MITSUBISHI ELECTRIC
HYDRONICS & IT COOLING SYSTEMS S.p.A.

COMFORT

AIR HANDLING UNITS

WZ-E

EUROVENT CERTIFIED PERFORMANCE
AHU N°17.09.017
Range WZ-E
www.eurovent-certification.com

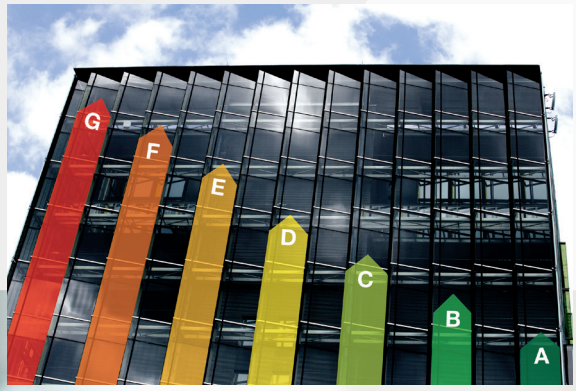
AIR HANDLING UNITS
FROM 600 TO 115400 m³/h

melcohit.com

CLIMAVENETA®

OUR BIGGEST CHALLENGE IS DELIVERING THE BEST SOLUTION FOR YOUR BUILDING.

**Every project has particular comfort and technical features.
MEHITS has extensive experience in air treatment and can offer a specific solution for any kind of requirement.**

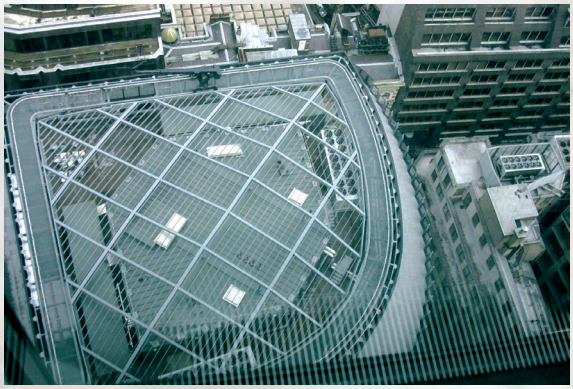


More challenging requirements

High levels of comfort, together with efficient performance and energy efficiency are key features in Air handling units for traditional applications.
The main aim is to maintain constant temperature and humidity levels, ensuring a reduction of operating costs.

Product quality

The main objective is to ensure high levels of comfort over time.
Continuous improvement of the units' performance and the use of quality components can contribute in extending the life cycle of the plant.



Versatile and easier installation

Versatility and plug-and-play solutions are fundamental features in traditional applications.
The reduction of on-site operations contributes in making the assembly process easier, thus increasing cost savings.

Focus on Comfort

It is widely recognized that low noise emissions are directly connected to high comfort levels.
By improving both comfort and efficiency, the value of the building and the investment increases.

TECHNOLOGICAL CHOICES

SMART CONTROL

WZ-E is equipped with the best components available on the market: temperature and humidity probes and high precision differential pressure switches.
The core system that manages all the components is the AHU3000+ controller. This controller ensures the programming of different time bands, increasing the efficiency of the system and reducing the energy consumption when the system isn't working at full load. Key features are:
- Remote control (up to 500 m) thanks to a dedicated panel
- Regulation of the part-load operation according to the set-point and the ambient load
- Monitoring through the web server and BMS compatibility (Modbus, RS-485, Bacnet over-IP).

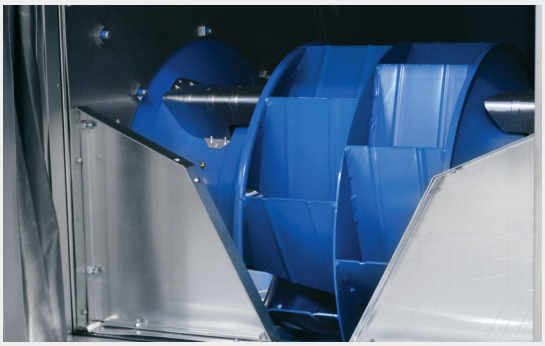
STURDY CASING

WZ-E units feature a special casing design with different kinds of profiles and panels that can be chosen depending on the purpose of the application.
The high quality level of the structure allows the units to operate at pressures higher than 1000 Pa with minimized air leakages and high mechanical strength.
The panels are manufactured in a such a way so as provide effective thermal and acoustic insulation.
Installation is made easier through the design of modules with connectors that allow easy cleaning of the unit.

