



Indirect Evaporative Air Conditioning





World leading climate control solutions

Seeley International is Australia's largest air conditioning manufacturer and a global leader in developing ingenious, energy-efficient cooling and heating products.

Award Winning Company

Seeley International consistently wins awards each year for new product design, innovation and the environment.

Recent awards include:





About Climate Wizard

Climate Wizard's unique indirect evaporative heat exchange core provides hyper-efficient cooling of outside air.

Generate **100% fresh, cool, outside air**, at temperatures that rival refrigerated systems, with up to **80% lower energy cost***, up to **111% wet bulb effectiveness on the indirect stage**, and up to **128% when our indirect and direct stages are combined**.

Reduce carbon emissions Low GWP



Reduced running costs by up to 80%*

Reduce the energy use and improve the cooling performance of existing refrigerated systems

No high electrical demand charges even in hot weather

Savings on the installation costs

Comfortable indoor air quality



Temperatures are similar to those produced by refrigerated systems

Improved IAQ (indoor air quality) with 100% outside air

No moisture added to the air**

Total cooling performance increases when air temperature rises

Flexible applications



Flexible design and engineering configurations

Ideal for use as a DOAS (dedicated outdoor air system), data center cooling or for comfort cooling applications

Covers an exceptionally large range of flexible configurations in a wide range of industries

Supported by a team of experienced design consultants and engineers

Supporting Sustainability



Wiser use of water (R-718)

No synthetic refrigerants or chemicals to harm the environment

Features Auto-Cleanse™ water management system to minimize water consumption and to maintain quality

Hyper-efficient



Simple, reliable solution to improve COP / EER (coefficient of performance / energy efficiency ratio)

Meets various regulatory requirements

Tested in NATA (National Association of Testing Authorities) accredited laboratory#

Low maintenance with technical support



Australian designed and owned

Made in USA from imported components (CW-H models only)

Easy access to spare parts

After sales support

Designed for easy maintenance

*Compared to refrigerated systems performing the same duty

** Climate Wizard Supercool (indirect/direct option) adds a small amount of moisture to the supply air

#Testing of the CW-80 units in the NATA accredited Meridian Test Laboratory is not possible due to their large and unique size.

Standard product range

Climate Wizard

Indirect evaporative air conditioning

Dramatically reduces energy consumption and cooling costs compared to equivalent refrigerated systems



CW-H15

UP TO
82,000
BTU/h

- EER of up to 46
- Up to 82,000 BTU/h of cooling capacity in outside air pre-cooling applications
- Up to 2,330 CFM supply air



CW-80

UP TO
475,400
BTU/h

- EER of up to 48
- Up to 475,400 BTU/h of cooling capacity in outside air pre-cooling applications
- Up to 13,560 CFM supply air

CW-80 Twin

UP TO
950,800
BTU/h

- EER of up to 48
- Up to 950,800 BTU/h of cooling capacity in outside air pre-cooling applications
- Up to 27,120 CFM supply air

Climate Wizard Supercool

Indirect evaporative cooling with direct evaporative stage

Designed to maintain precise temperature and humidity levels – at very low operating costs



CW-H15S Plus

UP TO
135,500
BTU/h

- EER of up to 61
- Up to 135,500 BTU/h of cooling capacity in outside air pre-cooling applications
- Up to 3,390 CFM supply air

CW-H15S



UP TO
93,800
BTU/h

- EER of up to 53
- Up to 93,800 BTU/h of cooling capacity in outside air pre-cooling applications
- Up to 2,330 CFM supply air

Discover how CW-H15S is the ideal solution for winery barrel halls at seeleyinternational.com/bve



CW3

UP TO
43,300
BTU/h

- EER of up to 25
- Up to 43,300 BTU/h of cooling capacity in stand alone cooling applications
- Up to 2,750 CFM supply air



CW-80S

UP TO
532,700
BTU/h

- EER of up to 45
- Up to 532,700 BTU/h of cooling capacity in outside air pre-cooling applications
- Up to 13,560 CFM supply air

How it works

Climate Wizard indirect evaporative air conditioners use a hyper-efficient counter-flow heat exchanger to produce 100% fresh, cool, outside air, with no added moisture.

