

Mistral

Compact, low capacity
ultrasonic humidifier



Compact ultrasonic technology

Adiabatic humidification

Adiabatic humidification is when water is atomised through friction with the air: the water is reduced to tiny particles which go from the solid state to the gaseous state using the heat in the air, humidifying and cooling it at the same time. As no heat sources are required, unlike isothermal humidification where water is heated to boiling point to produce steam, adiabatic humidification is highly energy efficient.

Ultrasonic technology

Mistral adiabatic humidifiers use advanced ultrasonic technology, so humidification is energy efficient and silent. They atomise water (which is automatically loaded into the tank) then introduce it into the environment through air flow emitted by a built-in fan. A high-frequency signal (1.7 MHz) is transmitted to ceramic transducers immersed in the tank which vibrate, forming water particles that are so small they are easily absorbed by the surrounding air.



Minimum footprint

Compact units for small spaces which produce up to 1 kg/h



Germ-free

Uses demineralised water, the automatic draining system stops bacteria proliferating



Safety

Self-extinguishing material, protection against water leakage and absence of inlet water



Optimisation

Constant, efficient production and master/slave function for multiple units

Built-in control

Mistral humidifiers can be controlled by the built-in electronic board using an ON/OFF signal (from a humidistat or a remote contact) or by connecting probes with the possibility of setting proportional control.

LED interface with capacitive touch keys

The interface on the front of the humidifier has two functions: it displays operating status and any alarms and can be used to configure the parameters.

Connectivity

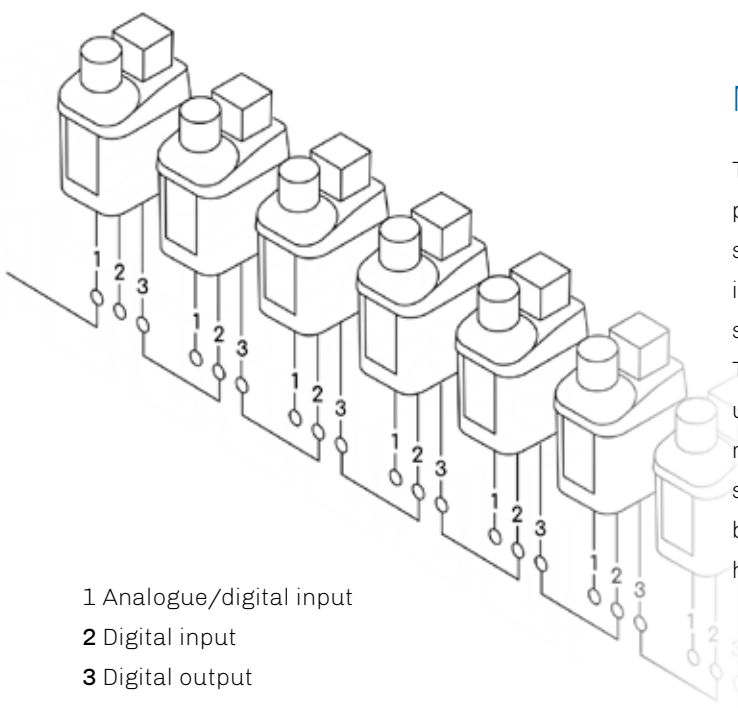
Mistral humidifiers are equipped with an RS-485 slave communications port which allows configuration from a PC using MODBUS RTU commands and addresses, as well as remote control and supervision. There is also a model with Wi-Fi connectivity and MODBUS TCP protocol for IoT uses. Connectivity can be added to the basic model using an optional plug-in module on the RS-485 port (EVIF25SWX).



Master/slave function

This function allows users to expand production capacity or centrally control several humidifiers using a single humidity probe. With one simplified connection, it is possible to operate a large number of units at the same time and in the same mode.

The optional remote user interface (EVJ) allows users to connect multiple humidifiers in an advanced master/slave configuration; the humidifiers work sequentially on a rotational basis, so maintenance can be performed on individual units without interrupting humidification.



