Breezair
NUMBER ONE IN NATURAL COOLING

TBA Series

World-leading natural cooling technology

The only viable solution for providing a comfortable working environment while delivering huge savings on running costs

SEELEY INTERNATIONAL

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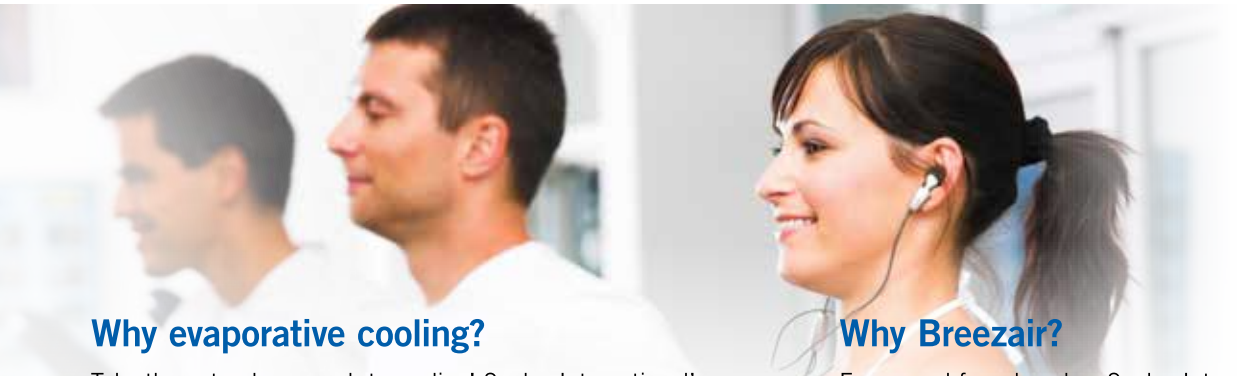
Why is Breezair unique?



Why evaporative cooling?

Take the natural approach to cooling! Seeley International's Breezair range of evaporative coolers delivers lots of cool, 100% fresh air, at much lower costs than refrigerated cooling methods.

Evaporative cooling is fast becoming the only viable option for cooling large areas. A Breezair system uses up to 80% less energy than a refrigerated cooling system. Doors and windows can be left open, with absolutely no loss of cooling efficiency.

Breezair evaporative cooling:

- Is more energy-efficient – cheaper to run
- Delivers cleaner, healthier air
- Is easier and cheaper to install
- Improves productivity through fresh, clean air (less chance of Sick Building Syndrome or other air-borne problems)
- Is healthier for the environment – drastically reduced power use, no harmful emissions and no synthetic refrigerants
- Is easier to maintain

Flexible cooling

If you need to cool small areas within a large space, then evaporative cooling gives you the only effective option – spot cooling. With spot cooling, an envelope of cool, high velocity air can be directed to a specific area, irrespective of the surrounding conditions.

Why Breezair?

For around four decades, Seeley International's brands have been synonymous with leading-edge technology, innovative design and superior cooling performance, as well as outstanding product reliability and ease of maintenance.

Seeley International's dedication to innovation through the highest standards of research, engineering and manufacture, as well as our commitment to excellence in customer service, all combine to deliver the best possible cooling systems at the best possible price.

Designed and made in Australia to cope with even the harshest conditions, Breezair features a range of benefits exclusive to Seeley International, including:

- Permatuf corrosion-proof cabinets, that won't rust, fade or discolor – no wonder we guarantee them corrosion-free for 25 years!
- Tornado pumps – designed and manufactured by Seeley International, the Tornado pump delivers the highest levels of reliability and safety;
- The AQUAflow non-clogging water distribution system maximizes cooling efficiency;
- The intelligent water management system ensures optimum life of Chillcel Pads and saves water. Unlike standard continuous bleed systems, the advanced technology is cleverly detecting water salinity levels and is only ejecting dirty water as needed.
- Chillcel pads are built strong to last longer and are easy to clean and replace when necessary; and
- The super-efficient HushPower Direct Drive motor, the quietest motor available.
- Easy to install and use - lightweight materials and "snap together" assembly make the TBA Series a "breeze" to install. Contractors love them!

