

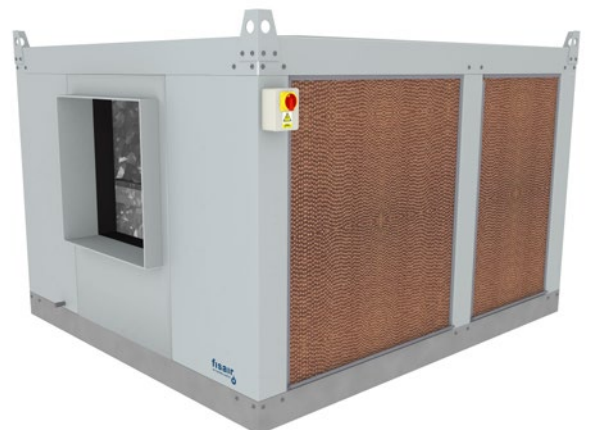


HEF5-H series

Cellular panel evaporative coolers

Horizontal air discharge (*)

(*) Another series caters for vertical air discharge.





The evaporative process in the psychrometric chart

Psychrometry

The chart below shows an example of the standard psychrometric process employed for the design of this kind of evaporative coolers:

- 1) The starting point is summer air at 34°C (dry bulb) and 21°C (wet bulb).
- 2) Air is obtained at 24°C (dry bulb) and 21°C (wet bulb).

Evaporative cooling (A-B).

The humidification achieved (x) is from 10 g/kg to 14.5 g/kg from which the evaporation performance is obtained. To this end, the 'Saturation efficiency' is defined.

