

# Commercial and Industrial Cooling

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World-leading evaporative cooling technology



# Why Breezair?

## How evaporative air cooling works

The beauty of evaporative air conditioning is its simplicity. It's a process that's been used throughout history – thousands of years ago, the Arabs hung wet blankets in the entrances to their tents, while the Greeks placed terracotta pots filled with water in their doorways.

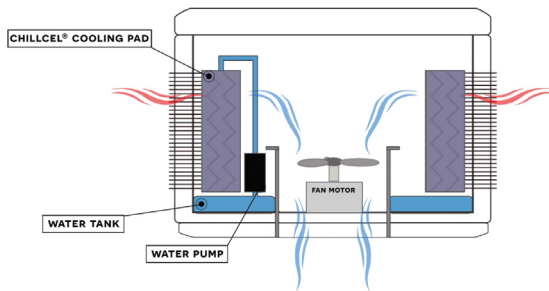
Evaporative air conditioning takes advantage of this natural process. Each Breezair cooler contains large cooling pads, which are soaked with water. Hot ambient (outside) air is

drawn through the cooler with a quiet but powerful fan.

As the hot air passes through the wet pads, the water absorbs some of the heat as it evaporates. The beautifully cooled, fresh air is then delivered into the building.

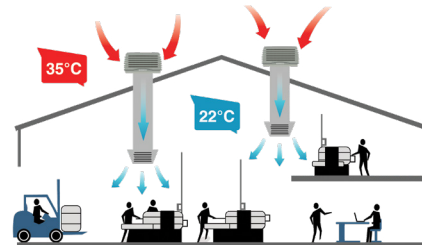
Natural evaporation cools the air, while the pads filter out dust, pollen and other contaminants. The result: cooler, cleaner, fresher air, without using fluorocarbons or potentially toxic chemicals.

### 1. Hot outside air is pumped through water-soaked pads



2. As the air blows through the pads water is evaporated and the heat in the air is absorbed

### 3. This lowers the temperature of the air, which is then pushed to the whole building



#### FOR COMMERCIAL & INDUSTRIAL SPACES

Evaporative cooling is fast becoming the only viable option for cooling large areas. Traditional A/C systems are often not an option, due to the high capital and running costs.



#### SAVING ON RUNNING COSTS

A Breezair system uses up to 87% less energy than refrigerated air conditioning systems. The only power-consuming components of an evaporative cooler are the fan and a water pump.



#### 100% FRESH, NOT RECIRCULATING AIR

Traditional A/C systems rely on recirculating the air inside the building, which in industrial spaces can be full of fumes and germs. Evaporative cooling always use fresh air from outside.



#### EASY TO MAINTAIN AND INSTALL

With no compressor installed and not using chemical refrigerants to cool the air, Breezair evaporative coolers are simple to install and even easier to maintain.



#### GREEN TECHNOLOGY

Evaporative cooling systems contain no harmful synthetic refrigerants. Compare this to refrigerated systems which use potent greenhouse gases like hydro fluorocarbons or chlorofluorocarbons, which deplete the ozone layer.



#### ONLY WATER USED

Evaporative coolers only use water and electricity to run. 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.

# Breezair Supercool™ TBS 580

Optimum efficiency and unsurpassed reliability

## Technical Specifications

### TBS 580

Airflow @ 80Pa	Industry standard	10010 m <sup>3</sup> /h 5890 cfm
Cooling capacity*	kW	16.8
Power consumption (total)	Watts max	1210
	Current max (amp)	6.0
Power supply	Voltage / Phases / Hz	220-240 / 1 / 50
Controller	Type	Digital
Fan	Type	Axial
	Dia (mm)	541
Motor	Type	PSC
	Speed max (rpm)	1350 VAR
	Output Watts max	950
	Overload	Auto reset & "one shot" fuse
	Enclosure	IP24
Pump	Type	Centrifugal
	Motor	Synchronous
	Power - rated (A)	0.25
	Flow rate (L/min)	21
	Voltage / Phases / Hz	230 / 1 / 50
	Overload	Thermal One Shot Fuse
Cooling pad Chillcel™	Size (mm)	850 x 526 (H) x 120 (4 pads)
	Pad area (m <sup>2</sup> )	1.79
Water	Tank capacity (L)	23
	Inlet (mm / inches)	12.7 / ½ male BSP
	Drain (mm / inches)	40 / 1½ male BSP
Shipping	Dimensions including pallet (mm)	1150 x 1150 x 902 (H)
	Volume (m <sup>3</sup> )	1.19
	Mass (kg)	68
	Operating (kg)	91
Connecting duct (raw edged)	Length x width (mm)	550 x 550