Operate multiple coolers from a single wall controller

Smart Hub (optional accessory)

The Smart Hub is used to enable multiple Breezair variable speed air coolers to be controlled from one wall control. When used with "Industrial Wall Control" (IWC) the Smart Hub provides Evaporative Cooler fault information to the wall control display.

Industrial Wall Control (optional accessory)

The IWC can handle up to 10 smart hubs and control up to 41 Breezair coolers. The IWC identifies any faulty cooler in a group and provides comprehensive fault diagnostics enabling any cooler in a multi cooler installation to be quickly identified and repaired. The IWC10 may also be set up to control Breezair cooler from EXTERNAL devices, such as PLCs and Building Management Systems (BMS).

25 Years
Corrosion-free cabinets guarantee

10 Years
Structural components guarantee

5 Years
De-lamination of Chillcel media guarantee

3 Years
Pump, motor & junction box guarantee

The Breezair TBA Series: exclusive world-class features make seasonal maintenance a breeze

Breezair units feature advanced technology and a range of unique and clever design features that combine to achieve the highest cooling performance of any similar cooler.

Axial Fan

The better the fan, the more efficient the system. This super powerful fan is designed to maximize performance and minimize noise. The purpose designed fans are inherently balanced, with aerofoil blades to provide energy efficient, high pressure performance.

Totally Enclosed Motor

Breezair's fan motor is fully enclosed to international standards and excludes any moisture ingress from all sources. The advanced design is rigorously tested and completely reliable.

Chillcel High Efficiency Pads

With strong, long-lasting Chillcel pads that last for up to seven years, maintenance is easy. Chillcel pads are made from organic paper materials, cleverly manufactured into honeycomb panels that have excellent structural and cooling strength. They are easy to clean and replace when necessary. Seeley International has been using Chillcel pads in our products for decades, so they have a proven track record.

AQUAflow

Breezair's AQUAflow non-clogging water distribution is one of the things that make it unique. The water distributor maximizes cooling efficiency by supplying a continuous and balanced flow of water across the cooling pads. This is different to any other brand of evaporative coolers, which are subject to water flow variations for a number of reasons. Breezair's balanced flow ensures highest evaporation efficiency and maximum cooling.

Permatuf corrosion-proof cabinet

The Breezair cabinet will not corrode or rust. The UV stabilized structural polymer material is the same type used to make acid baths, battery cases and some space satellite components. Plus, it's designed to blend with any property.

Tornado Pump

The perfect pump for the job! The Tornado pump is built to last. Designed, manufactured and tested by Seeley International, the Tornado pump epitomizes reliability. It features very safe material choices, an encapsulated motor with overload cut-out, stainless steel shafts and bearings fully protected from water. Plus, it has a clever impact-start feature that will overcome any tendency for the pump to become locked up with residue during prolonged off periods. The strong synchronous motor has constant speed, independent of voltage fluctuations, and runs very cool.

Thermostat Control

Operate up to 41 coolers from a single wall control using up to 10 smart hubs (optional). Each cooler comes with 65' wiring loom and it can be extended up to a maximum length of 130' (optional).

AUTOWeatherseal

The AUTOWeatherseal closes the cooler air discharge outlet automatically, thus significantly reducing natural air currents from circulating in and out of the building. The result – a more comfortable and controlled environment.

WATERManager System

The Breezair WATERManager ensures optimum machine life with minimum maintenance by constantly checking water quality. As the water in the cooler evaporates, it leaves behind impurities and salts, which then become deposited on the cooling pads and cause the cooling power to fall. The WATERManager System senses water quality with a probe that sends a signal back to the electronic module, which then ejects some dirty water and allows fresh water to enter.

