

# microniser

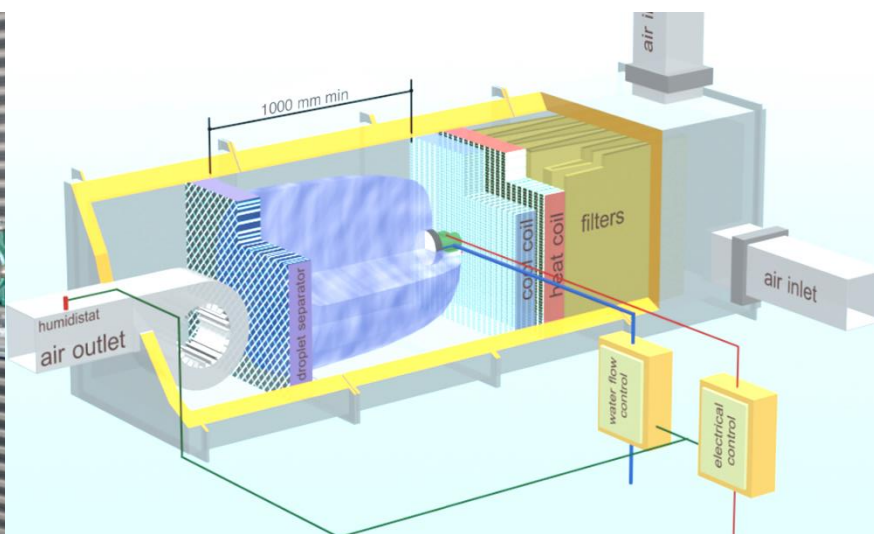
## HVAC - Humidification of office and industrial buildings

### I. Definition: Rotary spray humidifier without recycling

The Microniser atomiser consists of a cylindrical mesh cage mounted directly on the axis of the motor. Water is sprayed into fine droplets through the cage rotating at high speed. Mixed with the air to be humidified, these fine particles pass from the liquid state (water) to the gaseous state (vapor) by drawing the energy necessary for evaporation in the treated air.

### II. Application areas

Microniser rotary humidifiers are used for industrial and office applications as well as for healthcare establishments or laboratories. In these latter cases, the hygienic advantage of Microniser humidifiers without water recycling can be combined with a preliminary treatment of the water to guarantee its purity.



### III. Rational use of energy

Microniser is intended for air treatment units from 10,000 m<sup>3</sup>/h. The Microniser is offered for sale or Full Service and provides substantial water and energy savings.

Without stagnant water or loop circulating water, this solution prevents bacterial development. The Microniser system has a reduced environmental impact recognized by BREEAM.

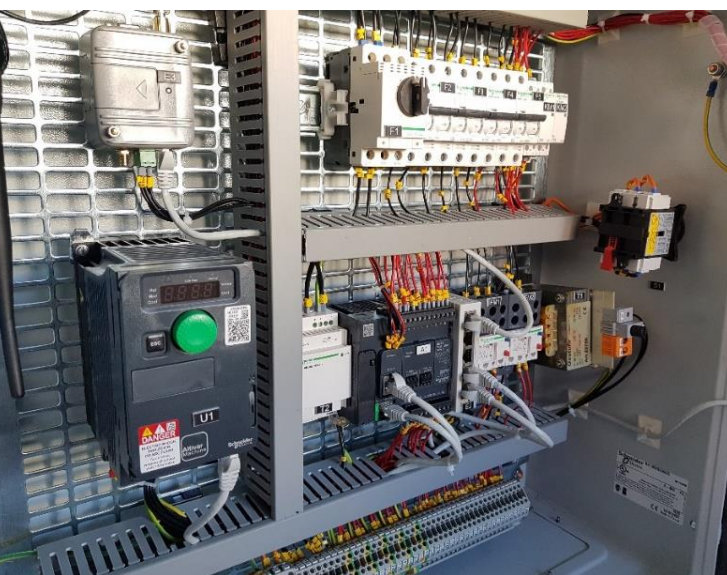
### IV. Regulation : Autonomous or managed by BMS

Steam production is set between 0% and 100% by controlling the flow of water spray. It is possible to increase the air humidity directly up to the set value. A humidity sensor, placed at the level of the pulsion duct, allows this setpoint to be followed precisely. The response time is very short and simply depends on the length of the pipe to the atomiser.

The setpoint can be determined internally or be supplied by an external 0-10V signal.