- 1 Analogue/digital input
- 2 Digital input
- 3 Digital output

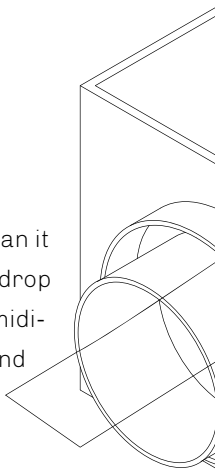


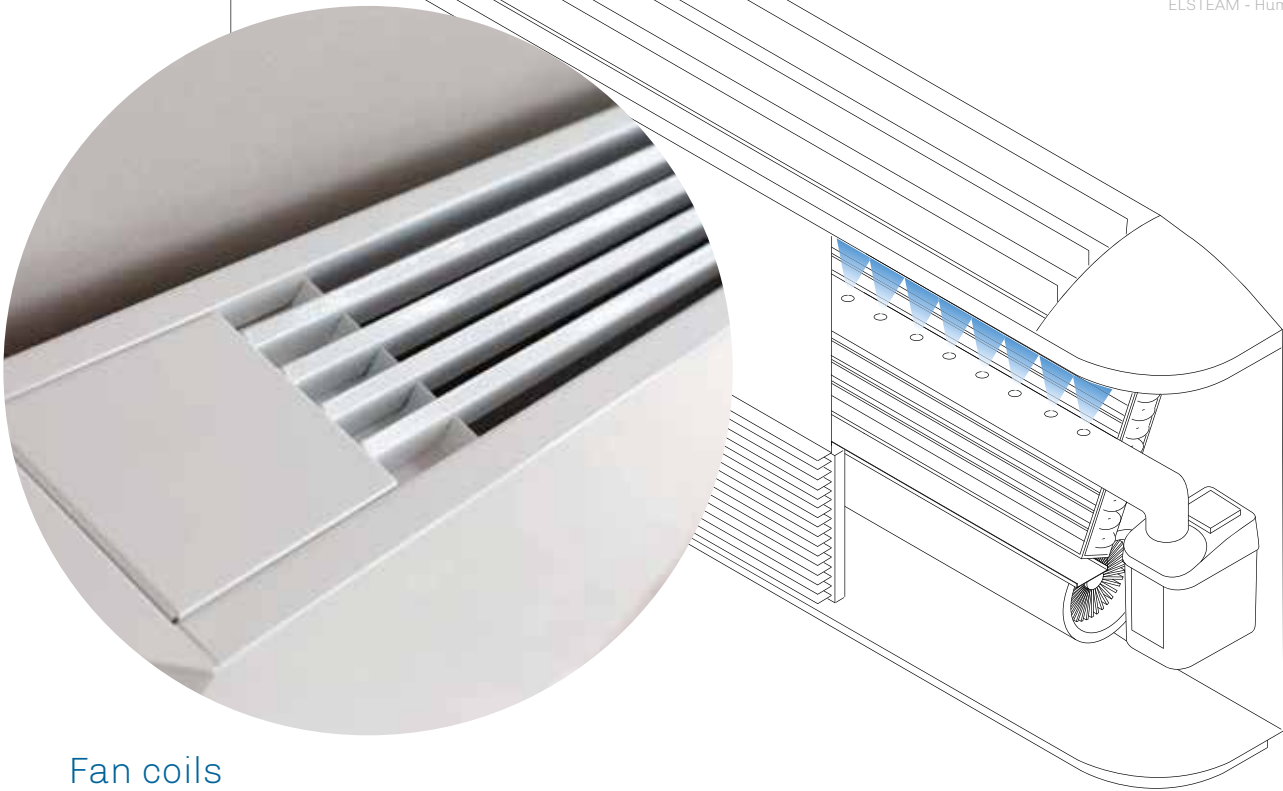
Controlling and managing humidity indoors

Air renewal units

Comfort in our homes depends largely on creating the ideal climate, which science has established as being 20-24° C for temperature and 40-60 % for relative humidity. In winter in particular, when buildings are heated, the level of relative humidity can fall drastically. Skin and mucous membranes can become dry, allergies and respiratory tract infections are more likely to develop and unwanted microorganisms like bacteria and viruses can proliferate. Dry air can also

affect our perception of the temperature (lower than it really is in winter), make us feel tired and cause a drop in concentration. Maintaining the right level of humidity is therefore crucial to ensure personal health and wellbeing, in the workplace too.

