseguito in accordo con la normativa EN 16583:2015
  The sound power level test has to be performed according to EN 16583:2015 standard
- Livello di pressione sonora: considerata 8,6 dB(A) inferiore rispetto alla potenza sonora in una stanza di 90 m³ con un tempo di riverbero di 0,5 sec.
  Sound pressure level: 8,6 dB(A) lower that the sound power level for a room of 90 m³ with a reverberation time of 0,5 sec.
- Valori tensione ammissibile: ~230V / 1ph / 50-60Hz
  Supported power supply: ~230V / 1ph / 50-60Hz

(E) = Eurovent

* Unità non soggette a certificazione Eurovent per limiti di definizione. *Units not subject to Eurovent certification due to definition limits*

Performance technical data

Impianto a 2 tubi (batteria 3R taglie 10-50) (batteria 4R taglie 60,70) ***2 pipe system (3R coil sizes 10-50) (4R coil sizes 60,70)***				10	20	30	40	50	60 (*)	70 (*)
Portata aria *Air flow*	(E)	m³/h	7	-	970	-	-	-	-	-
		m³/h	6	-	962	-	-	-	-	-
		m³/h	5	-	**944**	-	-	-	-	-
		m³/h	4	**541**	**873**	-	-	-	-	-
		m³/h	3	536	800	**1419**	**1641**	**2401**	4134	7985
		m³/h	2	**528**	**721**	**1371**	**1575**	**2041**	3676	7279
		m³/h	1	**491**	629	**1282**	**1446**	**1560**	3242	6246
Pressione statica *Static pressure*	(E)	Pa	7	-	64	-	-	-	-	-
		Pa	6	-	62	-	-	-	-	-
		Pa	5	-	**59**	-	-	-	-	-
		Pa	4	**54**	**50**	-	-	-	-	-
		Pa	3	52	42	**55**	**56**	**70**	122	121
		Pa	2	**50**	**34**	**50**	**50**	**50**	100	100
		Pa	1	**44**	26	**44**	**42**	**29**	76	77
Livello di potenza sonora aspirazione + radiata *Sound power level inlet + radiated*	(E)	dB(A)	7	-	63	-	-	-	-	-
		dB(A)	6	-	63	-	-	-	-	-
		dB(A)	5	-	**62**	-	-	-	-	-
		dB(A)	4	**58**	**59**	-	-	-	-	-
		dB(A)	3	57	58	**63**	**65**	**67**	70	72
		dB(A)	2	**57**	**56**	**62**	**64**	**68**	66	67
		dB(A)	1	**56**	55	**60**	**62**	**62**	61	62
Livello di potenza sonora mandata *Sound power level outlet*	(E)	dB(A)	7	-	64	-	-	-	-	-
		dB(A)	6	-	63	-	-	-	-	-
		dB(A)	5	-	**63**	-	-	-	-	-
		dB(A)	4	**61**	**60**	-	-	-	-	-
		dB(A)	3	61	58	**66**	**66**	**66**	74	75
		dB(A)	2	**60**	**56**	**65**	**65**	**67**	69	70
		dB(A)	1	**58**	55	**62**	**63**	**63**	64	65
Livello di pressione sonora aspirazione + radiata *Sound pressure level inlet + radiated*		dB(A)	7	-	54	-	-	-	-	-
		dB(A)	6	-	54	-	-	-	-	-
		dB(A)	5	-	53	-	-	-	-	-
		dB(A)	4	49	50	-	-	-	-	-
		dB(A)	3	48	49	54	56	58	61	63
		dB(A)	2	48	47	53	55	59	57	58
		dB(A)	1	47	46	51	53	53	52	53
Livello di pressione sonora mandata *Sound pressure level outlet*		dB(A)	7	-	55	-	-	-	-	-
		dB(A)	6	-	54	-	-	-	-	-
		dB(A)	5	-	54	-	-	-	-	-
		dB(A)	4	52	51	-	-	-	-	-
		dB(A)	3	52	49	57	57	57	65	66
		dB(A)	2	51	47	56	56	58	60	61
		dB(A)	1	49	46	53	54	54	55	56