Clean and Dry Function

The cooler drains automatically when it's not in use, preventing algae growth and maintaining a clean cooler.

Digital Smartbox / Control Power Module

A state-of-the-art digital electronic control means optimum performance. The Smartbox digital control module monitors and controls all of the cooler's features to provide ultimate comfort conditions, temperature sensing and water quality supervision – completely safely and reliably. The module also incorporates diagnostic features and memory to aid trouble-shooting and minimize downtime. Several user choice parameters are available to allow you to set up your preferred environment.

Technical information

Technical Specifications (TBA 450)

Airflow	**Industry standard (cfm)**	10,000
Cooling capacity*	**0.3 IWG (BTU/hr)**	41,200
Power consumption (total)	**Watts max**	960
	Current max (amp)	4.6
Power supply	**Voltage / Phases / Hz**	208-230 / 1 / 60
Controller	**Type**	Variable speed
Fan	**Type**	Axial
	Voltage / Phases / Hz	208-230 / 1 / 60
Motor	**Type**	PSC - variable speed
	Speed max (rpm)	1120
	Rating (Watts)	550
	Current (amp)	4.5
	Capacitor (uF)	30
	Voltage / Phases / Hz	208-230 / 1 / 60
	Overload	Auto reset
	Enclosure	IP 24
Pump	**Type**	Centrifugal
	Motor	Synchronous
	Rating Watts (input)	30
	Flow rate (gal/min)	5.1 @ 3.9 ft head
	Voltage / Phases / Hz	208-230 / 1 / 60
	Overload	Auto reset
	Enclosure rating	IP X4
Cooling pad Chillcel	**Size (inches)**	20¾ x 33½ x 3½ x 4 pads
	Pad area (ft²)	19.3
Water	**Tank capacity (gal)**	6
	Inlet (inches)	1/2" male BSP
Shipping	**Dimensions including pallet (inches)**	45¼ x 45¼ x 35½ (H)
	Volume (ft³)	42
	Mass (lbs)	140
	Operating (lbs)	188
Connecting duct (raw edged)	**Length x width (inches)**	21 5/8 x 21 5/8

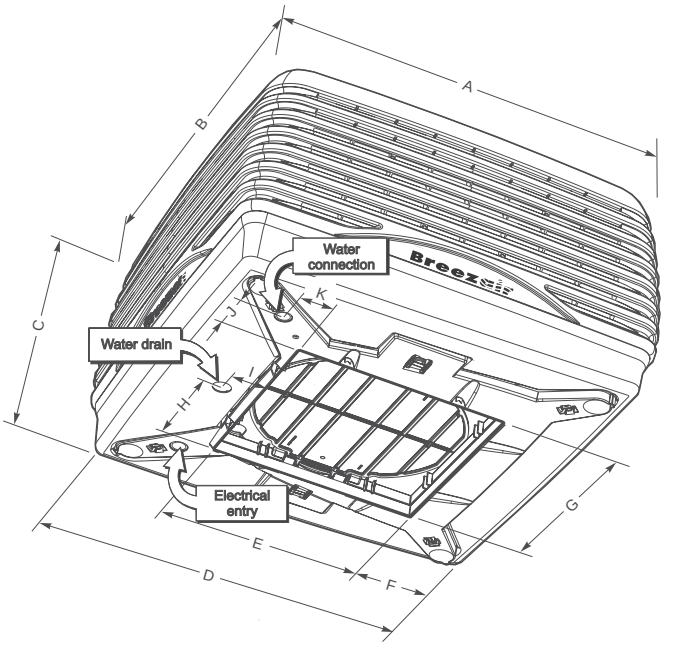
*This cooler has been tested in accordance with the requirements of the California Energy Commission Appliance Efficiency Regulations, Section 1603 and 1604.