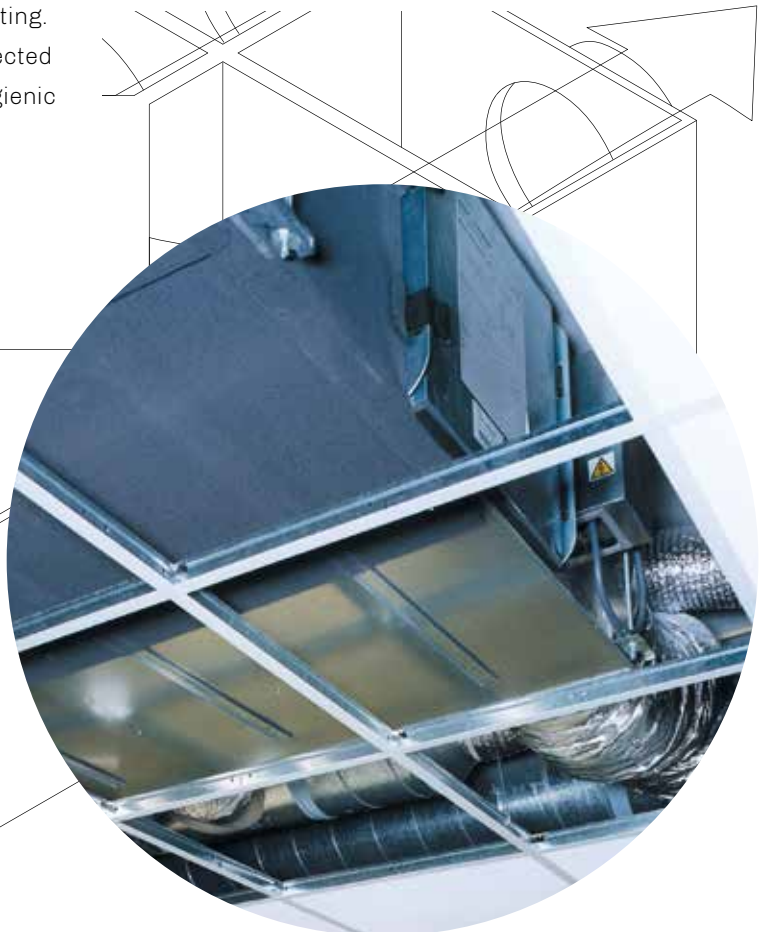
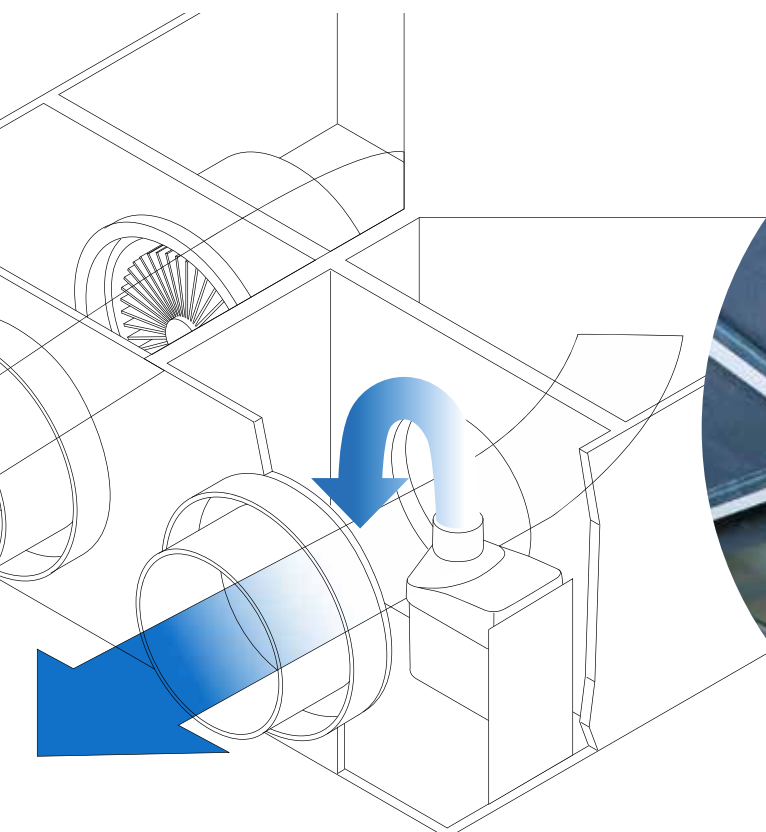




Fan coils

When a room is heated with a convection heating system, where heat is transferred by the movement of liquids (natural or forced), the air can often become very dry and filled with suspended dust particles. To ensure maximum comfort, it is advisable to install a humidity control system alongside the heating. Compact ultrasonic humidifiers are often connected to fan coils as they are easy to maintain and hygienic

and provide considerable energy savings: piezoelectric transducers vibrate, producing an ultra-fine mist which is quickly absorbed in the air, humidifying it without having to heat the water.