- Il test per la rilevazione del livello di potenza sonora è stato eseguito in accordo con la normativa EN 16583:2015
  The sound power level test has to be performed according to EN 16583:2015 standard
- Livello di pressione sonora: considerata 8,6 dB(A) inferiore rispetto alla potenza sonora in una stanza di 90 m³ con un tempo di riverbero di 0,5 sec.
  Sound pressure level: 8,6 dB(A) lower that the sound power level for a room of 90 m³ with a reverberation time of 0,5 sec.
- Valori tensione ammissibile: ~230V / 1ph / 50-60Hz
  Supported power supply: ~230V / 1ph / 50-60Hz

velocità cablate / *wired speed*

(E) = Eurovent

* Unità non soggette a certificazione Eurovent per limiti di definizione. *Units not subject to Eurovent certification due to definition limits*

Impianto a 4 tubi (batteria 3R+1 taglie 10-50) (batteria 4R+2R taglie 60,70)
4 pipe system (3R+1 coil sizes 10-50) (4R+2R coil sizes 60,70)

					10	20	30	40	50	60 (*)	70 (*)
RAFFREDDAMENTO - *COOLING* Temp. acqua ingresso - *Inlet water temp.*: 7 °C Temp. acqua uscita - *Outlet water temp.*: 12 °C Temp. aria ingresso - *Inlet air temp.*: 27 °C d.b. 19 °C w.b.	Potenza frigorifera totale *Total cooling capacity*	(E)	W	7	-	4943	-	-	-	-	-
			W	6	-	4920	-	-	-	-	-
			W	5	-	**4854**	-	-	-	-	-
			W	4	**2665**	**4631**	-	-	-	-	-
			W	3	2654	4362	**6776**	**8117**	**10650**	22958	40818
			W	2	**2623**	**4044**	**6657**	**7926**	**9644**	21409	38985
			W	1	**2493**	3658	**6376**	**7506**	**8031**	19636	35350
	Potenza frigorifera sensibile *Sensible cooling capacity*	(E)	W	7	-	3653	-	-	-	-	-
			W	6	-	3640	-	-	-	-	-
			W	5	-	**3584**	-	-	-	-	-
			W	4	**1975**	**3411**	-	-	-	-	-
			W	3	1964	3192	**5076**	**6047**	**8080**	16498	29758
			W	2	1933	**2944**	**4987**	**5906**	**7244**	15299	28335
			W	1	1833	2638	**4756**	**6016**	**5931**	13956	25470
	Portata acqua *Water flow*		l/h	7	-	871	-	-	-	-	-
			l/h	6	-	866	-	-	-	-	-
			l/h	5	-	855	-	-	-	-	-
			l/h	4	475	815	-	-	-	-	-
			l/h	3	473	768	1198	1431	1900	4109	7335
			l/h	2	468	714	1172	1394	1718	3820	6966
			l/h	1	446	647	1123	1320	1430	3487	6308
	Perdite di carico lato acqua *Water pressure drop*	(E)	kPa	7	-	24,3	-	-	-	-	-
			kPa	6	-	24,1	-	-	-	-	-