Selection Software

The design of the AHU is completely configurable thanks to the "CV CTA PRO" selection software. This smart tool ensures quick and precise calculations of the unit selection.
The selection software computes and presents all the necessary data for correct air handling unit selection. All extra accessories can be precisely selected depending on the kind of application.
It provides Autocad drawings for the selected units with a different level of detail and quality according to the release and the continuous development of the tool.
The software labels all the AHUs drawings ready for production with the 'Free Pass' logo and, with no need for any approval, the order process for these units is considerably simplified.
Data and calculations are quick and easy thanks to an user-friendly interface.

EFFICIENCY, LOW NOISE LEVELS, RELIABLE OPERATION, ATTENTION TO DETAIL, AND EASY CONFIGURATION ARE THE DISTINCTIVE FEATURES OF WZ-E UNITS.



FANS

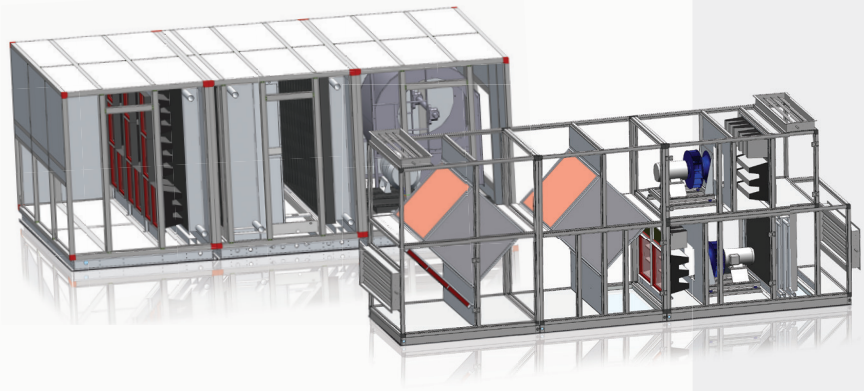
A wide array of fan options provides optimal sound and efficiency choices depending on the project's requirements.
The intrinsic efficiency of the fans contributes in improving the overall efficiency of the units, ensuring very low noise emissions.
Fans with variable speed reduce the noise levels according to the partial load of the coils and the temperature of the treated air.
EC fans classified IE4 are also available for motor efficiency higher than 90% .

MONITORING DEVICES

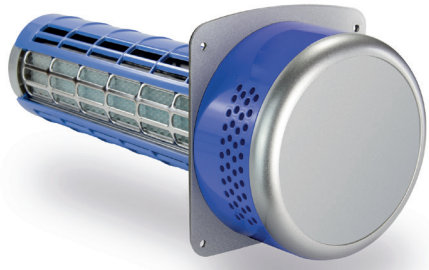
The controller ensures interconnectivity with all monitoring and supervision devices, from performance data analysis and safety systems, to historical data on operating parameters.
The controller can be coupled with third-party controllers, using a common language. The advantages are:
Smart and easy management of a single unit, reduced operating costs, statistics, and prompt response to alarms and failures.

Main Functions

- It generates files to be exchanged among the users and the company
- It creates Word/Pdf files with the specifications of each single unit
- Always up-to-date data through an Internet connection
- Different languages can be selected
- For many unit configurations, it's possible to get the final drawings that represent the complete unit
- Ability to configure and quote the thermoregulation system



Active sanitizing system with photocatalytic oxidation



The active sanitizing system features a special UV-C lamp which uses the photocatalytic oxidation process to reduce the microbial load airborne (such as bacteria, molds, allergens, odors, organic and volatile compounds, ultra-fine powders), in order to make your environment a healthier living place.

SUPERMAKET & FOOD CHAIN	It has been proven that the use of this technology not only increases air quality, but also increases the duration of food freshness because the bacteriological load in the air is reduced.
HOTELS, GYMS & RESTAURANTS	Reduction of smells and contaminants, giving the perception of healthier air in the rooms.
OFFICE BUILDINGS	Increased reduction of bacteria, allergens, and odors.

KEY FEATURES

From 95-100% reduction of bacterial load and germs contained in the air.

95-100%

PERFECT AIR FILTRATION

Perfect air filtration thanks to the ionization process where smaller airbourne dust clusters are attached to each other, facilitating their reduction.

BETTER AIR QUALITY

Increased reduction of allergens, bacteria, and odors which can cause allergies or breathing diseases.

REDUCTION OF ODORS

Smoke, chemical, cooking, etc.

REDUCED MAINTENANCE

Quick and easy maintenance of the honeycomb filter, with a simple jet of compressed air.

