



**COMEX
GROUP**
TUTTO UN ALTRO CLIMA



**ACTIVE
SANITIZATION**



YOUSAN

EXCLUSIVE AIR SANITIZATION SYSTEMS

ABOUT US ...technological innovation since 1986



OUR MISSION

Founded in 1986 as a manufacturer of industrial furnaces, **Comex Group** has built its history on a fundamental value: technological innovation.

Many years of experience in the heating and air-conditioning sectors, combined with the continuous acquisition of know-how on new technologies and applications, have enabled the company to apply solutions that are always up-to-date using heat pump systems, solar cooling, heat recovery, thermal power stations and, most recently, air sanitation.

Research and innovation have distinguished the company in the heating and air conditioning sector with important advantages for **Comex Group** customers in the areas of energy saving, safety and environmental protection.

Comex Group S.r.l. LOREGGIA (PD) Via Europa Unita, 19 Tel. +39 049 9302774
www.comexgroup.it - info@comexgroup.it

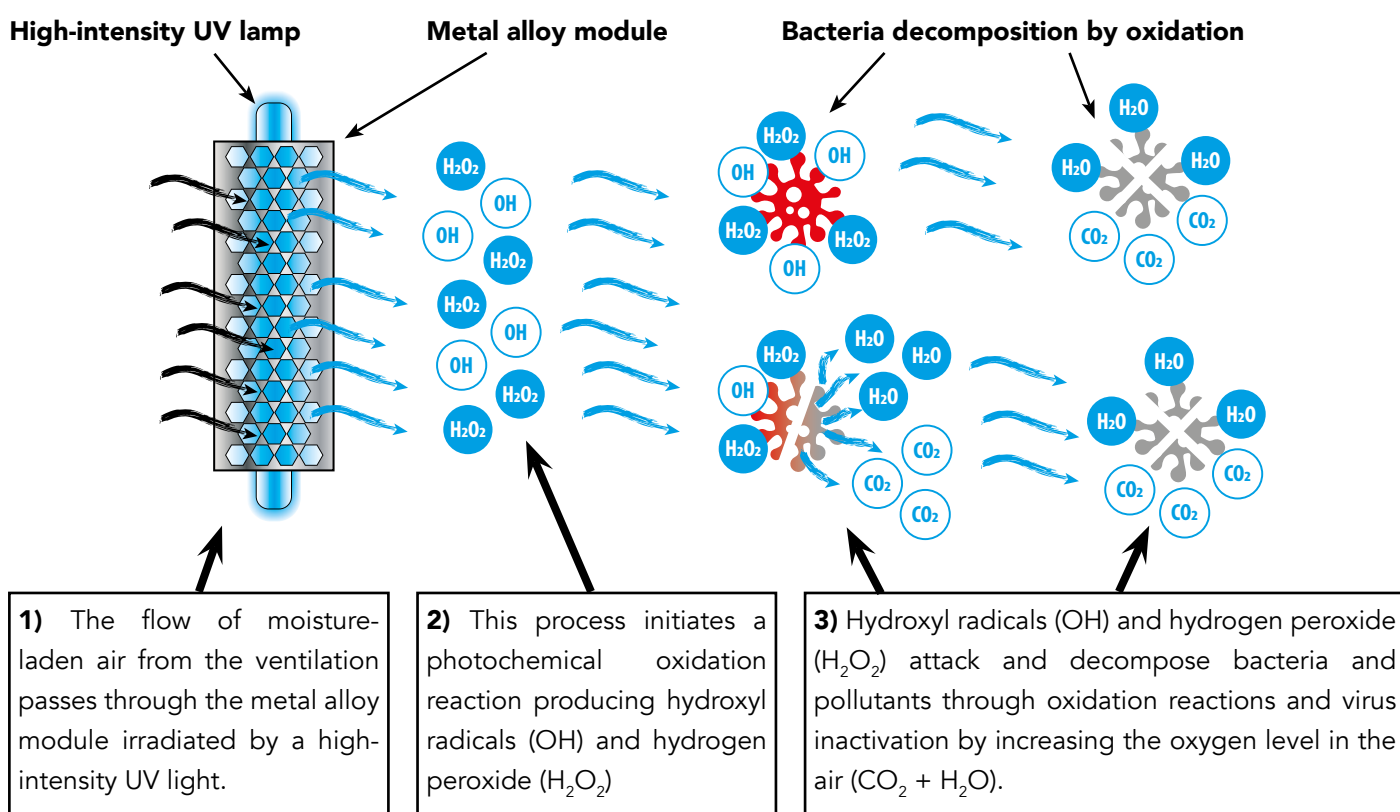
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YOUSAN - the air sanitization system