			kPa	5	-	**23,5**	-	-	-	-	-
			kPa	4	**13,0**	**21,6**	-	-	-	-	-
			kPa	3	12,8	19,5	**27,2**	**26,7**	**23,1**	33,1	34,6
			kPa	2	**12,6**	**17,1**	**26,2**	**25,5**	**19,3**	29,1	31,6
			kPa	1	**11,6**	14,4	**24,3**	**23,2**	**14,0**	24,8	26,5
RISCALDAMENTO - *HEATING* Temp. aria - *Air temp.*: 20 °C Temp. acqua ingresso - *Inlet water temp.*: 65/55 °C	Potenza termica *Heating capacity*	(E)	W	7	-	4440	-	-	-	-	-
			W	6	-	4420	-	-	-	-	-
			W	5	-	**4360**	-	-	-	-	-
			W	4	**2560**	**4180**	-	-	-	-	-
			W	3	2550	3960	**6130**	**7240**	**9810**	29570	52860
			W	2	**2530**	**3710**	**6010**	**7070**	**8930**	27580	50280
			W	1	**2420**	3400	**5770**	**6730**	**7560**	25290	45700
	Portata acqua *Water flow*		l/h	7	-	389	-	-	-	-	-
			l/h	6	-	387	-	-	-	-	-
			l/h	5	-	383	-	-	-	-	-
			l/h	4	225	366	-	-	-	-	-
			l/h	3	224	347	537	635	860	2593	4634
			l/h	2	222	326	526	619	783	2418	4408
			l/h	1	212	298	506	590	663	2217	4006
	Perdite di carico lato acqua *Water pressure drop*	(E)	kPa	7	-	10,0	-	-	-	-	-
			kPa	6	-	9,9	-	-	-	-	-
			kPa	5	-	**9,7**	-	-	-	-	-
			kPa	4	**18,3**	**9,0**	-	-	-	-	-
			kPa	3	18,2	8,2	**21,0**	**10,8**	**21,7**	20,8	22,3
			kPa	2	**17,9**	**7,3**	**20,3**	**10,4**	**18,4**	18,0	20,4
			kPa	1	**16,6**	6,3	**18,9**	**9,5**	**13,7**	15,5	17,3
RISCALDAMENTO - *HEATING* Temp. aria - *Air temp.*: 20 °C Temp. acqua ingresso - *Inlet water temp.*: 70/60 °C	Potenza termica *Heating capacity*		W	7	-	5030	-	-	-	-	-
			W	6	-	5000	-	-	-	-	-
			W	5	-	4940	-	-	-	-	-
			W	4	2900	4730	-	-	-	-	-
			W	3	2890	4490	6930	8200	11110	33410	59740
			W	2	2860	4210	6800	8010	10110	31150	56820
			W	1	2740	3850	6530	7620	8560	28560	51630
	Portata acqua *Water flow*		l/h	7	-	442	-	-	-	-	-
			l/h	6	-	439	-	-	-	-	-
			l/h	5	-	434	-	-	-	-	-
			l/h	4	255	416	-	-	-	-	-
			l/h	3	253	394	609	720	976	2935	5247
			l/h	2	251	369	597	703	888	2737	4990
			l/h	1	240	338	574	670	752	1509	4536
	Perdite di carico lato acqua *Water pressure drop*		kPa	7	-	12,3	-	-	-	-	-
			kPa	6	-	12,2	-	-	-	-	-
			kPa	5	-	11,9	-	-	-	-	-
			kPa	4	22,4	11,0	-	-	-	-	-
			kPa	3	22,2	10,0	25,7	13,3	26,6	24,9	27,2
			kPa	2	21,9	8,9	24,8	12,7	22,6	22,0	24,9
			kPa	1	20,2	7,7	23,2	11,7	16,8	18,9	21,1