Controlling and managing humidity in food preservation

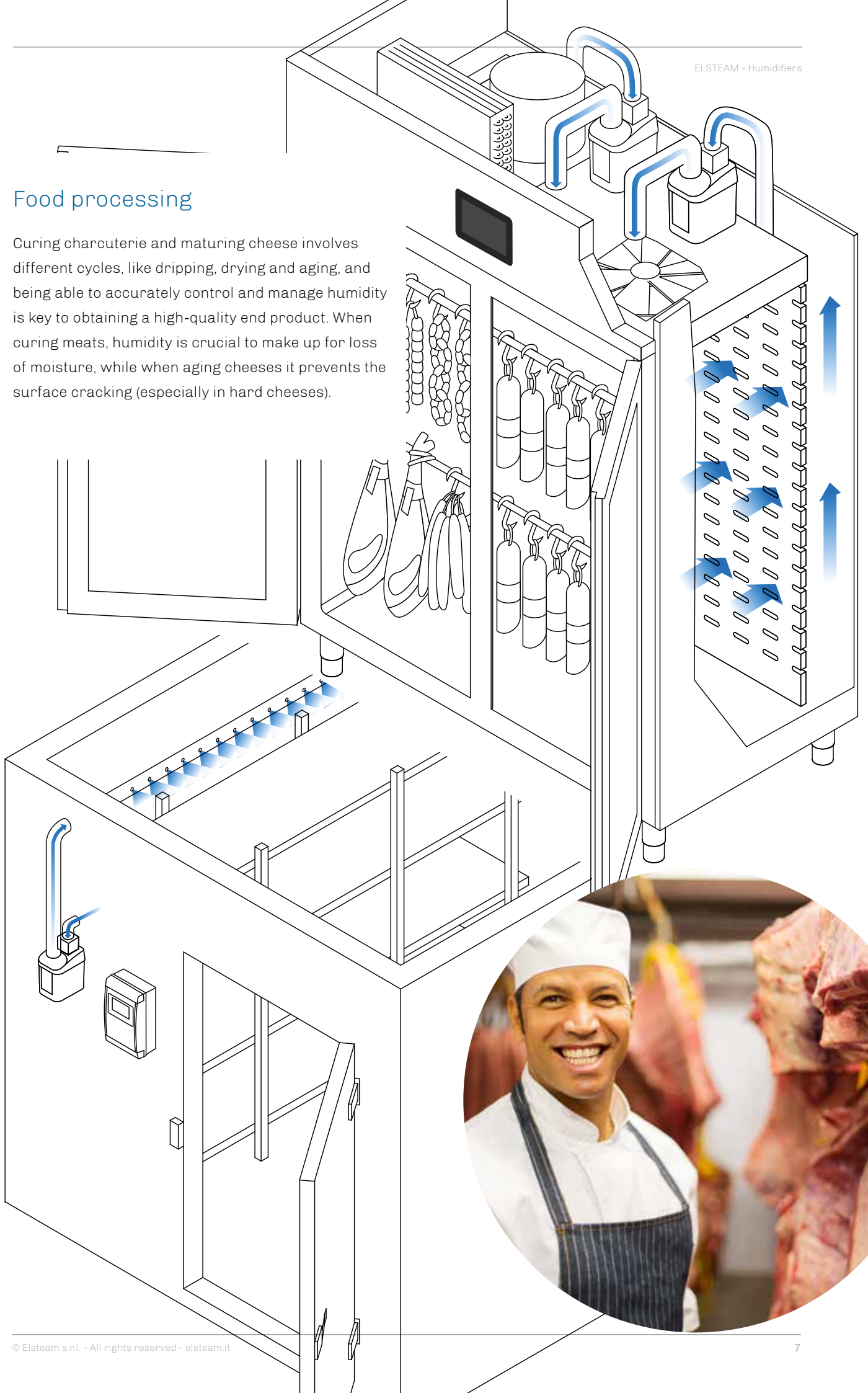
Non-refrigerated display counters and cases for fresh produce