YOUSAN is the first, original range of patented fan units specifically designed for the sanitization of industrial environments. This innovative product performs an environment sanitization process based on an innovative technology, "ionising heterogeneous photocatalysis", which produces a set of photochemical reactions activated by a suitable light-sensitive catalyst that acts directly on a composite material.

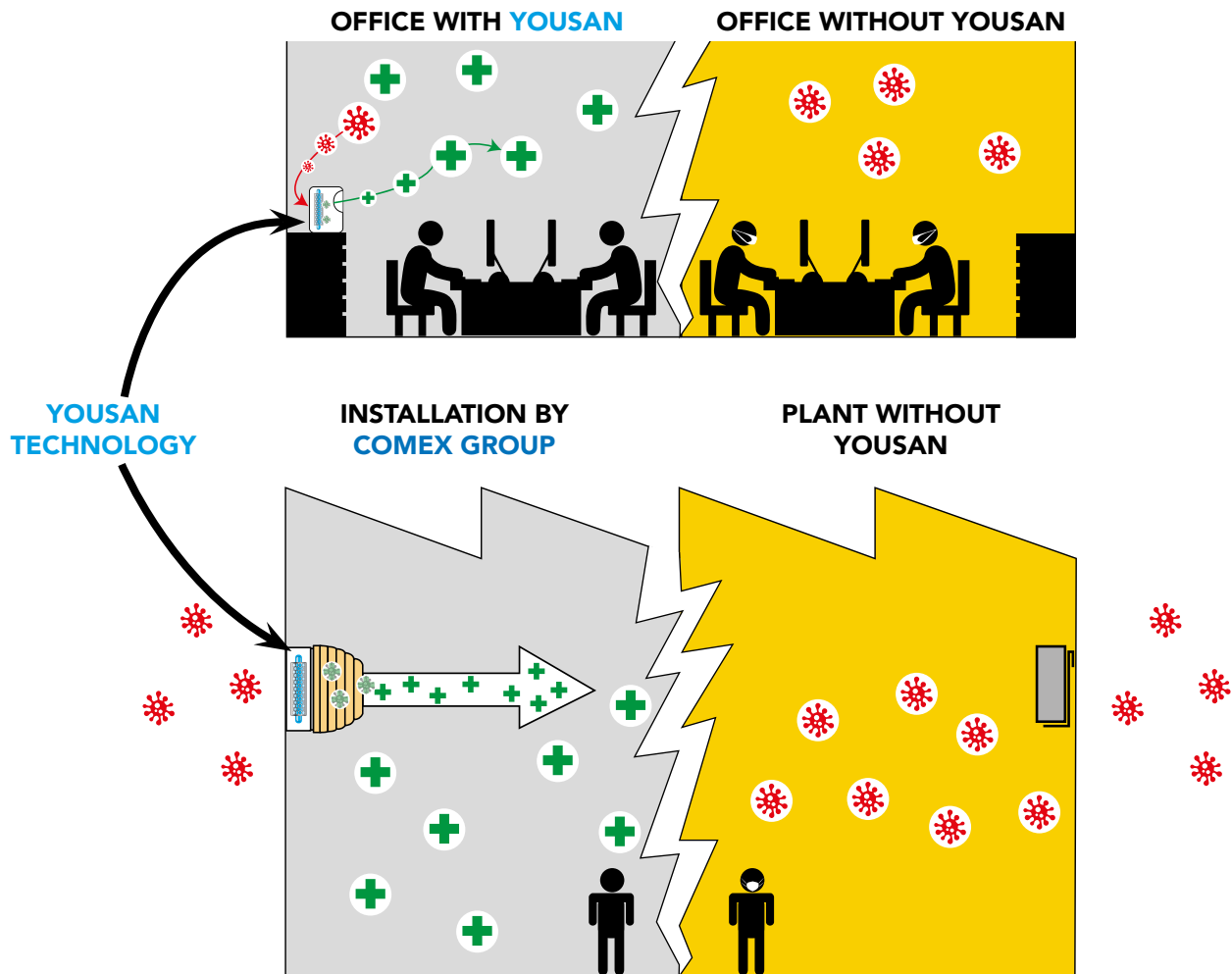
Sanitization cycle



By diffusing hydroxyl radicals (OH) and hydrogen peroxide (H_2O_2) into the environment, these are also deposited by gravity, allowing safe, effective and complete sanitization of the surfaces of ducts, air, the surfaces of treated rooms and any textiles and objects inside the rooms using YOUSAN.