- Il test per la rilevazione del livello di potenza sonora è stato eseguito in accordo con la normativa EN 16583:2015
  The sound power level test has to be performed according to EN 16583:2015 standard
- Livello di pressione sonora: considerata 8,6 dB(A) inferiore rispetto alla potenza sonora in una stanza di 90 m^3 con un tempo di riverbero di 0,5 sec.
  Sound pressure level: 8,6 dB(A) lower that the sound power level for a room of 90 m^3 with a reverberation time of 0,5 sec.
- Valori tensione ammissibile: ~230V / 1ph / 50-60Hz
  Supported power supply: ~230V / 1ph / 50-60Hz

velocità cablate / *wired speed*

(E) = Eurovent

* Unità non soggette a certificazione Eurovent per limiti di definizione. *Units not subject to Eurovent certification due to definition limits*

Performance technical data

Impianto a 4 tubi (batteria 3R+1 taglie 10-50) (batteria 4R+2R taglie 60,70) ***4 pipe system (3R+1 coil sizes 10-50) (4R+2R coil sizes 60,70)***				10	20	30	40	50	60 (*)	70 (*)
Portata aria *Air flow*	(E)	m^3/h	7	-	939	-	-	-	-	-
		m^3/h	6	-	932	-	-	-	-	-
		m^3/h	5	-	**914**	-	-	-	-	-
		m^3/h	4	**523**	**855**	-	-	-	-	-
		m^3/h	3	519	787	**1372**	**1595**	**2335**	4009	7657
		m^3/h	2	**512**	**713**	**1330**	**1536**	**2010**	3627	7112
		m^3/h	1	**478**	625	**1249**	**1422**	**1547**	3206	6186
Pressione statica *Static pressure*	(E)	Pa	7	-	64	-	-	-	-	-
		Pa	6	-	62	-	-	-	-	-
		Pa	5	-	**59**	-	-	-	-	-
		Pa	4	**54**	**50**	-	-	-	-	-
		Pa	3	52	42	**55**	**56**	**70**	122	121
		Pa	2	**50**	**34**	**50**	**50**	**50**	100	100
		Pa	1	**44**	26	**44**	**42**	**29**	76	77
Livello di potenza sonora aspirazione + radiata *Sound power level inlet + radiated*	(E)	dB(A)	7	-	63	-	-	-	-	-
		dB(A)	6	-	63	-	-	-	-	-
		dB(A)	5	-	**62**	-	-	-	-	-
		dB(A)	4	**58**	**59**	-	-	-	-	-
		dB(A)	3	57	58	**63**	**65**	**67**	70	72
		dB(A)	2	**57**	**56**	**62**	**64**	**68**	66	67
		dB(A)	1	**56**	55	**60**	**62**	**62**	61	62
Livello di potenza sonora mandata *Sound power level outlet*	(E)	dB(A)	7	-	61	-	-	-	-	-
		dB(A)	6	-	61	-	-	-	-	-
		dB(A)	5	-	**60**	-	-	-	-	-
		dB(A)	4	**61**	**60**	-	-	-	-	-
		dB(A)	3	61	58	**66**	**66**	**66**	74	75
		dB(A)	2	**60**	**56**	**65**	**65**	**67**	69	70
		dB(A)	1	**58**	55	**62**	**63**	**63**	64	65
Livello di pressione sonora aspirazione + radiata *Sound pressure level inlet + radiated*		dB(A)	7	-	54	-	-	-	-	-
		dB(A)	6	-	54	-	-	-	-	-
		dB(A)	5	-	53	-	-	-	-	-
		dB(A)	4	49	50	-	-	-	-	-
		dB(A)	3	48	49	54	56	58	61	63
		dB(A)	2	48	47	53	55	59	57	58
		dB(A)	1	47	46	51	53	53	52	53
Livello di pressione sonora mandata *Sound pressure level outlet*		dB(A)	7	-	52	-	-	-	-	-
		dB(A)	6	-	52	-	-	-	-	-
		dB(A)	5	-	51	-	-	-	-	-
		dB(A)	4	52	51	-	-	-	-	-
		dB(A)	3	52	49	57	57	57	65	66
		dB(A)	2	51	47	56	56	58	60	61
		dB(A)	1	49	46	53	54	54	55	56

- Il test per la rilevazione del livello di potenza sonora è stato eseguito in accordo con la normativa EN 16583:2015
  The sound power level test has to be performed according to EN 16583:2015 standard
- Livello di pressione sonora: considerata 8,6 dB(A) inferiore rispetto alla potenza sonora in una stanza di 90 m^3 con un tempo di riverbero di 0,5 sec.
  Sound pressure level: 8,6 dB(A) lower that the sound power level for a room of 90 m^3 with a reverberation time of 0,5 sec.
- Valori tensione ammissibile: ~230V / 1ph / 50-60Hz
  Supported power supply: ~230V / 1ph / 50-60Hz

velocità cablate / *wired speed*

(E) = Eurovent

* Unità non soggette a certificazione Eurovent per limiti di definizione. *Units not subject to Eurovent certification due to definition limits*