\*Cooling capacity measured to Australian Standard AS2913-2000, ambient of 38°C dry bulb & 21°C wet bulb, with room exit temperature of 27.4°C.

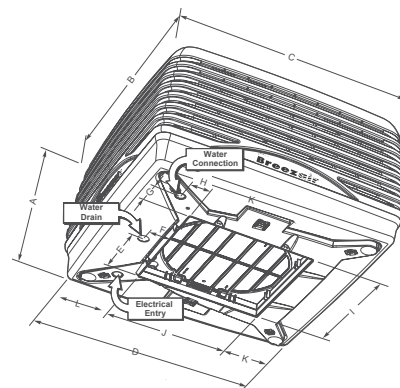
## Cooler Discharge Air Temperature Chart

Ambient Dry Bulb Temperature °C	Ambient Relative Humidity %								
	10	20	30	40	50	60	70	80	90
10	2.3	3.2	4.2	5.1	6.0	6.8	7.6	8.4	9.2
15	5.6	6.8	8.0	9.1	10.2	11.2	12.2	13.2	14.1
20	8.8	10.3	11.7	13.1	14.4	15.6	16.8	18.0	19.0
25	11.9	13.7	15.4	17.0	18.6	20.0	21.3	22.6	23.8
30	14.8	17.1	19.1	21.0	22.8	24.4	25.9	27.4	28.7
35	17.8	20.4	22.8	25.0	27.0	28.8	30.5	32.1	33.6
40	20.7	23.8	26.6	29.0	31.3	33.3	35.2	36.9	38.5
45	23.5	27.1	30.3	33.1	35.5	37.8	39.8	41.7	43.4
50	26.3	30.5	34.1	37.1	39.9	42.3	44.5	46.5	48.3

This chart represents approximate air temperatures based on 90% saturation efficiency at sea level. From tests carried out to Australian Standard 2913.



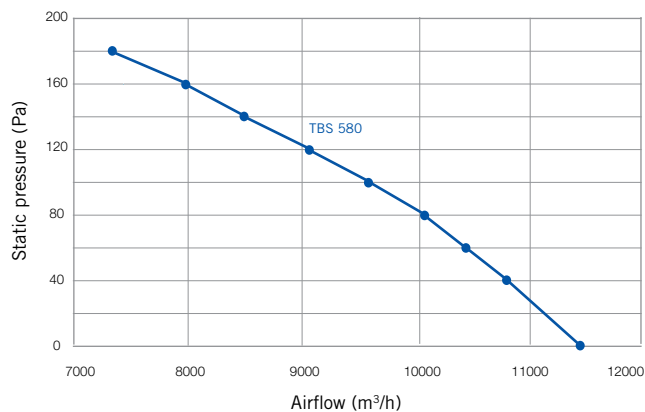
### CABINET DETAILS



Model#	A	B	C	D	E	F	G	H	I*	J*	K	L
TBS 580	835	1150	1150	1080	275	95	82	82	555	555	249	279

Note: All dimensions are in mm \*Dropper dimensions

### FAN CURVE



Model#	Industry STD Rating m <sup>3</sup> /h @ 80Pa	Motor W	Certified Air Delivery (m <sup>3</sup> /h) (static pressure Pa)				
			0	40	80	120	160
TBS 580	10010	950	11410	10800	10010	9070	7960