HIGH FLOW RATE

High flow rate of treated air (up to 4000 m^3 / h per lamp).

IMPROVED HYGIENE

Continuous sanification (as long as the air ventilation system is running).

TEMPERATURE CONTROL TOOLS

The unit is completely plug-and-play and all components are manufactured and assembled in-house.
The result is simple: better performance and a reduction in the installation times and operating costs.

PLUG FAN (AC and EC motor)

CENTRIFUGAL FANS

COOLING AND HEATING COILS

HEAT RECOVERY SYSTEMS

FILTERS

HUMIDIFIERS

DAMPERS

Global Excellence

PROBES

Temperature and humidity levels together with the air quality controls are possible thanks to the probes and the pressure transducers.
WZ-E units feature special probes and sensors that can check temperature and humidity levels with high precision. These components are positioned in specific areas of the unit in order to avoid any data reading errors.

ADJUSTMENT COMPONENTS

Two or three-way mixing valves are selected according to the consultants' calculations for the cooling and heating coils' performances.
The valves are provided with a complete hydraulic kit; the actuators are cabled to the control board by using shielded cables.

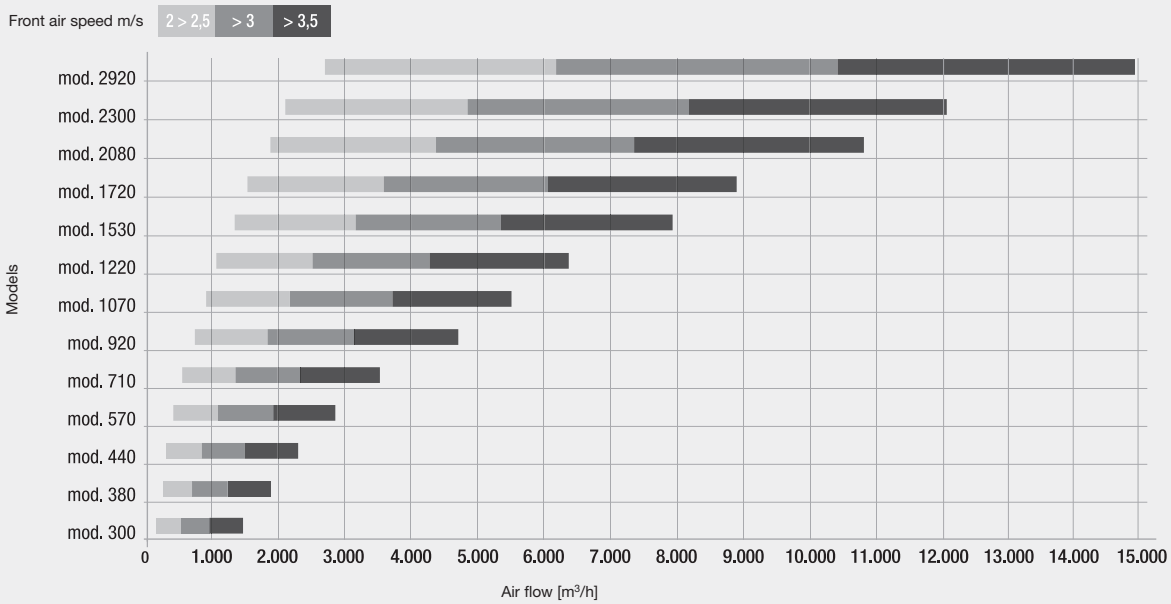
CONTROL SYSTEMS

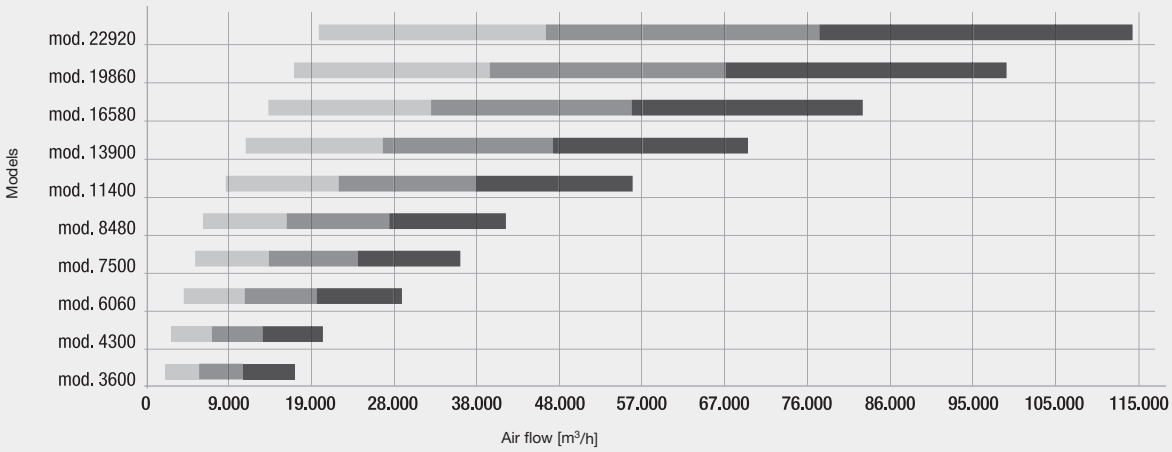
The unit makes use of a microprocessor regulation with an optimised specific software configuration.
The user-friendly keyboard positioned on the unit provides remote control over all the devices and configuration modes.