YOUSAN TECHNOLOGY

Thanks to the RCI (Radiant Catalytic Ionisation) technology integrated on the entire YOUSAN product range, it is possible to achieve continuous active sanitization for the production of hydrogen peroxide (H₂O₂), the process that actively disinfects the ambient air by reducing the concentration of polluting particles, pathogenic microorganisms and allergens suspended in the air itself.



WHAT DOES YOUSAN Sanitization ALLOW?

The sanitization process takes place continuously 24 hours a day, keeping the ventilation and sanitising unit of YOUSAN products active, in a completely controlled and safe way for human beings, guaranteeing the continuity of work activity in safety while using YOUSAN units. Active sanitization of the work environment, allows one to work safely, in fact important academic studies from various universities, have verified that:

CONDITIONS WITHOUT Sanitization

Safety conditions involving social distancing and all other anti-infectious preventive measures, even if complied with, offer far less safety than the use of active environmental sanitization tools, so an asymptomatic positive or symptomatic person, in the case of COVID 19, directly touching commonly used objects in a work environment may be a vehicle for probable contagion.



the RCI (Radiant Catalytic Ionisation) active sanitization process, already integrated in all YOUSAN-type units, offers a reduction in antibiotic-resistant Staphylococci.

YOUSAN - air sanitation



**YOUSAN 280
FOR THE OFFICE**

The YOUSAN indoor ventilating and sanitising units are designed for the sanitising treatment of any environment for civil and/or domestic use such as offices, halls, meeting rooms, waiting rooms, in fact, the care taken over the design allows them to be inserted even in prestigious environments.

The YOUSAN for the office has a < 10 micron filter for purifying suspended dust in addition to the sanitising system.



**YOUSAN 15, 35 AND 70
FOR INDUSTRY**

The YOUSAN indoor ventilating and sanitising units are designed for the sanitising treatment of any industrial, tertiary and commercial environment, in fact, the care taken over the design allows them to be inserted even in prestigious environments. The YOUSAN has an electrical protection rating of IP 44, IP 54 and a filter < 10 microns for purification from suspended dust in addition to the sanitising system, and is available in 3 models with different flow rates and air throw speeds.

These solutions make it possible to meet the demands of environmental comfort for any type of activity.
The efficiency of the sanitization cycle is based on electronic control and management in continuous operation, depending on the humidity, temperature and airflow values, according to the parameters and the type of sanitization system installed in the different fan units in order to optimise their operation.



YOUSAN - For the Office



Independent portable unit, designed to cover rooms up to 279 m².

Both ventilation speed and sanitization levels can be adjusted according to the different environmental conditions and needs within the premises.

All settings, adjustments and maintenance alerts are shown on the LCD display at the front of the unit.

A standard electrical outlet is sufficient for operation.

The unit also comes with a convenient remote control for remote control.



YOUSAN 280



Remote control



YOUSAN MODEL	280	
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ROOM DIMENSIONS	m ²	from 23 to 279 with a room height of 3 m**
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CONTROLS	5 fan speed levels, 12 steps purification level control according to room surface	
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ELECTRICAL CHARACTERISTICS - OVERALL DIMENSIONS			
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SUPPLY VOLTAGE		V/Hz	100-240 V~50/60 Hz
POWER CONSUMPTION	Max	A	2,5
DEGREE OF PROTECTION		IP	IP44
DIMENSIONS	L x H x P	cm	23 x 30,5 x 30,5
WEIGHT		kg	4,62 kg

**Factor dependent on variables such as severity and frequency of pollution, humidity and operating temperature.

YOUSAN - For the factory



YOUSAN 15



YOUSAN 35



YOUSAN 70

Available in 3 models, they allow you to proportion the throw, speed and volume of treated air according to the specific needs of each individual installation.

YOUSAN are designed for wall or ceiling installation.