# Breezair Supercool™ SuperStealth™ TBSI 580

World's first high performance inverter axial evaporative cooler

## Technical Specifications

### TBSI 580

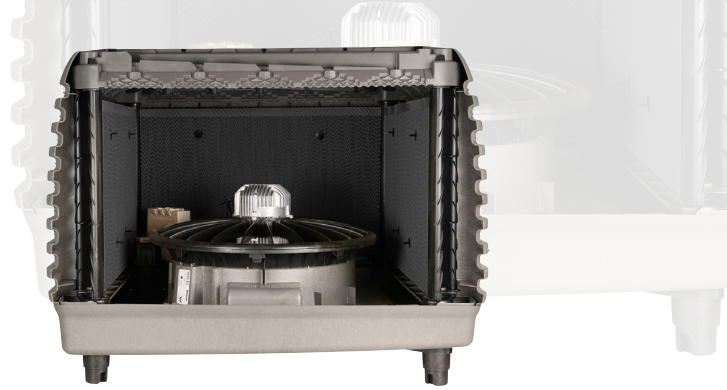
Airflow @ 80Pa	Industry standard	10910 m <sup>3</sup> /h 6420 cfm
Cooling capacity*	kW	18.4
Power consumption (total)	Watts max	1500
	Current max (amp)	7.0
Power supply	Voltage / Phases / Hz	220-240 / 1 / 50
Controller	Type	Digital
Fan	Type	Axial
	Dia (mm)	534
Motor	Type	Inverter
	Speed max (rpm)	1700 VAR
	Output Watts max	950
	Overload	Two "One shot" fuse
	Enclosure	IP24
Pump	Type	Centrifugal
	Motor	Synchronous
	Power - rated (A)	0.25
	Flow rate (L/min)	21
	Voltage / Phases / Hz	230 / 1 / 50
	Overload	Thermal One Shot Fuse
	Enclosure rating	IPX4
Cooling pad Chillcel™	Size (mm)	850 x 526 (H) x 120 (4 pads)
	Pad area (m <sup>2</sup> )	1.79
Water	Tank capacity (L)	23
	Inlet (mm / inches)	12.7 / ½ male BSP
	Drain (mm / inches)	40 / 1½ male BSP
Shipping	Dimensions including pallet (mm)	1150 x 1150 x 902 (H)
	Volume (m <sup>3</sup> )	1.19
	Mass (kg)	71
	Operating (kg)	94
Connecting duct (raw edged)	Length x width (mm)	550 x 550

\*Cooling capacity measured to Australian Standard AS2913-2000, ambient of 38°C dry bulb & 21°C wet bulb, with room exit temperature of 27.4°C.

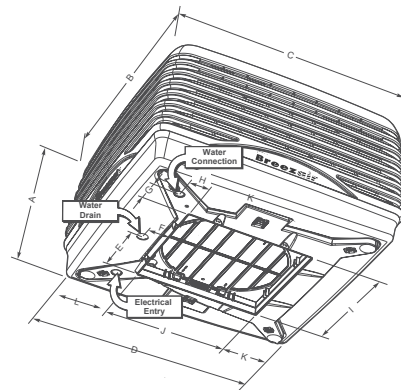
## Cooler Discharge Air Temperature Chart

Ambient Dry Bulb Temperature °C	Ambient Relative Humidity %								
	10	20	30	40	50	60	70	80	90
10	2.2	3.2	4.2	5.1	5.9	6.8	7.6	8.4	9.2
15	5.6	6.8	8.0	9.1	10.2	11.2	12.2	13.2	14.1
20	8.8	10.3	11.7	13.1	14.4	15.6	16.8	18.0	19.0
25	11.8	13.7	15.4	17.0	18.6	20.0	21.3	22.6	23.8
30	14.8	17.1	19.1	21.0	22.8	24.4	25.9	27.4	28.7
35	17.7	20.4	22.8	25.0	27.0	28.8	30.5	32.1	33.6
40	20.7	23.7	26.5	29.0	31.2	33.3	35.2	36.9	38.5
45	23.5	27.1	30.3	33.1	35.5	37.8	39.8	41.7	43.4
50	26.3	30.5	34.1	37.1	39.8	42.2	44.5	46.4	48.3

This chart represents approximate air temperatures based on cooling performance at sea level. From tests carried out to Australian Standard 2913.