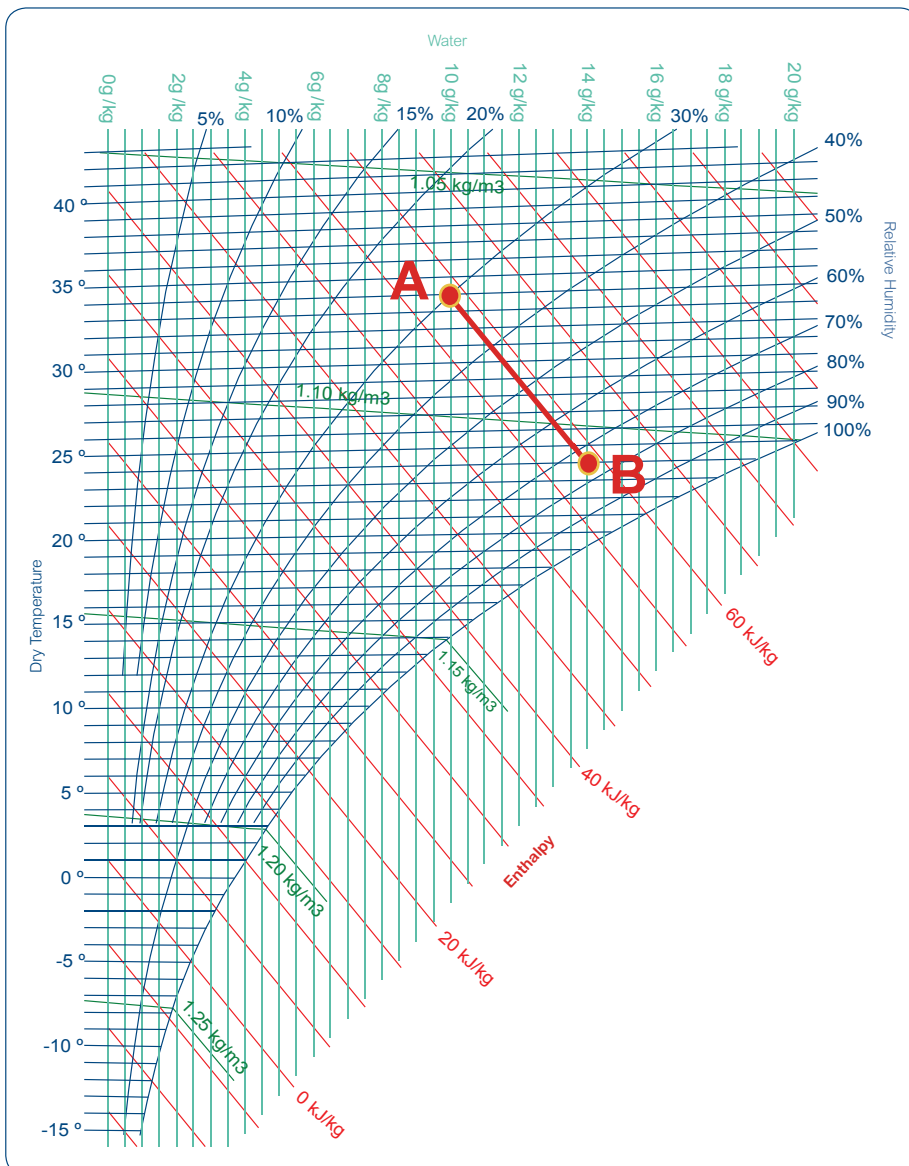
Saturation Efficiency

Defined as the ratio between the required humidification and the maximum permitted; which is expressed as the ratio of the process and humidified air dry bulb temperature difference, and the process air dry and wet bulb temperature difference.

$$+ \text{ Line A-B: } (34-24)/(34-21) = 76\%$$

Humidifier Selection

Having ascertained the psychrometric conditions and the required saturation efficiency for the cooler/humidifier, the construction specifications chart and operating data are employed to define the unit most suited to your needs with regard to the full range of options.





Specifications	Options
<p>FISAIR HEF5 contact cellular panel evaporative cooler</p> <p>Construction</p> <ul style="list-style-type: none"> • AISI-304 stainless steel water basin • Steel chassis (1) • Evaporative cassettes: Steel frame (1) and cellular panel (2) • Water supply by: (3) • Irrigation by (4) PVC pipes and flow regulation valves • Constant bleed-off integrated into flow regulation • Integrated overflow and draining • Horizontal air discharge. H models (6) 	<ul style="list-style-type: none"> (1) Galvanized steel (standard) or stainless steel (optional) (2) Cellulose panel (3) Float valve (brass or stainless steel) and optional addition of NO/NC solenoid valve (24 or 230V) (4) Water direct from the network or recirculation pump (230/400V-IIIph-50Hz supply or other) (5) Optional integration for operational management and supervision of the humidifier with a PLR MFD-TITAN to enable the obtainment of quicker, more accurate, reliable and simple operating of the humidifier (6) Lower (VI) or upper (VS) vertical air discharge (7) Possibility of disinfectant treatment by UV light

Operating data

- Airflow: "N1", m³/h (*)
- Available pressure for pipes: "N2", Pa (*)
- Saturation performance: "N3", % (*)
- Average pads inlet velocity: 1,5 m/s.
- Evaporative pad-fan ear distance: 0.75 times the turbine diameter. minimum.
- Max. Evaporated water flow: 7 l/h per 1000 m³/h rated airflow (at 38°C / 20°C dry/wet bulb).

(*) According to specific data in the table of technical data or particular specifications.

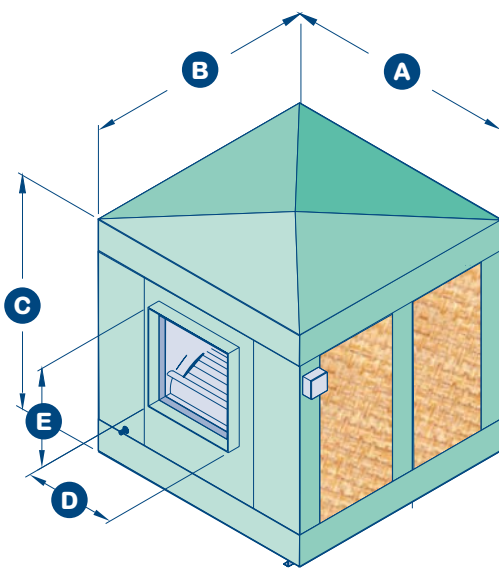


Operating features

Construction

- Self-supporting metal frame fabricated in galvanised steel plate with phosphate priming coat. Outside RAL-7035 enamel finish. Water basin Stainless steel AISI-304 (frame in AISI-304 as an option).
- Fan-motor group assembled on independent base frame with shock-adsorbers and flexible joint at the discharge. Centrifugal, double ear and forward curved plates air fan, driven by trapezoidal shaped driving-belts with personal protection. III Ph AC motor at 1500 r.p.m mounted on support-tensioning device.
- HUMI-KOOL evaporative media pad made of cellulose paper with wetting and strengthening agents, assembled into galvanised steel frames (cassettes) with handle and integrated water distribution device.
- Water feed and recirculation: Float filling valve; immersion III phase motor pump with flow regulation valve for recirculating and bleed-off water flows; PVC water pipes; integral overflows and drain steel nozzles.
- Electrical supply: Water proof IP55 connection box with terminals block and isolating switch for fan and pump motors independently. Connections to motors by protected conductor wires.

