CAREL

solutions for evaporative cooling and humidifying

atomisers - evaporative cooling

optiMist

evaporative cooling and humidifying

optiMist is an evaporative cooler and humidifier that atomises water in fine droplets which, while spontaneously evaporating, remove heat from the humidified and cooled air. It uses a vane pump to pressurise the water, subsequently atomising it through special nozzles.

optiMist is a complete system that includes evaporative cooling and humidifying in a single solution which can be used to treat the air in an AHU (air handling unit) to both humidify the output air (direct evaporative cooling) and to indirectly cool the renewal air, for example with a cross-flow recovery unit, in order to increase the energy efficiency of the AHU.

Energy Savings

The rapid development of evaporative cooling in HVAC applications is certainly due to its extremely low energy impact. If we compare the energy cost for Evaporative Cooling with that of other typical air transformation methods (for example air cooling using chillers), we note that the energy savings is significant. Adiabatic cooling is also much more efficient energy-wise when compared to steam emission. The only energy required is the pressurisation of the air, which is sent to the atomising nozzles by a pump. Consumption is about 4...8 W for every l/h of nebulised water.

"Green" AHU!
By combining evaporative cooling and adiabatic humidifying, optiMist ensures overall energy savings in the air handling unit.

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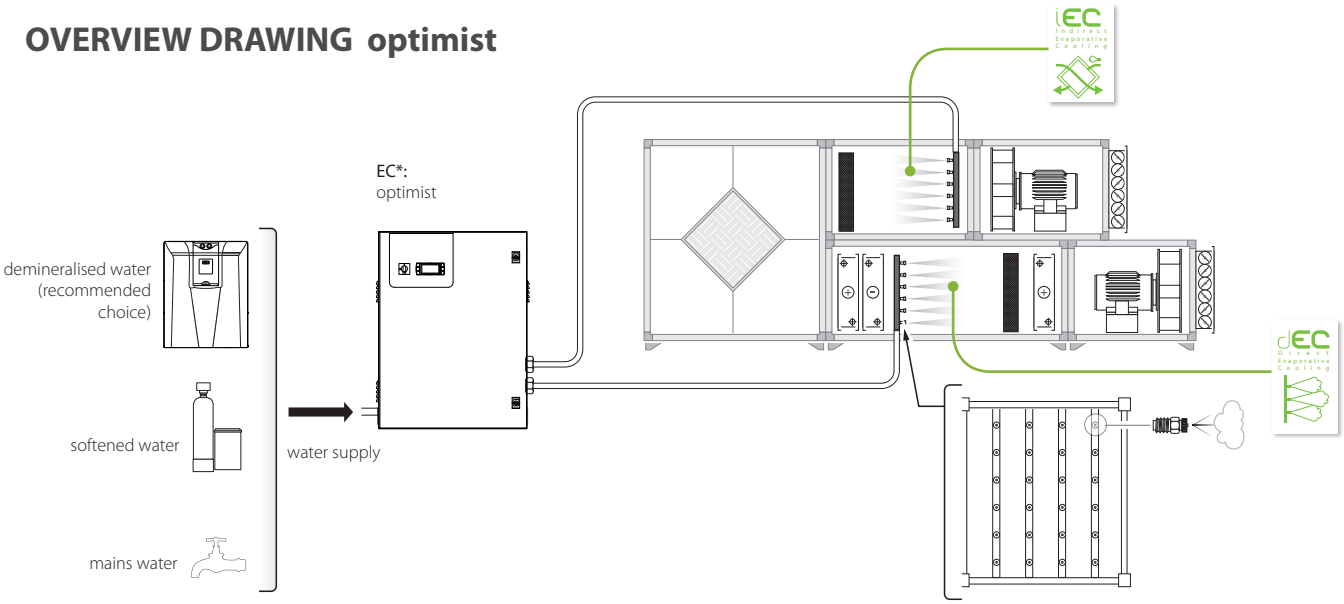
Technical characteristics

Characteristics	EC005*	EC010*	EC020*	EC040*	EC080*	EC100*
General						
Power supply	EC*0= 230 V, single phase, 50 Hz EC*U= 230 V, single phase, 60 Hz					
Electrical consumption	0.375 kW				0.75 kW	
Electric current	1.6 A	1.6 A	1.7 A	1.7 A	3.0 A	3.2 A
Operating conditions	5…40 °C (34…104 °F) <80% RH non condensing					
Water load						
maximum flow rate	50	100	200	400	800	1000
pressure	0.2…0.7 mPa					
connections	EC*0= G3/4" f EC*U= NPT 3/4" f					
Water drain						
connection	stainless steel pipe G3/4f interior, Ø exterior ~35 mm/ 1.18 inch.					

OVERVIEW DRAWING optimist



Energy savings

optiMist ensures an overall energy savings in the AHU, 68 kW every 100 l/h of evaporated water, with extremely low consumption and loss of load (30 Pa).

Precision

optiMist is able to continually and precisely modulate the production of atomised air. This allows the evaporative cooling potential to be maximized without wasting water.

Integrated solution

In a single solution, optiMist allows efficient management of direct evaporative cooling (DEC), indirect evaporative cooling (IEC) and adiabatic humidification.

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