They can be equipped with variable air speed control to adapt the plant's set-up times or compensate for any continuous extractions.

Combined with any existing environment, in addition to sanitization they reduce the stratification coefficient.

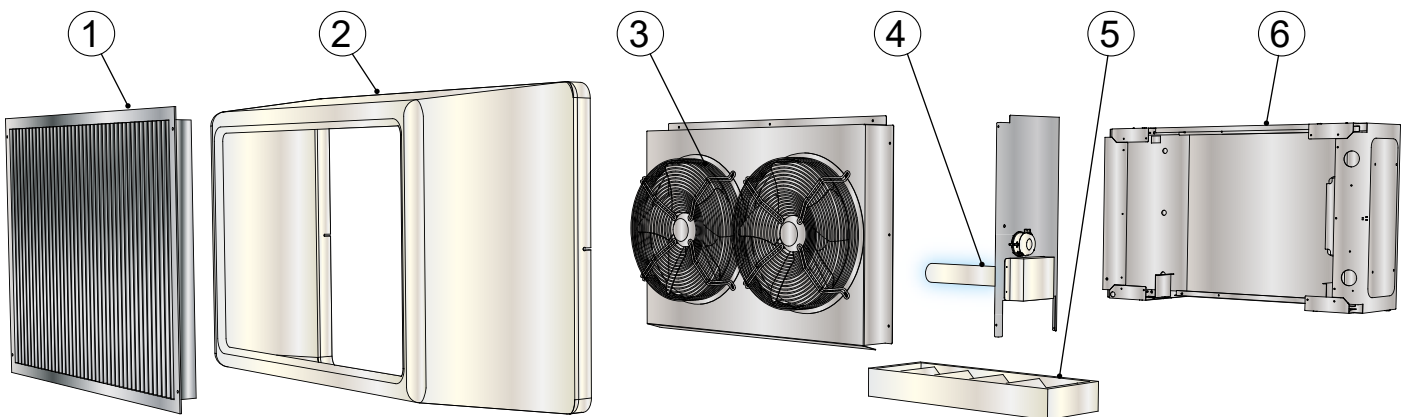
Complete availability of control and management panels for any type of application.

Centralized electrical expansion panel for controlling several units (optional).

IP54 YOUSAN degree of protection.

CONSTRUCTION CHARACTERISTICS

1. Vertical outlet air grille (standard) or bi-directional (optional)
2. ABS casing
3. Dual-speed fan with variable air flow at minimum speed
4. Sanitization unit
5. Filter up to 6 microns of efficiency for the purification of suspended dust
6. Supporting structure made of aluminized steel and with materials and components of undisputed quality.