07MK | asynchronous motor

				10	20	30	40	50	60 (*)	70 (*)
Potenza assorbita dal motore del ventilatore (E) *Motor fan absorbed power*	W	7		-	137	-	-	-	-	-
	W	6		-	130	-	-	-	-	-
	W	5		-	**126**	-	-	-	-	-
	W	4		**105**	**119**	-	-	-	-	-
	W	3		106	118	**204**	**223**	**430**	992	1932
	W	2		**107**	**116**	**173**	**194**	**366**	861	1615
	W	1		**107**	112	**164**	**194**	**299**	684	1410
Corrente assorbita dal motore del ventilatore *Motor fan absorbed current*	A	7		-	0,64	-	-	-	-	-
	A	6		-	0,63	-	-	-	-	-
	A	5		-	0,59	-	-	-	-	-
	A	4		0,51	0,55	-	-	-	-	-
	A	3		0,51	0,54	1,12	1,18	1,90	4,52	9,00
	A	2		0,51	0,54	0,87	0,96	1,67	3,95	7,90
	A	1		0,49	0,52	0,79	0,92	1,45	3,25	6,50
Tensione di alimentazione *Power supply*				~230V / 1ph / 50-60Hz						

velocità cablate / *wired speed*

* Unità non soggette a certificazione Eurovent per limiti di definizione. *Units not subject to Eurovent certification due to definition limits*

(E) = Eurovent

07MK | ECM motor

				10	20	30	40	50	60 (*)	70 (*)
Potenza assorbita dal motore del ventilatore (E) *Motor fan absorbed power*	W	7		-	118	-	-	-	-	-
	W	6		-	113	-	-	-	-	-
	W	5		-	**112**	-	-	-	-	-
	W	4		**81**	**92**	-	-	-	-	-
	W	3		78	74	**161**	**172**	**345**	656	1285
	W	2		**75**	**58**	**145**	**151**	**224**	475	990
	W	1		**63**	43	**124**	**122**	**117**	336	673
Corrente assorbita dal motore del ventilatore *Motor fan absorbed current*	A	7		-	0,99	-	-	-	-	-
	A	6		-	0,98	-	-	-	-	-
	A	5		-	0,97	-	-	-	-	-
	A	4		0,66	0,78	-	-	-	-	-
	A	3		0,61	0,60	1,26	1,22	1,92	2,81	5,52
	A	2		0,58	0,47	1,19	1,04	1,07	2,05	4,26
	A	1		0,48	0,35	1,01	0,88	0,54	1,46	2,93
Tensione di controllo velocità (Vcc) *Speed control voltage (Vdc)*	V	7		-	8,80	-	-	-	-	-
	V	6		-	8,70	-	-	-	-	-
	V	5		-	8,50	-	-	-	-	-
	V	4		8,70	7,20	-	-	-	-	-
	V	3		8,50	6,00	6,80	6,20	7,20	5,70	5,40
	V	2		8,30	4,80	6,20	5,40	5,90	4,30	4,30
	V	1		7,40	3,00	5,60	4,50	4,40	3,20	3,20
Tensione di alimentazione *Power supply*				~230V / 1ph / 50-60Hz						

velocità cablate / *wired speed*

* Unità non soggette a certificazione Eurovent per limiti di definizione. *Units not subject to Eurovent certification due to definition limits*

(E) = Eurovent

01MK

Centrifugal air exhaust fan

Construction features

Bearing structure:

01MK-A single paneling unit: shaped galvanized steel profiles, ABS angular profiles and galvanized steel panels internally coated with polyester, 10 mm thick.