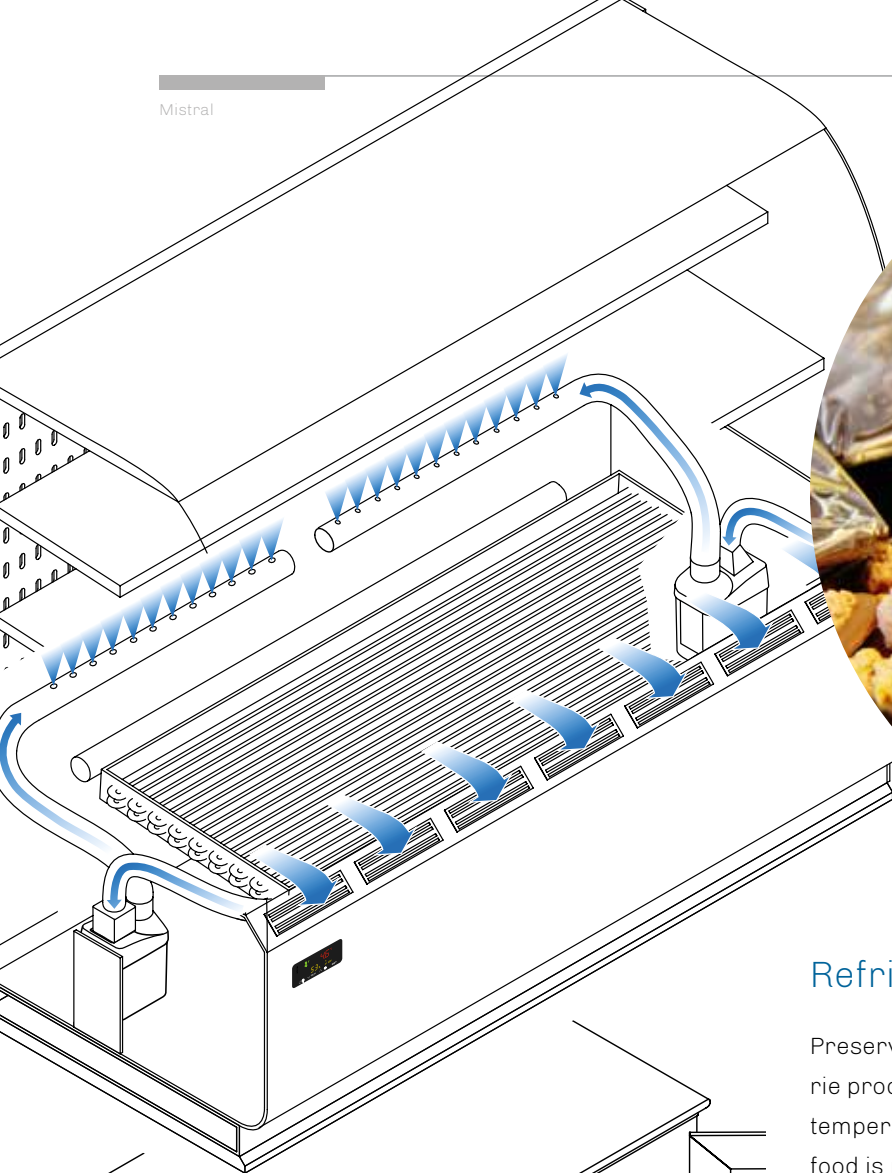
Mistral humidifiers are ideal for humidity control when fresh produce is displayed in non-refrigerated counters and cases, like in outdoor markets: adiabatic humidification keeps produce cooler because the water droplets evaporate, drawing heat from the surrounding air. When food like fruit and vegetables is humidified, it is more saleable because it is healthier, fresher and more visually appealing.



Food processing

Curing charcuterie and maturing cheese involves different cycles, like dripping, drying and aging, and being able to accurately control and manage humidity is key to obtaining a high-quality end product. When curing meats, humidity is crucial to make up for loss of moisture, while when aging cheeses it prevents the surface cracking (especially in hard cheeses).