The fresh cold air produced by Climate Wizard can be similar to that produced by refrigerated systems, with temperatures that approach the ambient dew-point temperature.

1. Hot air enters the cooler

- Hot outside air enters the cooler via the inlet.
- A powerful, energy-efficient, electric fan moves the air towards the core.

2. Hot air passes through the core

- The core is an air-to-air heat exchanger consisting of alternating dry and wet channels.
- All of the air passes along the dry channels and gains no additional moisture.

3. Warm, moist air exhausted outside

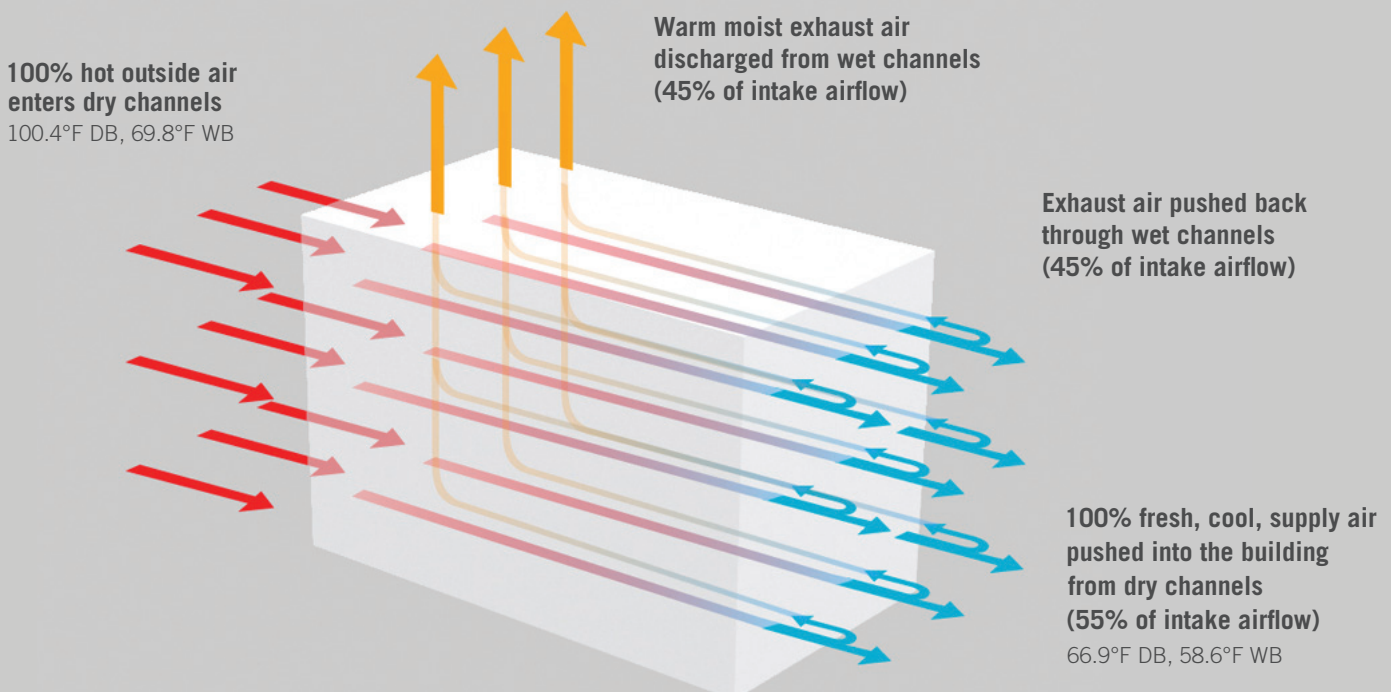
- As the air exits the dry channels, a portion of the conditioned air is returned through the wet channels.
- Through evaporation and conduction, it gains both moisture and heat. The channels are continuously soaked with water. This moist, warm air is then exhausted outside of the building.