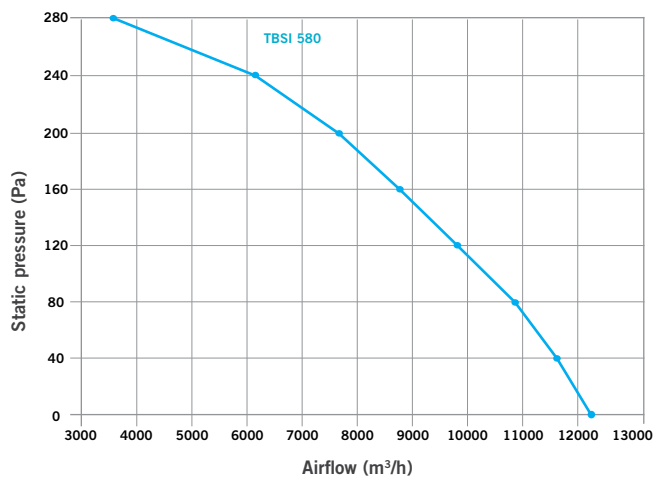
CABINET DETAILS



Model#	A	B	C	D	E	F	G	H	I*	J*	K	L
TBSI 580	835	1150	1150	1080	275	95	82	82	555	555	249	279

Note: All dimensions are in mm \*Dropper dimensions

FAN CURVE



Model#	Industry STD Rating m <sup>3</sup> /h @ 80Pa	Motor W	Certified Air Delivery (m <sup>3</sup> /h) (static pressure Pa)							
			0	40	80	120	160	200	240	280
TBSI 580	10910	950	12240	11660	10910	9860	8820	7700	6160	3600

# Breezair Icon® Supercool™ EXS 220

## Centrifugal fan for quiet cooling

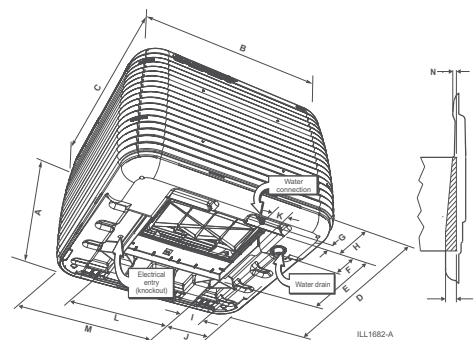
### Technical Specifications

#### EXS 220

Airflow @ 80Pa	Industry standard	9140 m³/h 5380 cfm
Cooling capacity*	kW	15.1
Power consumption (total)	Watts max	1860
	Current max (amp)	9.0
Power supply	Voltage / Phases / Hz	220-240 / 1 / 50
Controller	Type	Digital
Fan	Type	Centrifugal
	Dia x width (mm)	460 x 380
Motor	Type	Centrifugal
	Speed max (rpm)	680 VAR
	Output Watts max	1500
	Overload	Auto reset
	Enclosure	IP2X
Pump	Type	Centrifugal
	Motor	Synchronous
	Rating Watts (input)	25
	Flow rate (L/min)	21
	Voltage / Phases / Hz	230 / 1 / 50
	Overload	Auto reset
	Enclosure rating	IPX4
Cooling pad Chillcel™	Size (mm)	800 x 635 (H) x 120 (4 pads)
	Pad area (m²)	2.03
Water	Tank capacity (L)	11
	Inlet (mm / inches)	12.7 / ½ male BSP
	Drain (mm / inches)	40 / 1½ male BSP
Shipping	Dimensions including pallet (mm)	1160 x 1160 x 955 (H)
	Volume (m³)	1.29
	Mass (kg)	87
	Operating (kg)	94
Connecting duct (raw edged)	Length x width (mm)	550 x 550