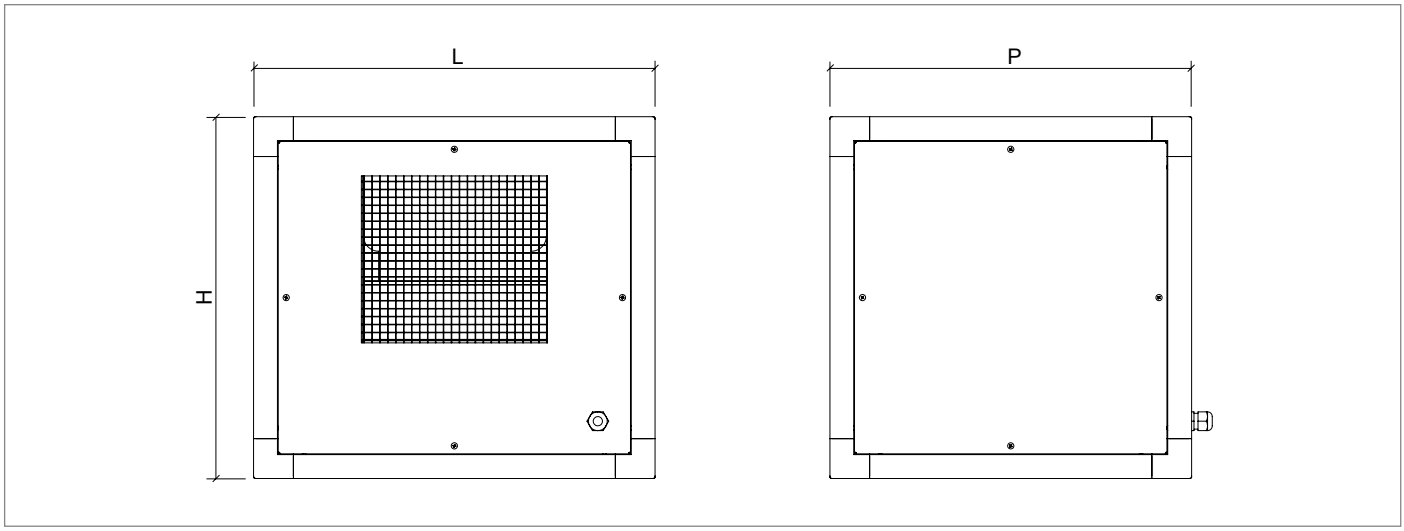
01MK-B double paneling unit: extruded aluminum profiles, ABS corner pieces and double paneling panels with 45 kg / m^3 density expanded polyurethane.

Ventilating sections

Forward blades double suction fan with single-phase asynchronous motor directly coupled to 3 speeds.
Single speed motors are available on request.

Dimensions

			01MK-A				01MK-B			
			02	05	07	08	02	05	07	08
Lunghezza - *Lenght*	L	mm	505	605	705	805	505	605	705	805
Altezza - *Height*	H	mm	455	505	555	655	455	505	555	655
Profondità - *Depth*	P	mm	455	505	555	655	455	505	555	655



Performance technical data

		02	05	07	08
Tipologia dichiarata - *Declared typology*		UVNR-UVU *NRVU-UVU*	UVNR-UVU *NRVU-UVU*	UVNR-UVU *NRVU-UVU*	UVNR-UVU *NRVU-UVU*
Tipo di azionamento installato o prescritto - *Type of drive installed or intended to be installed*		Multivelocità - *Multispeed*			
Tipologia sistema di recupero HRS - *Type of HRS*		Assente - *Absent*			
Efficienza termica del sistema - *Thermal efficiency of heat recovery*	%	Non disponibile - *Not available*			
Portata aria nominale UVNR-UVU - *Nominal flow rate NRVU-UVU*	m^3/s	0,381	0,629	0,780	0,890
Potenza elettrica assorbita effettiva - *Effective electric power input*	kW	0,280	0,538	0,857	0,724
Potenza specifica interna S.F.P. - *Specific fan power S.F.P. int*	$W/(m^3/s)$	229	221	197	134
Velocità frontale alla portata nominale - *Face velocity at design flow rate*	m/s	7,7	8,0	8,1	6,6
Pressione esterna nominale (Δps, ext) - *Nominal external pressure (Dps, ext)*	Pa	202	298	371	285
Perdita di pressione dei componenti interni della ventilazione (Δps,int) - *Internal pressure drop of ventilation components (Dps,int)*	Pa	64	70	67	47
Efficienza statica dei ventilatori secondo (UE) n.327/2011 - *Static efficiency of fans (UE) n.327/2011*	%	34,2	36,1	37,2	36,8
Massimo trafilamento esterno dell'involucro - *Declared maximum external leakage rates of the casing of ventilation units*	%	≤ 3%	≤ 3%	≤ 3%	≤ 3%
Prestazione energetica o classificazione energetica dei filtri - *Energy performance or energy rating of the filters*		Assente - *Absent*			
Descrizione del segnale visivo dei filtri - *Description of the visual signal of the filters*		Assente - *Absent*			
Livello di potenza sonora irradiato dall'involucro - *Sound power level (LWA)*	dB(A)	67	57	61	74
Tipologia di ventilatore - *Fan typology*	-	7/7	9/9	10/10	12/12
Numero velocità - *Number of speed*	n.	3	3	3	3
Classe motore - *Motor class*	-	F	F	F	F
Grado protezione motore - *Motor protection grade*	IP	IP20	IP20	IP20	IP20
Potenza nominale resa - *Nominal power*	W	145	370	550	735
Numero poli ventilatore - *Fan poles number*	n.	4	4	4	6
Potenza massima assorbita - *Maximum absorbed power*	W	460	900	1520	1780
Corrente massima assorbita - *Maximum absorbed current*	A	2,10	4,00	7,14	8,47
Temperatura minima aria di utilizzo - *Minimum air operating temperature*	°C	-10	-10	-10	-10
Temperatura massima aria di utilizzo - *Maximum air operating temperature*	°C	40	40	40	40
Numero di giri massimo al minuto - *Maximum R.P.M.*	1/min	1080	755	710	550
Alimentazione elettrica - *Power supply*		230V/1ph/50-60Hz			