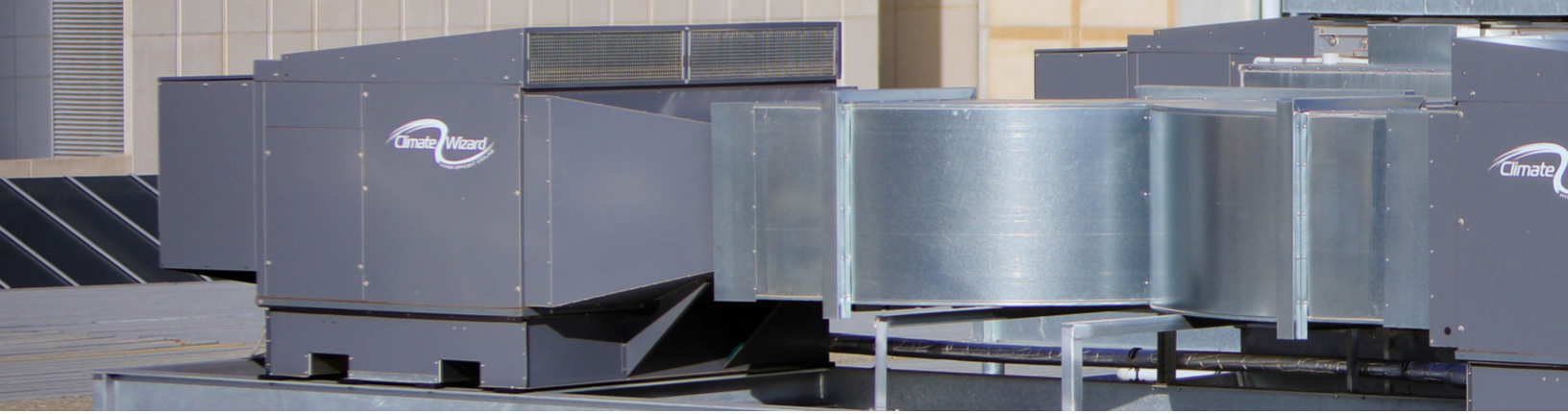
- No moisture is transferred across the membranes between the dry and wet channels; only temperature (heat) is transferred.
- The heat passes out of the air in the dry channels through the membrane and into the air passing through the wet channels.
- In this way, the air in the dry channels becomes progressively colder but gains no moisture.

4. Fresh, cool outside air passes into the building

- The air passing along the dry channels in the core is cooled, with no moisture added.
- This fresh, cool air passes into the building.

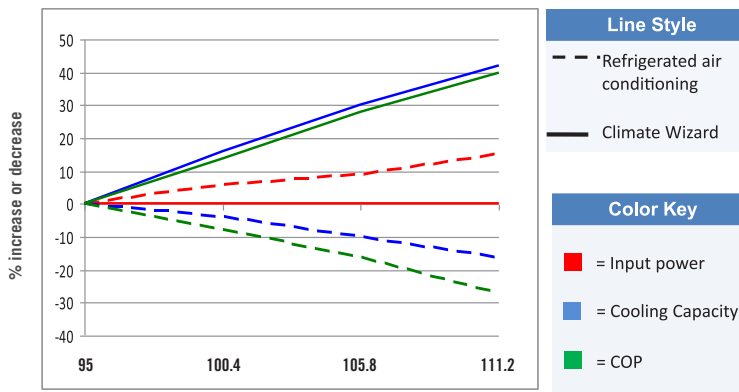
Climate Wizard counter-flow heat exchanger





Performance comparison

Climate Wizard vs refrigerated cooling as temperature rises



Outdoor Temperature (Degrees Fahrenheit DB)
Source: Uni SA Roxby Downs Report June 2009

Climate Wizard's cooling performance can rival that of refrigerated systems, using up to 80% less energy.

That's not only great for reducing power bills; it's also great for the environment. Climate Wizard uses the same amount of power and still delivers 100% fresh, cool air inside.

This is in direct contrast to refrigerated systems, which require increasing amounts of power as outside temperatures rise. Climate Wizard's cost-saving capabilities actually increase, when the heat is at its highest.