### V. Efficiency

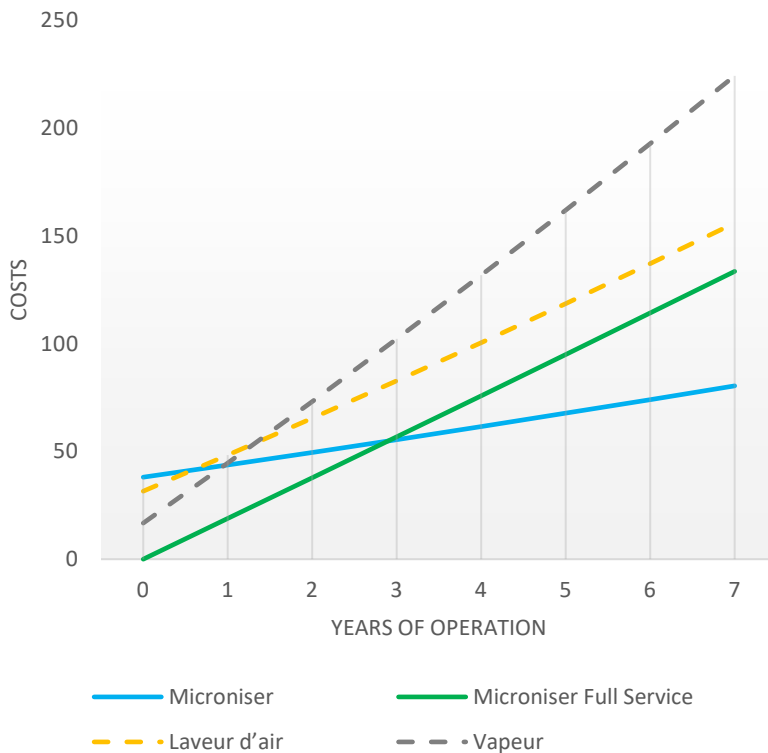
As humidifiers without recycling are regulated independently of the dew point, their efficiency is determined by comparing the quantities of water consumed and evaporated. The main parameters influencing the efficiency are: the free humidification distance, the humidity setpoint, the water flow rate, the fineness and homogeneity of the droplets, the distribution of the drops in the air flow, and the drop separator.



## VI. Financial comparison: advantage to Microniser

- Investment: Microniser with ROI <1 year or Full Service without investment.
- Operation: Microniser = low water and energy consumption and low maintenance.

### Investment and operating costs



		Steam	Washer	Microniser	Microniser Full-Service
<b>Investment<sup>1</sup></b>	€	++	++	+++	0
<b>Operation</b>	€/year	++++	++	+	++

Full Service = installation + maintenance + repair + monitoring



Saving water and energy



Zero investment



Reducing the carbon footprint



Monitoring

## VII. Water supply

- Demineralized water: recommended to simplify the maintenance of the air handling unit
- Untreated drinking water with maintenance planned accordingly: the minerals present in the water will be dispersed on the walls and the drop separator.

## VIII. Humidification box

The humidification section must be waterproof and airtight. It will be equipped with: humidifiers; a drop separator; access allowing assembly and maintenance; an inspection window and IP65 lighting; a sloping bottom to a low point fitted with a siphon allowing the rapid and complete evacuation of excess water. Unless otherwise specified, the free humidification distance is ideally between 1m and 1.5m.

<sup>1</sup> Equipment + installation; reverse osmosis unit + new humidification box + drop separators included for Microniser but not for steam.

## IX. Technical characteristics

<b>Number of atomisers</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
Maximum steam flow in HVAC	kg/h	75	150	225	300	375	450
Maximum steam flow specific application	kg/h	150	300	450	600	750	900
Electric power	kW	0,3	0,6	0,9	1,2	1,5	1,8
<b>Humidification box</b>							
Standard air flox	m <sup>3</sup> /h	10000	20000	30000	40000	50000	60000
Standard section (H x W)	m <sup>2</sup>	1,0	2,0	3,0	4,0	5,0	6,0
Standard lenght (L)	m	1,5	1,5	1,5	1,5	1,5	1,5
Air speed	m/s	0,5 - 5					
<b>General power supply</b>							
Single-phase voltage	V	230					
General circuit breaker	A	16	20	32	32	32	32
<b>General hydraulic supply</b>							
Water intake	Pouce BSP	1/2"					
Inlet pressure (tap water)	bar	1 - 5					
operating pressure (neither pump or compressor)	bar	1 - 2					
Water quality		untreated drinking water or demineralised water					
<b>Regulation</b>							
Relative humidity setpoint	% HR	0-10 V					
Absolute humidity setpoint	0-20 g/kg	0-10 V					
Precision	%	+3%					
<b>Atomiser VG2000 LS</b>							
Design and manufacturing		Made in Belgium					
Patent		Microniser® - Brevet international					
Atomiser dimensions (H x W x L)	mm <sup>3</sup>	145 mm x 210 mm x 110 mm					
Atomiser supply by variator		3Φ / 230 V / 1A / 193Hz / 300W / 11800 rpm					
Weight of atomiser	kg	2,9					
<b>Other characteristics</b>							
Conformity		CE; EN60204-1; EN13849-1; Belgaqua; ISO9001; VCA					
Interface		touch screen + BMS + terminal block					
Tolerated ambient temperature	°C	1 - 50					
Average drop diameter	µm	20 - 30					