				02	05	07	08
PRESSIONE STATICA DISPONIBILE - *STATIC PRESSURE AVAILABLE*	Massima velocità *Maximum speed*	20 Pa	m^3/h	1862	2850	/	/
		40 Pa	m^3/h	1840	2865	/	/
		60 Pa	m^3/h	1803	2880	/	5307
		80 Pa	m^3/h	1763	2882	/	5296
		100 Pa	m^3/h	1716	2875	/	5276
		120 Pa	m^3/h	1666	2868	/	5256
		140 Pa	m^3/h	1615	2841	3564	5192
		160 Pa	m^3/h	1553	2783	3551	5080
		200 Pa	m^3/h	1398	2667	3474	4841
		250 Pa	m^3/h	1163	2445	3356	4212
		300 Pa	m^3/h	/	2149	3209	/
	Media velocità *Medium speed*	20 Pa	m^3/h	1488	1988	/	/
		40 Pa	m^3/h	1490	2013	/	/
		60 Pa	m^3/h	1493	2037	2742	4247
		80 Pa	m^3/h	1476	2037	2743	4299
		100 Pa	m^3/h	1437	2022	2743	4305
		120 Pa	m^3/h	1399	2008	2742	4310
		140 Pa	m^3/h	1361	1970	2740	4315
		160 Pa	m^3/h	1308	1907	2733	4321
		200 Pa	m^3/h	1175	1780	2718	4118
		250 Pa	m^3/h	/	1596	2598	3690
		300 Pa	m^3/h	/	/	2416	/
	Minima velocità *Minimum speed*	20 Pa	m^3/h	1123	1540	/	/
		40 Pa	m^3/h	1134	1541	/	/
		60 Pa	m^3/h	1145	1537	2232	3460
		80 Pa	m^3/h	1142	1518	2233	3507
		100 Pa	m^3/h	1134	1498	2226	3520
		120 Pa	m^3/h	1126	1472	2218	3534
		140 Pa	m^3/h	1096	1424	2211	3547
		160 Pa	m^3/h	1048	1375	2179	3561
		200 Pa	m^3/h	/	1270	2062	3521
		250 Pa	m^3/h	/	/	1912	2917
		300 Pa	m^3/h	/	/	1752	1807

Note

Note

Concept and design: Aliseo Group
Printed in Italy 12/2019

00M_02_03_02__Product Brochure_Mekar__EN

MEKAR®

a Company of the Aliseo Group

MEKAR S.r.l Società Unipersonale

Viale Caduti sul Lavoro, 25
37063 Isola della Scala (VR) - Italy
Tel. +39 045 6630536 - Fax +39 045 6630513
info@mekar.it - www.mekar.it
www.aliseogroup.com

MADE IN ITALY

ALISEO GROUP