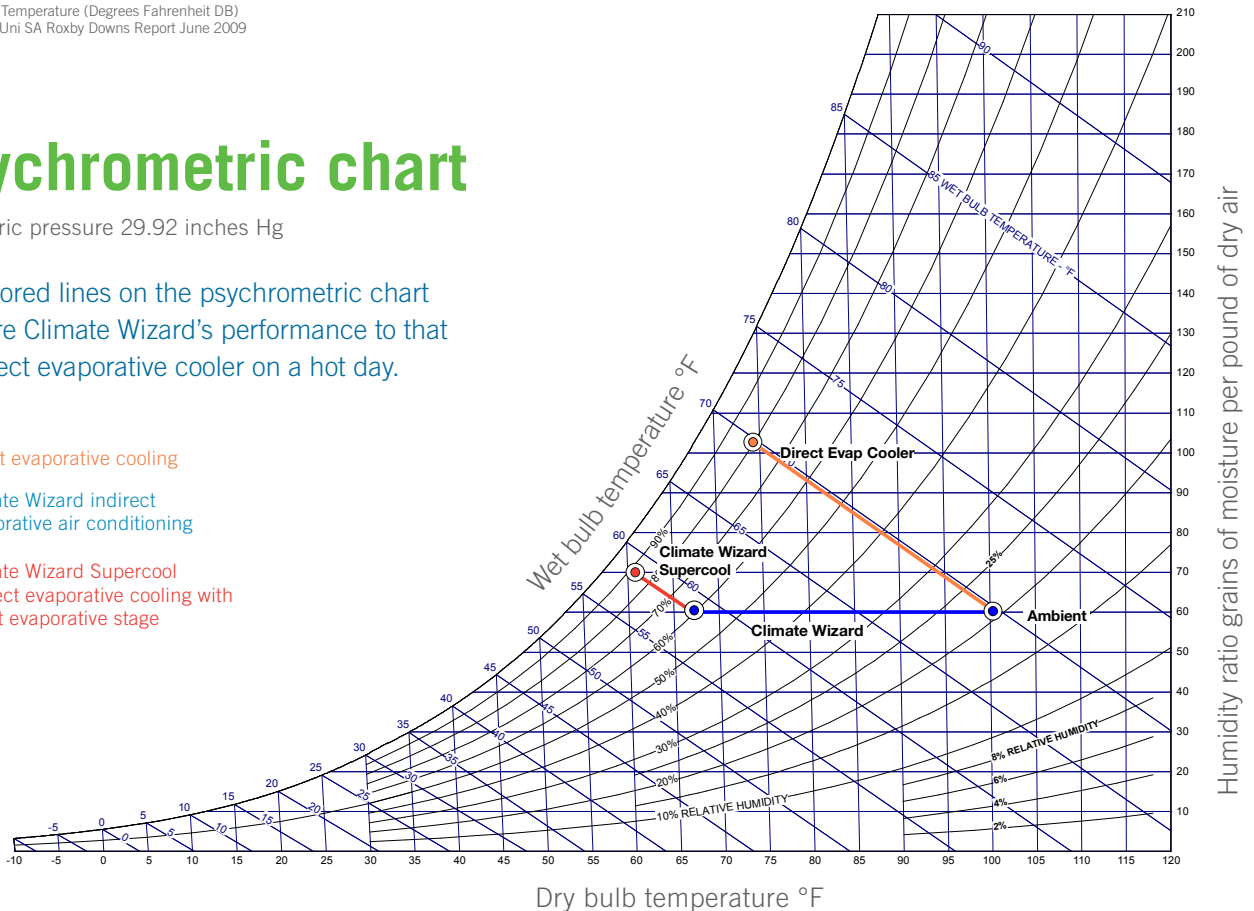
At the same time, Climate Wizard's performance also increases as temperatures rise – again, in complete contrast to refrigerated systems.

Psychrometric chart

Barometric pressure 29.92 inches Hg

The colored lines on the psychrometric chart compare Climate Wizard's performance to that of a direct evaporative cooler on a hot day.