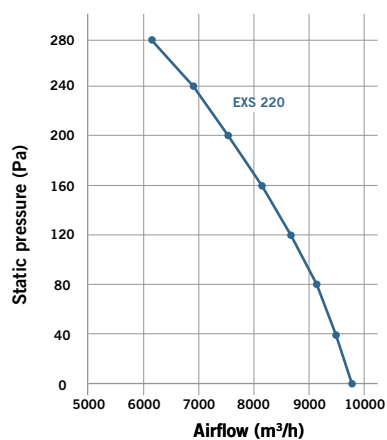
#### CABINET DETAILS



Model#	A	B	C	D	E*	F	G	H	I	J	K	L*	M	N	O
EXS 220	860	1160	1160	1108	555	109	38	182	81	274	118	555	834	38	84

Note: All dimensions are in mm. \*Dropper dimensions

#### FAN CURVE



Model#	Industry STD Rating m³/h @ 80Pa	Motor W	Certified Air Delivery (m³/h) (static pressure Pa)							
			0	40	80	120	160	200	240	280
EXS 220	9140	1500	9790	9500	9140	8680	8140	7560	6910	6160

\*Cooling capacity measured to Australian Standard AS2913-2000, ambient of 38°C dry bulb & 21°C wet bulb, with room exit temperature of 27.4°C.

### Cooler Discharge Air Temperature Chart

		Ambient Relative Humidity %								
		10	20	30	40	50	60	70	80	90
Ambient Dry Bulb Temperature °C	10	2.3	3.3	4.2	5.1	6.0	6.8	7.7	8.5	9.2
	15	5.6	6.9	8.0	9.1	10.2	11.2	12.2	13.2	14.1
	20	8.8	10.3	11.8	13.1	14.4	15.6	16.8	18.0	19.0
	25	11.9	13.8	15.5	17.1	18.6	20.0	21.4	22.6	23.9
	30	14.9	17.2	19.2	21.1	22.8	24.4	26.0	27.4	28.7
	35	17.9	20.5	22.9	25.1	27.1	28.9	30.6	32.1	33.6
	40	20.8	23.9	26.6	29.1	31.3	33.3	35.2	36.9	38.5
	45	23.6	27.2	30.4	33.1	35.6	37.8	39.8	41.7	43.4
	50	26.5	30.6	34.2	37.2	39.9	42.3	44.5	46.5	48.3

This chart represents approximate air temperatures based on cooling performance at sea level. From tests carried out to Australian Standard 2913.