WZ-E

One solution for any project

WZ-E air handling units are specially designed to cater to any installation needs.
The range consists of 23 standard sizes, with air flow ranges varying from 1,000 to 115,500 m³/h, and face air speed through the coils of 2,5 m/s.
WZ-E can be combined with a wide range of accessories, making it the most suitable unit not only for standard applications but also for special ones.





CERTIFICATION

The WZ-E range complies with the strictest regulations, in order to provide a reliable answer to the requirements in air handling units. Reliability and quality are based on projects and references, together with technical expertise and compliance with regulations.

Air handling units comply with the fundamental regulations and EC directives and other guidelines such as:
- Machinery Directive 2006/42/EC
- EMC Directive 2014/30/EC
- RoHS Directive (As far as applicable) 2011/65/EU
- ErP Directive 2009/125/EC

WZ-E is available as:

- ✓ SINGLE FLOW OR DOUBLE FLOW UNITS
- ✓ WITH OR WITHOUT A CONTROL BOARD
- ✓ WITH OR WITHOUT HEAT RECOVERY SYSTEMS

TECNICAL DATA

WZ-E		300	380	440	570	710	920	1070	1120
Air flow (Speed 1,5 m/s)	m³/h	650	810	970	1.130	1.400	1.700	2.200	2.650
Air flow (Speed 2 m/s)	m³/h	860	1.070	1.300	1.500	1.870	2.300	2.950	3.550
Air flow (Speed 2,5 m/s)	m³/h	1.080	1.340	1.620	1.880	2.330	2.850	3.650	4.450
Air flow (Speed 3 m/s)	m³/h	1.300	1.600	1.950	2.250	2.800	3.400	4.400	5.300

WZ-E		1530	1720	2080	2300	2920	3600	4300	6060
Air flow (Speed 1,5 m/s)	m³/h	3.200	4.200	4.900	5.600	6.300	7.800	9.300	12.500
Air flow (Speed 2 m/s)	m³/h	4.350	5.600	6.500	7.450	8.400	10.300	12.400	16.700
Air flow (Speed 2,5 m/s)	m³/h	5.450	7.000	8.200	9.300	10.500	12.900	15.600	20.900
Air flow (Speed 3 m/s)	m³/h	6.550	8.400	9.800	11.200	12.600	15.500	18.600	25.100

WZ-E		7500	8480	11400	13900	16580	19860	22920	26400
Air flow (Speed 1,5 m/s)	m³/h	15.600	18.100	21.400	26.400	32.200	38.000	46.500	57.000
Air flow (Speed 2 m/s)	m³/h	20.700	24.200	28.500	35.200	42.800	51.000	62.000	76.000
Air flow (Speed 2,5 m/s)	m³/h	25.900	30.300	35.600	44.900	53.500	64.000	77.500	95.000
Air flow (Speed 3 m/s)	m³/h	31.100	36.300	42.800	52.700	64.300	76.500	93.500	115.400

WZ-E	EUROVENT CLASS	EUROVENT-CERTIFICATED VALUES - EN1886(M)
Casing Strength	D1	Max relative bending: 4mm/m
Casing Air Leakage with Pressure Test -400 Pa	L1	Max leakage: 0,15 l/s m2
Casing Air Leakage with Pressure Test +700 Pa	L1	Max leakage: 0,22 l/s m2
Filter by-pass	F9	Total leakage K: 0,5%
Thermal transmittance U	T2	0,5 < U ≤ 1 W/K m2
Thermal bridging factor	TB2	0,6 < kb ≤ 0,75 W/K m

* Box Model tested with 60mm thick profiles with thermal break and with 62mm thick polyurethane panels, internal sheet of galvanized steel and external sheet in galvanized preplastified steel.