Cooler discharge air temperature chart

Ambient Dry Bulb Temperature °F	Ambient Relative Humidity %								
	10	20	30	40	50	60	70	80	90
50	36.6	38.3	39.9	41.5	43.0	44.5	45.9	47.3	48.7
60	43.3	45.5	47.6	49.6	51.5	53.3	55.1	56.8	58.4
70	49.8	52.6	55.2	57.6	59.9	62.1	64.2	66.3	68.2
80	56.0	59.5	62.7	65.6	68.4	71.0	73.4	75.7	77.9
90	62.1	66.3	70.1	73.6	76.9	79.9	82.6	85.2	87.7
100	68.0	73.1	77.6	81.7	85.4	88.8	91.9	94.8	N/A
110	73.9	79.9	85.2	89.8	94.0	N/A	N/A	N/A	N/A
120	79.7	86.8	92.8	98.0	102.6	N/A	N/A	N/A	N/A
130	85.5	93.7	100.5	106.3	N/A	N/A	N/A	N/A	N/A

This chart represents approximate air temperatures based on 87% saturation efficiency at sea level. From tests carried out to Australian Standard 2913.

CABINET DETAILS

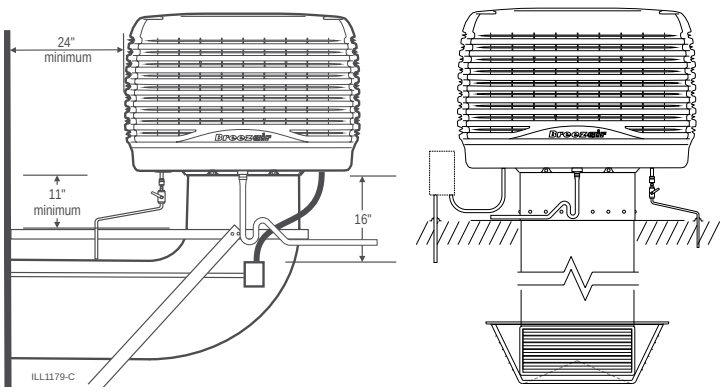


Model#	A	B	C	D	E	F	G	H	I	J	K
TBA 450	45.25	45.25	32.875	45.25	21.625	9.75	21.625	1.375	3.75	3.25	3.25

Note: All dimensions are in inches

Typical installation

Drain outlet	1 ½" BSP to ¾" OD Reducer piece designed for push-on use with a flexible hose (3/4" ID) or solid PVC pipe (3/4" ID)
Water inlet	½" BSP to 3/8" Nom or ½" BSP to ¼" compression adapter pieces
Electrical	½" Flexible conduit
Install kit	The kit consists of wall control, 65' wiring loom, auto drain valve and plumbing fittings (supplied as standard inside cooler).



Sizing instructions

Use the Certified Air Delivery performance tables and the following procedure to properly size a Seeley International evaporative cooling unit for your application.

The performance or Cooling Capacity of an evaporative cooler is a function of both the air flow (CFM) and air discharge temperature.

Static pressure, or duct system resistance, also impacts on air delivery and should be considered to correctly size the cooling unit.

1 Determine design Conditions

- Outside Dry-Bulb (DB)
- Outside Wet-Bulb (WB)
- Inside Dry-Bulb (TI)

2 Determine the design Sensible Heat Load (Btuh)

3 Determine the Cooler Leaving Air Temperature (LAT)

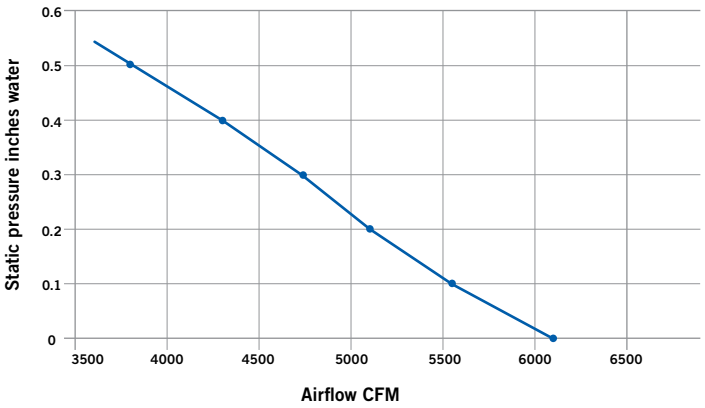
LAT = DB – [(DB-WB) EFF]
where EFF = 0.87 for Chillcel media

