

Humidification and Cooling



Micron rotary atomisers with brushless motor technology offer many benefits for humidification and adiabatic cooling.

Micron's rotary atomiser technology allows for production of precisely controlled very small droplet sizes around 40-50 μ m VMD (Volume Median Diameter) allowing for rapid absorption of spray mist into the air without fall out and damp patches from larger spray droplets. Brushless motor technology allows for very long service life and continuous operation for extended periods with simple installation and low maintenance. Energy costs are also very low compared with comparable systems using high-pressure, air compressors or steam. Rotary atomisers are also not prone to blockage or nozzle wear as occurs with high pressure systems and small orifices.

Single Micronair direct drive atomiser units can be installed into air ducts or provided with an air circulator unit for use indoor or outside. Micron also offers a very small compact unit, the Micromiser, for use indoor, outdoor or mounted on mobile units operating from a DC power source.

Application	Typical Optimum RH		
Paper Production	~55%		
Offices	40-60%		
Packaging	40-55%		
Warehousing	Product dependent		
Clean rooms	40-50%		
Printing	45-55%		
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100 litres of water evaporating in one hour will provide approximately 63 kWh adiabatic cooling. Therefore, each Micronair Direct Drive Atomiser (operating at its maximum capacity of 180 l/h) can provide up to 113.4 kWh of adiabatic cooling for an energy input of as little as 0.3kWh.

Micron rotary atomisers are suitable for many different humidification and cooling applications including commercial HVAC systems and for manufacturing processes such as textile and paper production.

Micron rotary atomisers systems have also been used in refrigerated container units, cold rooms as well as glass house and polytunnels to control humidity and reduce air temperatures.

Micron Sprayers Ltd can provide technical support to assist system designers in product specification and optimisation for a wide range of installations suitable for use of rotary atomiser technology.

Maximum water content of air at atmospheric pressure



Droplet size from Micron rotary atomiser







	Temperature 20°C, ∆T 2.2°C and RH 80%		Temperature 30°C, Δ T 7.7°C and RH 50%	
Initial Droplet Size (μ m)	Lifetime to extinction (s)	Fall distance (m)	Lifetime to extinction (s)	Fall distance (m)
25	3.5	0.03	1	0.01
50	14	0.5	4	0.15
100	57	8.5	16	2.4
200	227	136.4	65	39



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