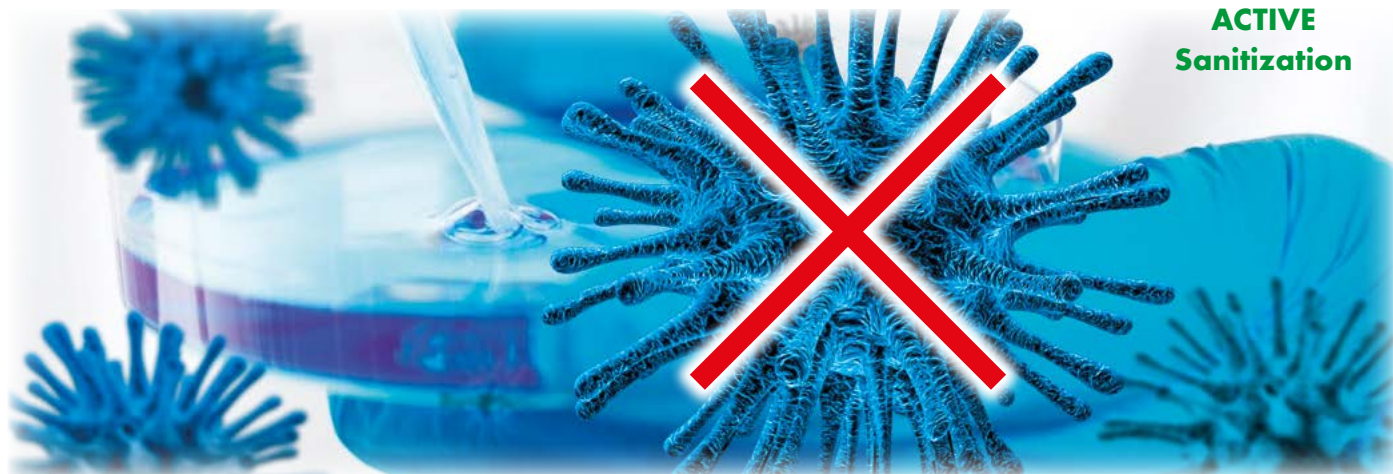


YOUSAN MODEL			15	35	70
AIR FLOW*	Speed Max/Min	m ³ /h	2.000/1.000	4.000/2.000	8.000/6.000
AIR THROW	Speed Max/Min	m	16/12	16/12	25/17
CARATTERISTICHE ELETTRICHE - INGOMBRI					
SUPPLY VOLTAGE		V/Hz	230/50	230/50	230/50
POWER CONSUMPTION	Max	W	150	260	580
DEGREE OF PROTECTION		IP	IP44	IP44	IP54
DIMENSIONS	L x H x P	mm	748 x 736 x 625	1.148 x 736 x 685	1.650 x 820 x 700
WEIGHT		kg	34	53	100
NOISE LEVEL	Speed Max/Min	dB(A)	48/45	50/47	73/65

Scientific tests on microbial agents prove the effectiveness of **YOUSAN**



**ACTIVE
Sanitization**



Scientific tests conducted in the laboratories of US universities demonstrate the effectiveness of the **RCI (Radiant Catalytic Ionisation) technology built into the entire YOUSAN product range**, with results demonstrating a reduction in the bacterial load in the environment in just 24 hours from the first continuous operation.

Testing RNA viruses:

- SARS-CoV-2 (also known as Wuhan coronavirus) is a member of the genus Betacoronavirus, itself classified by the Committee on Taxonomy of Viruses to Group IV - positive single-stranded RNA viruses, to which the tested MS2 virus belongs.
- Tests carried out by the Food and Drug Administration - U.S.A. on 31/01/2020 on the MS2 RNA virus confirm that the **RCI** technology inherent in **YOUSAN**, **reduces airborne contamination caused by the virus by 99.999% in less than 15 minutes**, which represents a logarithmic reduction to base 5.
- **The FDA claims that if MS2 is knocked down, potentially all virus RNAs are knocked down.**

Among the studies were tests on su:

BACTERIA

- Bacillus cereus,
- Candida Albicans,
- Escherichia Coli,
- Klebsiella pneumoniae
- Lysteria Monocytogenes,
- Moraxella,
- Pseudomonas,
- Stachybotrys Chartarum,
- Streptococcus Aureo R,
- Streptococcus Aureo,
- Streptococcus,
- Streptococcus spp.

VIRUS

- Murine norovirus,
- Enterovirus,
- Influenza A Virus,
- Legionella,
- **Coronavirus**,
- MS2, H1N1,
- Hepatitis A,
- Avian flu.

FUNGI

- Aspergillus,
- Penicillum,
- Mucor.



The experts' opinion:

INDICATIONS AND REFERENCES RELATING TO THE MINISTERIAL DECREES CURRENTLY IN FORCE

Recommended by the Ministry of Health for its efficacy against Covid-19, Hydrogen Peroxide (H₂O₂) generated by devices such as **YOUSAN** is totally harmless to humans and the environment and allows rapid sanitization of any environment, without causing damage to materials and equipment.

After the forced closure due to the Covid-19 emergency, the Dpcm 10 April 2020 recommends that companies and shops carry out sanitization of their premises against the Coronavirus risk.

It is important to remember that a simple disinfection of surfaces is not sufficient to completely sanitise an environment from Covid-19, because the pathogens would remain suspended in the air and in a short time would be deposited again on the surfaces.

It is therefore necessary for workplaces too to opt for total environmental sanitization of both air and surfaces.

Furthermore, on 8 May 2020, the Ministry of Health intervened on the subject of the use of hydrogen peroxide (more commonly known as hydrogen peroxide), recognising that it is a chemical compound with a disinfectant function.

This compound has therefore been explicitly recommended by the Ministry of Health for Coronavirus prevention in healthcare environments:

Our technology is essentially based on the continuous formation of hydrogen peroxide (through a photocatalytic chemical reaction, which guarantees a natural process with no side effects) inside the aeraulic ducts and thus in the environments where the ducts feed. The process is continuous 24/24 h and 365/365 days.