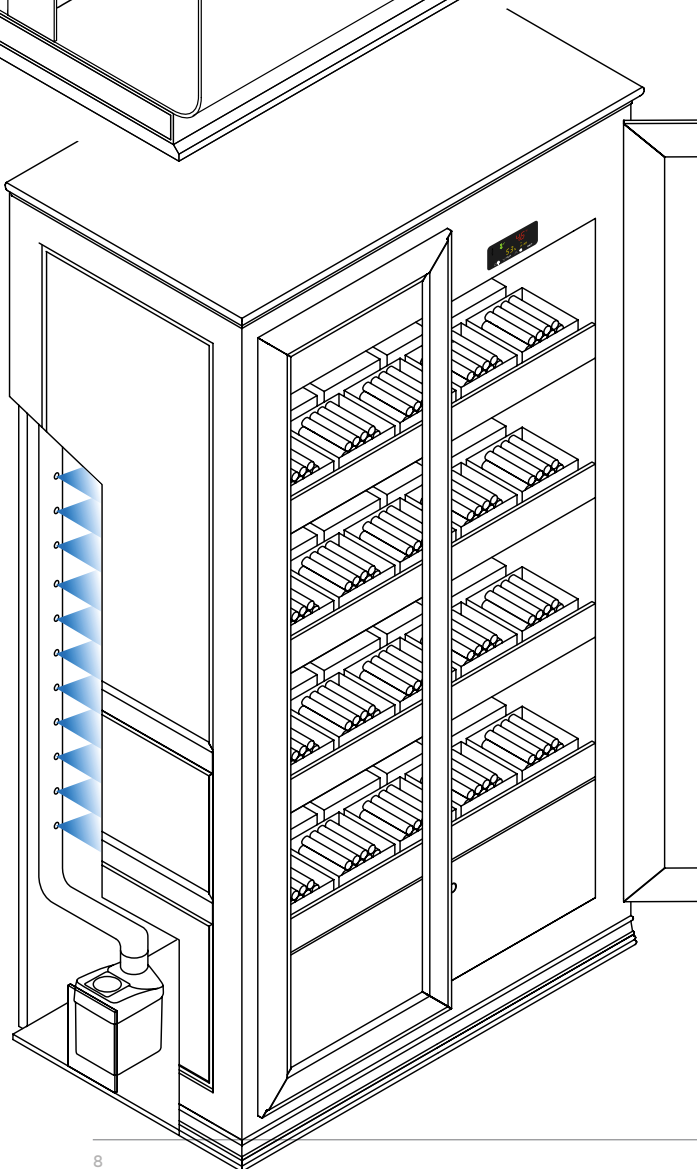


Refrigerated units and cold rooms

Preservation of fresh, processed, praline and patisserie products depends not only on maintaining the right temperature but also the right humidity level. When food is preserved in a refrigerated atmosphere, water tends to condense on the evaporating coils. An external source of humidity is therefore needed to prevent dehydration and loss of weight (on average 2 - 6% almost immediately) and keep products fresh, healthy and looking attractive.