Overall dimensions and weights



Model	DIMENSIONS (mm)					Approx. Weight (Kg)	
	A	B	C	D	E	Empty	Operative
HEF-505-H	890	890	750	331	289	110	190
HEF-507-H	890	890	1000	395	341	165	245
HEF-510-H	1190	1190	1000	474	404	245	385
HEF-515-H	1490	1490	1260	557	478	280	500
HEF-520-H	1610	1610	1310	630	630	320	580
HEF-525-H	1610	1910	1470	692	695	360	660
HEF-530-H	1610	1910	1605	794	797	480	780
HEF-545-H	2205	2205	1850	870	936	595	1060

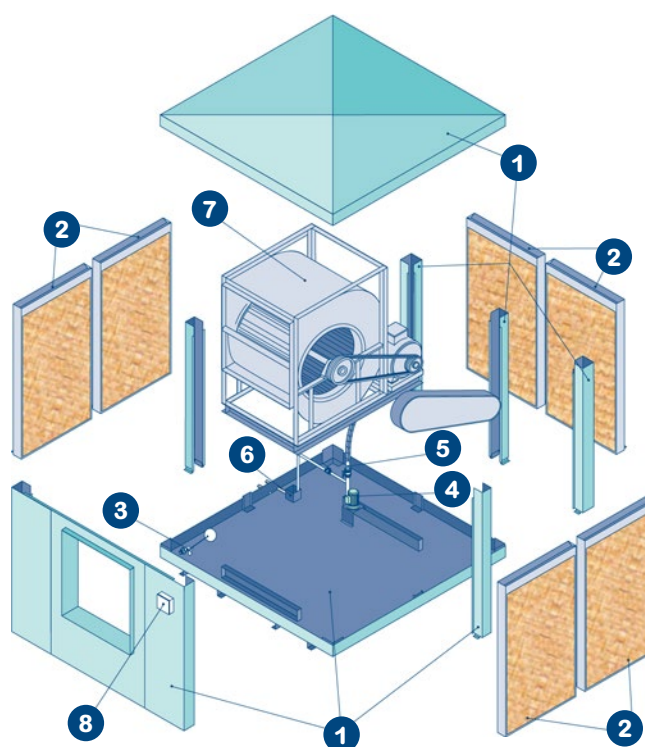
Technical specifications, horizontal discharge

Model	Nominal Air Flow (m ³ /h) (1)	Available Pressure (Pa) (1)	Evaporative Cross Area (m ²)	Saturation Performance (%) (2)	Cooling Power (Kcal/h) (3)
HEF-505-H	5.000	150	0.9	74	4.300
HEF-507-H	7.500	140	1.35	75	6.000
HEF-510-H	10.000	170	2.02	76	8.700
HEF-515-H	15.000	150	3.6	77	13.000
HEF-520-H	20.000	150	3.6	74	17.300
HEF-525-H	25.000	180	5.04	75	21.600
HEF-530-H	30.000	160	5.59	74	26.000
HEF-545-H	45.000	160	8.64	75	38.900

- (1) The data set of airflows, the available external pressure and the motor fan power can be roughly changed in a +/- 20% if needed to meet every single installation specification.
- (2) Saturation efficiency: Actual air cooling percentage over the maximum evaporative cooling process, which is the difference between the dry and wet bulb temperatures the of inlet air.
- (3) Figures based on the installation airflow are projected with a 3°C gain in conditioned rooms.

The basic structure of our units includes the following components

1. Frame-basin set
2. Evaporative cassettes
3. Filling float valve
4. Irrigation pump
5. Irrigation distribution pipes
6. Overflow / constant bleed-off
7. Motor-fan set
8. Electricity connection box





HEF5-H series

Cellular panel
evaporative coolers

