MB-Z Portable Dehumidifiers

CLEMCO

Performance, Quality, Reliability, Economy

Often dehumidification is confused with heating. Heating reduces relative humidity, enabling air to hold more water before saturation — but no water is removed. Dehumidification reduces the actual water content of the air.

Advantages:

- ✔ *Reduces relative humidity for blasting and coating*
- ✔ *Can be used indoors or outdoors*
- ✔ *Promotes surface drying prior to coating*

Features:

- ✔ *Adjustable dehumidifying capacity*
- ✔ *Galvanized to resist corrosion and prolong wear-life*
- ✔ *Robust, self-supporting steel frame*
- ✔ *Lifting eyes for portability*
- ✔ *Large air inlet grills and filters*
- ✔ *Energy-saving heat recovery*

The Process:

Clemco MB-Z dehumidifiers work in a continuous process with two air streams, process air and regeneration air. Process air is dried in the rotor and heated by approximately 68° F (20° C). The regeneration air stream is heated in an electrical heating unit to over 212° F (100°C) before it passes through the rotor, removing moisture from the metal silicate rotor.

Letting the regeneration air pass through the rotor before it enters the heating unit preheats it and saves 25% of regeneration energy when compared to sorption dehumidifiers without heat recovery. Dry air is heated 41° F (5° C) less than sorption dehumidifiers without a purge section as the rotor is cooled in the same process.

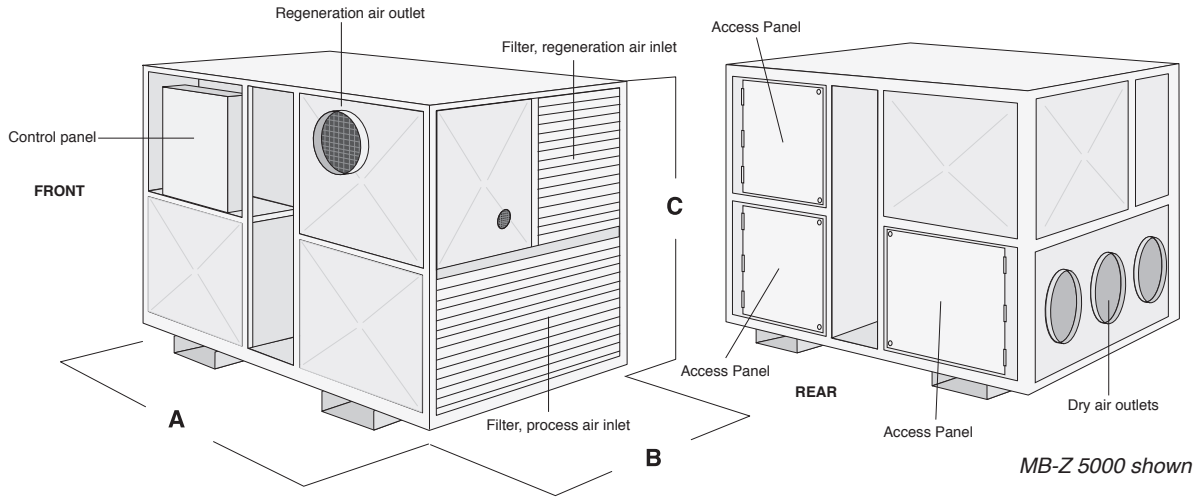
Why dehumidify?

When abrasive blasting in humid environments, blasted surfaces are vulnerable to atmospheric corrosion. Atmospheric corrosion of metals is an electrolytic reaction to excess humidity in the air. Abrasive blasting should never be done nor coatings applied, unless the surface temperature of the material being blast cleaned or painted is a minimum of 5° F above dew point (the temperature at which moisture will condense on the surface). Surface temperatures must be maintained during the critical time between blasting and coating application and during the curing period of coatings.

Dehumidification reduces the water (electrolyte) content of the air, keeping the relative humidity low, allowing blasting and coating under adverse weather conditions. Using Clemco MB-Z dehumidifiers can save time and money when blasting and coating metallic and concrete surfaces by keeping surfaces dry.

SPECIFICATIONS

Models (USA)	Process air vol. cfm *(m³/h)*	Regen. air vol. (cfm)	Capacity (lbs/h water)	Available pressure	Regen. air heat cap. (kw)	Regen. air fan motor (hp)	Process air motor (hp)	Dry air outlet dia. in.	L (in.) A	W (in.) B	H (in.) C	Wt (lbs)
MB-Z 3000	3,000 *(5,000)*	1,200	72	4"wg	45	4	5	2" x 12"	94"	66"	74"	2,100
MB-Z 5000	5,000 *(8,000)*	1,600	120	4"wg	70	5	7.5	3"x 12"	94"	66"	74"	2,200
MB-Z 7500	7,500 *(12,500)*	2,800	190	4"wg	108	7.5	15	5" x 12"	94"	76"	96"	2,750



MB-Z 5000 shown

Electrical Specifications

MODEL	Voltage Requirement	Electrical Phase	Hz	Process Air Motor, Full Load Current	Regeneration Air Motor, Full Load Current
MB-Z 3000	480v	3	60	8.7 Amp	6 Amp
MB-Z 5000	480v	3	60	11.8 Amp	8.7Amp
MB-Z 7500	480v	3	60	20.4 Amp	11 Amp

Model Selection

The determining factor for identifying dehumidification requirements is the dew point temperature, the temperature at which air can no longer hold the water vapor it contains causing the vapor to condense into liquid. The dew point is always lower than (or equal to) the temperature of the air. The surface temperature must be at least 41° F (5°C) higher than the dew point temperature.

Dehumidifier capacity is determined by two factors: The size of the space that needs to be dehumidified and the conditions that exist in the space before dehumidification. Below is a quick calculation for determining which MB-Z model is best suited for specific applications:

desired humidity ÷ relative humidity **x** space to be dehumidified = CFM required

20% desired relative humidity divided by 80% existing relative humidity times the space to be dehumidified: 30,000 cubic feet.

20 ÷ 80 = .25 **x** 30,000 = 7,500 CFM Optimal model: MB-Z 7500

ISO 9001 certified. Clemco is committed to continuous product improvement. Specifications are subject to change without notice.