# Features

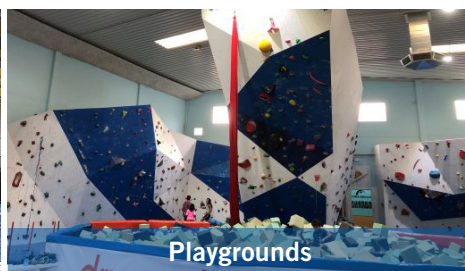
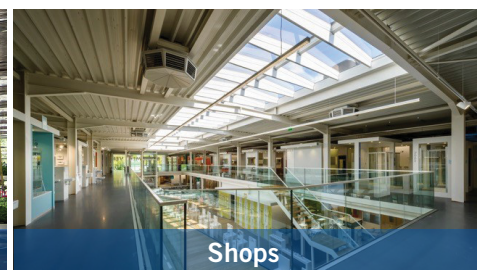
		TBS	TBSI	EXS
	<b>Permatuf™ Corrosion-proof Cabinet</b> The Breezair cabinet will not corrode or rust. The UV stabilized structural polymer material is the same type used to make acid baths, battery cases and some space satellite components. Plus, it's designed to blend with any property.	✓	✓	✓
	<b>Axial Fan</b> This super powerful fan is designed to maximise performance. TBSI 580 is fitted with a SuperStealth™ Fan specifically designed to be more energy efficient.	✓	✓	
	<b>Centrifugal Fan</b> Centrifugal fans are the first choice of air conditioning engineers worldwide. The Breezair forward curved, centrifugal fans are made from injection-moulded polypropylene. They are double-width, inherently statically and dynamically balanced, with aerofoil blades to provide high pressure performance and very low noise levels.			✓
	<b>Tornado® Pump</b> The perfect pump for the job! The Tornado pump is built to last. 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.	✓	✓	✓
	<b>AUTOWeatherseal™</b> 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.	✓	✓	✓
	<b>Non-clogging water distribution system</b> It maximises cooling efficiency by supplying a continuous and balanced flow of water across the cooling pads, which ensures highest evaporation efficiency and maximum cooling.	✓	✓	✓
	<b>Mini-Cell^ Chillcel™ Pad Technology</b> <sup>^Patent pending</sup> Our revolutionary Black Opal™ Mini-Cell Chillcel pads have transformed the aesthetics of our coolers as they seamlessly blend into their surroundings.	✓	✓	✓
	<b>Switch Plate MagIQ</b> Basic tool that can control an individual cooler: Water Pump (ON/OFF), Fan (ON/OFF) & Fan Speed.	0	0	0
	<b>MagIQcool™ Controller</b> Operate one cooler from an easy to use, wall mounted thermostat controller. The controller comes with 20 m wiring loom, that can be extended up to a maximum length of 100 m.	✓	✓	✓
	<b>Advanced touch screen MagIQtouch™ Controller</b> The technology includes in-built Installation Wizard, making the operating process simple. Each cooler comes supplied with a 20 m wiring loom and it may be extended up to a maximum length of 40 m (optional), and to operate up to 60 coolers* from a single MagIQtouch Controller, using optional Link Module and wiring loom - no special controllers required! *Total loom length must be <= 1000 m	0	0	0
	<b>MagIQtouch™ suite Compatibility (each appliance can be ordered separately)</b> <b>Internal air sensor:</b> checking internal temperature & humidity to be installed in the area that you need to cool. <b>External air sensor:</b> intuitively optimises water and energy consumption based on outside ambient conditions. <b>BMS Controller M1 &amp; MS1:</b> allows to connect coolers to an external BMS system. <b>Link Module:</b> Link any additional MagIQtouch appliance into the system using this small module! <b>MagIQtouch™ App:</b> control your system from an easy to use mobile app!	0	0	0
	<b>Digital Smartbox / Control Power Module</b> The Smartbox digital control module monitors and controls all of the air conditioner's features to provide ultimate comfort conditions, temperature sensing and water quality supervision. The module also incorporates diagnostic features and memory to aid troubleshooting and minimise downtime.	✓	✓	✓
	<b>WATERManager™ System</b> The Breezair WATERManager ensures optimum machine life with minimum maintenance by constantly checking water quality. As the water in the air conditioner 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 water and allows fresh water to enter.	✓	✓	✓
	<b>Clean and Dry Function</b> The cooler drains automatically when it's not in use, preventing algae growth and maintaining a clean cooler.	✓	✓	✓
	<b>Totally Enclosed Motor</b> Breezair's fan motor is fully enclosed to international standards and excludes any moisture ingress from all sources.	✓		
	<b>Invertair™ Motor</b> The Inverter motor is highly efficient throughout the operating range, using far less energy than a standard fan and motor.		✓	
	<b>HushPower® Direct Drive Motor</b> Exclusive to Breezair, this motor is super efficient and electronically controlled for optimum efficiency. Corrosion resistant, it's the quietest motor available and has unsurpassed reliability, reduced energy use and runs at variable speeds.			✓

✓ = Yes 0 = optional



# Applications

Breezair evaporative cooling is suitable for a large range of commercial and industrial applications:





#### **BREEZAIR**

Direct Evaporative Air Conditioning

#### **THE CLIMATE WIZARD**

Multi-cycle indirect Evaporative Air Conditioning

#### **COOLAIR**

Direct Evaporative Air Conditioning

#### **COOLERADO**

Multi-cycle indirect Evaporative Air Conditioning

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