4 Determine the CFM required

$$CFM = \frac{0.925 \times \text{Sensible Heat Load}}{(TI - LAT)}$$

5 Determine the cooler(s) required by referring to the air flow charts to the right.

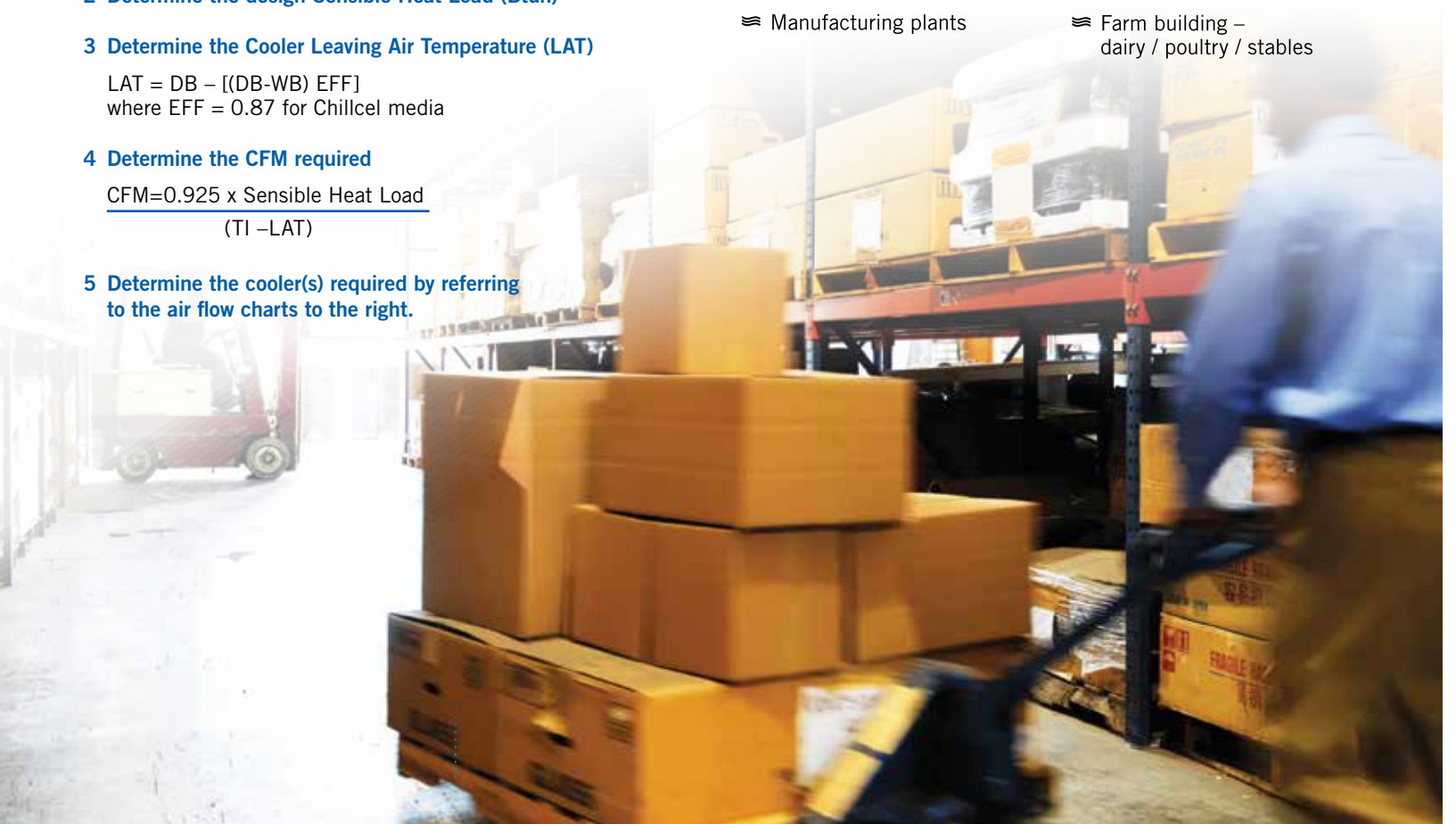
FAN CURVES



Model#	Industry STD Rating CFM	Motor H.P	Certified Air Delivery (CFM) (static pressure inches water)					
			0.0	0.1	0.2	0.3	0.4	0.5
TBA 450	10,000	0.75	6100	5545	5145	4730	4300	3730

SUITABLE FOR MOST INDUSTRIES, INCLUDING:

- Warehouses
- Repair / maintenance areas
- Sports centers
- Institutional facilities
- Manufacturing plants
- Storage areas
- Laundries / dry cleaners
- Commercial kitchens
- Agricultural facilities
- Farm building – dairy / poultry / stables



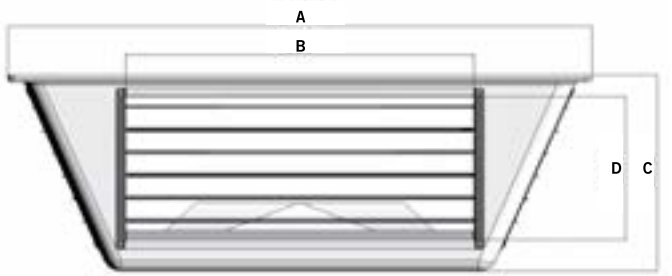
Air diffusers

All plenums are vacuum formed from high strength, low weight ABS plastic. The diffuser consists of aluminum airfoil blades, individually adjustable from fully open to closed for maximum directional air control.