Our approach to the problem of SANITIZATION OF AIR AND SURFACES INDOOR ENVIRONMENTS, carried out scientifically and with the development of a certified method (adapting and addressing the specific and different needs of individuals and companies) that with the collaboration of accredited laboratories allows us to demonstrate and guarantee the result achieved, makes us unique in our ability to reduce risks in closed environments where people live together for work or other needs.

Our MISSION is to restore liveability to public and private environments frequented by human beings. Thinking of no longer being able to get together with friends for an aperitif, at a wedding or on other occasions, means going against nature, means losing certainties in the path of our existence, since socialising is an integral part of our life (not to say that it is our very life), and allows us to maintain an emotional and mental balance.

With our companies and our large team of employees, we seek to give and be a global sanitation-technical answer to the worldwide problem of the spread of viruses and bacteria. Tackling and solving these problems with our method, which applies a continuous sanitization technology dedicated to the individual area to be treated, can guarantee the salvation not only of human beings, but also of the world economy, which has not yet paid the price for the COVID-2 effect, but the bill will come in the coming months and should emergencies or lock-downs similar to those that have just occurred reoccur, either we will have prepared ourselves with a continuous process method of sanitising closed environments (without harming human health with aggressive chemicals with a carcinogenic effect in the medium and long term), or else we will be faced with an unprecedented humanitarian drama.

Engineer Gianni Reginato
Indoor Air Sanification Expert



Some of the major hospital centres using RCI technology:

European Hospital Centres

- Ruber International Clinic, Madrid, Spain
- FREMAP Hospital, Madrid, Spain
- FREMAP Hospital, Siviglia, Spain
- Public hospital in Pontevedra, Sergas, Spain
- Clinique des Murins, Orleans, France
- Clinique de l'Archette, Olivet, France
- Clinique des Buissonnets, Olivet, France
- La Timone Hospital, Marseille, France
- Clevedon Hospital, Somerset, United Kingdom
- Cheshire NHS Treatment Centre, Liverpool, United Kingdom

American hospital centres

- Jacobi Medical Center, New York, USA
- Crossroads Community Hospital, Illinois, USA
- Laughlin Memorial Hospital, Tennessee, USA
- Hospital pediatrico CNY, New York, USA
- Mayo Clinic, Florida, USA
- Siriano libanese Hospital, Sao Paulo, Brasile
- Ospedale Sao Luiz, Sao Paulo, Brasile
- Albert Einstein Hospital, Sao Paulo, Brasile
- Charity Hospital Portoghese, Sao Paulo, Brasile
- Reale Ospedale Portuguê, Recife, Brasile
- Unimed Sao Roque, Sao Paulo, Brasile

YOUSAN LEADER - sanitising thermoventilators



YOUSAN LEADER 15/25



YOUSAN LEADER 35/45



YOUSAN LEADER 70

The **YOUSAN LEADER** units, in addition to sanitization, are designed for heating and air conditioning, the **YOUSAN LEADER** like the basic **YOUSAN** model has an electrical protection rating of IP 44, IP 54 and a filter < 10 microns for purification from suspended dust in addition to the sanitizations system, it is available in 10 models with different flow rates and air throw speeds.

The careful design allows it to be used in prestigious environments and in any industrial, commercial and tertiary environment.

YOUSAN SMART - low temperature sanitising thermo-ventilator

(Standard color)



YOUSAN SMART H
(heating)



YOUSAN SMART C
(conditioning)

The **YOUSAN SMART** units, stylized with an exclusive, pleasing design, in addition to sanitation, are designed for low-temperature supply for heating and air-conditioning, easily connected to the external condensation unit and/or chiller, ideal for heating and air-conditioning all environments, such as tertiary industries, commercial, sports centers and all public environments with an influx of people.

Ventilation is performed by a centrifugal fan with variable speed and flow rate.

YOUSAN SMART is specifically designed for use in combination with HEAT PUMP and condensing boilers, with hot water at low temperature for increased average seasonal efficiency.

YOUSAN - Some applications



HYBRID SYSTEMS



INDUSTRIAL OVENS



LITHIUM BROMIDE ABSORPTION CHILLER



ENERGY RECUPERATOR



SPLIT SYSTEMS



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