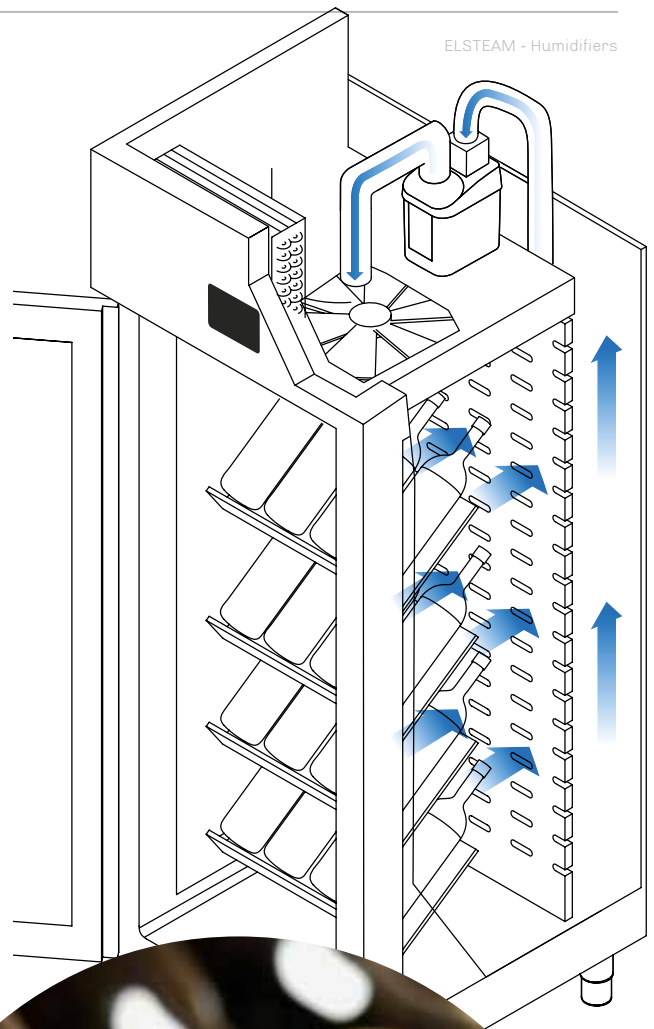
Cigar humidors and display cases

Cigars are made of whole tobacco leaves which are air cured to dry them and then rolled. The leaves need to be oily and moist because when the cigar is lit, the relative humidity evaporates, releasing all the aromatic qualities of the blend. Maintaining the correct level of relative humidity (around 70%) is therefore essential to ensure the cigars retain their flavour and the leaves do not crack due to excessive drying but also to prevent mould forming.



Wine cellars and bottle coolers

Aging wine is a delicate operation which calls for carefully controlled temperature and humidity levels, especially when aging in wooden barrels. When the air is too dry, the staves on the barrel can become dry and the wine can evaporate excessively, causing loss of product and forcing producers to top up the barrels. During aging or conservation in the bottle, if there is not enough humidity, the cork can shrink and the wine oxidises.



Accessories

Remote viewing and complete diagnostics

An interface can be connected to the humidifier to view machine status, events in progress and probe readings. Users can choose between EV3, with a double-line LED display and EVJ, with an LCD colour graphic display and advanced functions like master/slave sequential and rotating management when controlling multiple units.



Less maintenance required when demineralised water is used

With EHR0012, our water demineralisation system which uses reverse osmosis to produce 12 litres an hour, you can protect your humidifier from limescale, impurities and bacterial proliferation and cut costs, as using drinking water can require fairly regular maintenance depending on its conductivity and hardness.

Accurate readings with EVH probes

- EVHTP520: temperature/humidity probe with range 5- 95% R.H. and -10 - 70 °C
- EVHP523: humidity transducer 4... 20 mA with range 5- 95% R.H.



Direct moisture where you want with our distribution and venting kits

- UHFK02: linear steam distributor kit with different direction piping bends
- EHUK009: connection for external forced ventilation (venting kit)

Technical data

Code	EHUC001M200	EHUC001M2W0
FEATURES		
Production capacity	1.0 kg/h	1.0 kg/h
Power consumption	110 W	110 W
Power supply	100-230VAC 50/60Hz Power Switching	100-230VAC 50/60Hz Power Switching
Inlet water quality	Demineralised/drinking water	Demineralised/drinking water
Inlet water conductivity	0 - 1250 $\mu\text{S}\cdot\text{cm}$	0 - 1250 $\mu\text{S}\cdot\text{cm}$
Inlet water hardness	0 - 50 °f	0 - 50 °f
Inlet water pressure	0,02...1 MPa / 0,2...10 bar	0,02...1 MPa / 0,2...10 bar
Inlet water connection	John Guest 8 mm	John Guest 8 mm
Water drain external dimensions	11 mm	11 mm
Outlet mist external dimension	50 mm	50 mm
Dimensions	107.4 x 262.75 x 148 mm	107.4 x 262.75 x 148 mm
Weight	1.7 kg	1.7 kg
Degree of protection	IP20	IP20
REGULATION		
Type of controller	built-in	built-in
Command signal	ON/OFF, 0...10 V or 4...20 mA	ON/OFF, 0...10 V or 4...20 mA
COMMUNICATIONS PORTS		
RS-485 MODBUS RTU serial port	1	1
CONNECTIVITY		
Wi-Fi	optional with EVIF25SWX external module	built-in

**For more accessories and enquiries about customisation, contact the Elsteam sales network (sales@elsteam.it)*

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