4-sided high capacity commercial air diffuser

Manufacturer Part #089249

Outlets	Free Area ft²	Velocity FPM	Volume CFM	Pressure IWG	Throw Feet
4	5.6	980	5500	0.14	16.5
		1278	7200	0.2	19.5
		1476	8200	0.3	23



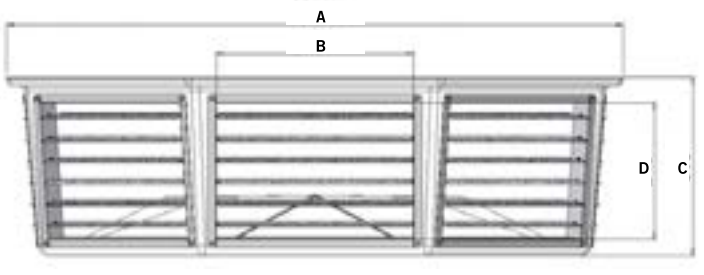
Model#	A	B	C	D
4-sided high capacity commercial air diffuser	34.8	20.7	11.6	9.4

Note: All dimensions are in inches. Drawing shows the actual opening dimensions.

8-sided high capacity commercial air diffuser

Manufacturer Part #089256

Outlets	Free Area ft²	Velocity FPM	Volume CFM	Pressure IWG	Throw Feet
8	7	980	6990	0.14	16.5
		1278	9090	0.2	19.5
		1476	10,488	0.3	23



Model#	A	B	C	D
8-sided high capacity commercial air diffuser	42.7	13.6	12.2	9.4

Note: All dimensions are in inches. Drawing shows the actual opening dimensions.

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