All units are Eurovent certified according to the EN1886(M) and EN13053 regulations guaranteeing the quality of the units and accurancy in the declared performance data.

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The EN1886(M) specifies methods, test requirements and classifications for Air Handling Units that apply to the unit

The Standard covers the following structure aspects of the air treatment units:
- Mechanical strength of the structure
- Air leakage through the casing
- Air leakage through filters
- Thermal and acoustic performance of the casing

WZ-E Air Handling Units are designed and made in accordance with European regulations and directives of the CE mark, according to the highest Standards of quality and packaging . The performance data are certified according to the EUROVENT certification and TÜV laboratories (WZ-E range).

Check ongoing validity of certificate: www.eurovent-certification.com

“BY FAR THE BEST PROOF IS EXPERIENCE”

Sir Francis Bacon
British philosopher (1561 - 1626)

AJACCIO HOSPITAL

2016-2018 Ajaccio, Corsica - France

Application:
Healthcare / Hospitals

Plant type:
Hydronic System - Air to Air System

Cooling capacity:
4000 kW

Air flow:
72000 M³/h

Installed units:
4x i-FX-W (1+i) 3402, 640 fan coils, 83x WZ-E, 16x ACU, ClimaPRO
Certifications: HQE - Excellent

PROJECT

Ajaccio Hospital, located on the east side of the city with a scenic view of the sea, has replaced the old one and has become the main medical centre for the whole island. With its 340 beds, the hospital offers all types of facilities for patient care, including the emergency room, radiology, general medicine, surgery with eight operating theaters, gynecology and obstetrics, intensive care, and cardio-vascular divisions.

CHALLENGE

The Hospital was built in strict compliance with environmental and energy saving standards, according to the French certification HQE (Haute Qualité Environnementale).

SOLUTION

In the new Ajaccio Hospital, 4 Climaveneta high efficiency water cooled chillers i-FX-W (1+i) 3402 for a total cooling capacity of about 4,000 kW were installed. For the air distribution in the hospital 640 fan coil units, belonging to a-LIFE and a-HWD2 ranges, were chosen, while the air treatment is provided by 60 WZ-E air handling units. Moreover 23 AHUs have been installed as extractors. The supply contract also included 16 Accurate close control units, which are installed in the data center of the hospital. The whole HVAC system is managed by ClimaPRO.

MORE THAN 1000 PROJECTS ALL OVER THE WORLD

LAC PALACE
2017 Tunis - Tunisia

Application: Shopping centre
Plant type: Hydronic System
Cooling capacity: 120 kW
Installed machines: 1x NECS-N 0512T, 3x WZ-E

BENTA
2017-2018 Dbayeh - Lebanon

Application: Office buildings
Plant type: Hydronic System - Air to Air System
Cooling capacity: 1406 kW
Air flow: 5500 m³/h
Installed machines: 1x i-FX/K/S 6022, 1x WZ-E

ANGSANA CORFU
2017-2018 Corfu - Greece

Application: Hotels and Resorts
Plant type: Hydronic System - Air to Air System
Cooling capacity: 3188 kW
Heating capacity: 5028 kW
Air flow: 213545 m³/h
Installed machines: 4x ERACS2Q LN-CA 3222, 3x EW-HT 0612, 31x WZ-E, ClimaPRO

Climaveneta brand air handling units, with their unbeatable advantages in terms of efficiency, quality, and reliability, are already the preferred choice in the most challenging and prestigious projects, all around the world.

CHILDREN'S HOSPITAL SANTA SOPHIA
2017 Athens - Greece

Period: Hospital
Application: Healthcare / Hospitals
Plant type: Hydronic System - Air to Air System
Cooling capacity: 288 kW
Air flow: 10739 m³/h
Installed machines: 1x NX/K 1014P, 2x WZ-E

STADE DE CHAYLA
2017 Beirut - Lebanon

Period: Hospital
Application: Healthcare / Hospitals
Plant type: Hydronic System
Cooling capacity: 1328 kW
Installed machines: 2x NECS-B/2418; 38x WZ-E

PICCINNI THEATRE
2010-2019 Bari - Italy

Application: Theatres
Plant type: Hydronic System - Air to Air System
Cooling capacity: 215 kW
Heating capacity: 237 kW
Air flow: 15700 m³/h
Installed machines: 1x NX-N/D/SL-CA 0804T;
1 xWZ-E-1530; 1 xWZ-E-2300; 1x WZ-E-4300

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