- Direct evaporative cooling
- Climate Wizard indirect evaporative air conditioning
- Climate Wizard Supercool indirect evaporative cooling with direct evaporative stage





Climate Wizard Cooling Performance

Supply Air Temperature

Location	Design Conditions	Leaving Air Temp. (°F)				
		CW-H15	CW-H15S	CWH15S Plus	CW-80	CW-80S
Arid	108 °F DB / 70 °F WB	66	59	61	67	61
Temperate	99 °F DB / 66 °F WB	63	57	59	64	58
Continental	88 °F DB / 68 °F WB	66	63	64	67	64
Sub-Tropical	88 °F DB / 73 °F WB	72	70	71	73	71
Tropical	91°F DB / 79 °F WB	78	76	77	78	77

Stand-Alone Cooling Capacity

Location	Design Conditions	CW-H15		CW-H15S		CW-H15S Plus		CW-80		CW-80S	
		Tons	EER	Tons	EER	Tons	EER	Tons	EER	Tons	EER
Arid	108 °F DB / 70 °F WB	3	22	5	32	6	34	18	22	26	26
Temperate	99 °F DB / 66 °F WB	4	26	5	35	7	38	22	26	29	29
Continental	88 °F DB / 68 °F WB	3	21	4	27	5	30	18	21	22	22
Sub-Tropical	88 °F DB / 73 °F WB	2	13	2	16	3	18	10	12	13	14

Pre-Cooling Capacity

Location	Design Conditions	CW-H15		CW-H15S		CW-H15S Plus		CW-80		CW-80S	
		Tons	EER	Tons	EER	Tons	EER	Tons	EER	Tons	EER
Arid	108 °F DB / 70 °F WB	9	60	10	69	14	78	51	61	58	59
Temperate	99 °F DB / 66 °F WB	8	51	9	60	12	67	43	52	50	51
Continental	88 °F DB / 68 °F WB	5	31	5	36	7	41	26	31	30	31
Sub-Tropical	88 °F DB / 73 °F WB	3	22	4	25	5	29	18	22	21	22
Tropical	91°F DB / 79 °F WB	3	20	3	22	5	25	16	19	18	19

Climate Wizard cooling performance calculator

Enter the key parameters to compare how much energy can be saved. Typically the results are compelling.

You will be provided with a summary and a report of your results to meet local climate conditions.

Go to seeleyinternational.com/us/climate-wizard-calculator

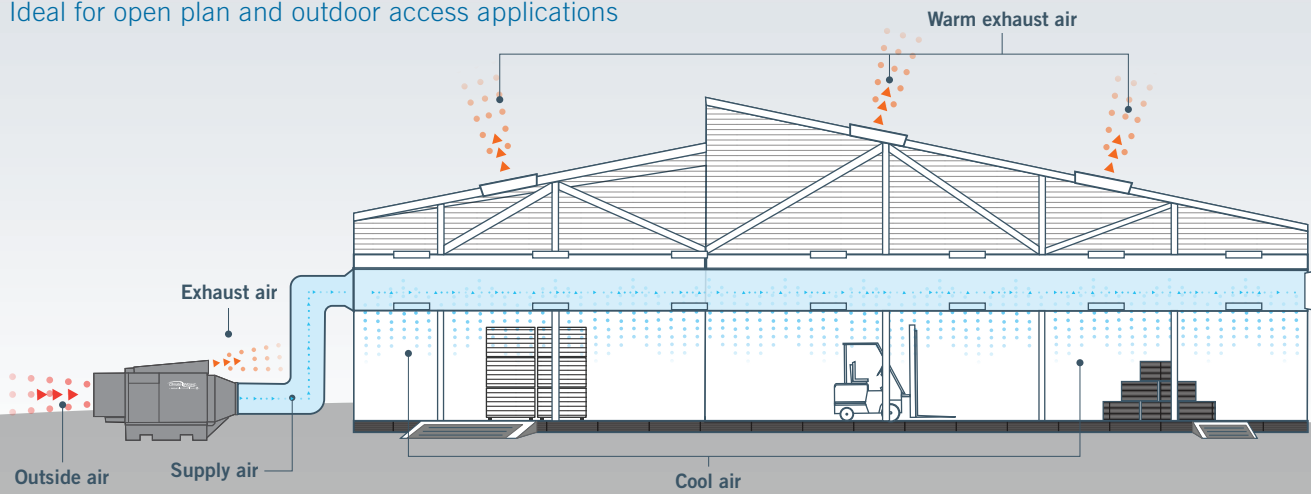


Diverse configurations and applications

Dramatically reduce energy consumption and cooling costs by incorporating Climate Wizard with other HVAC systems.

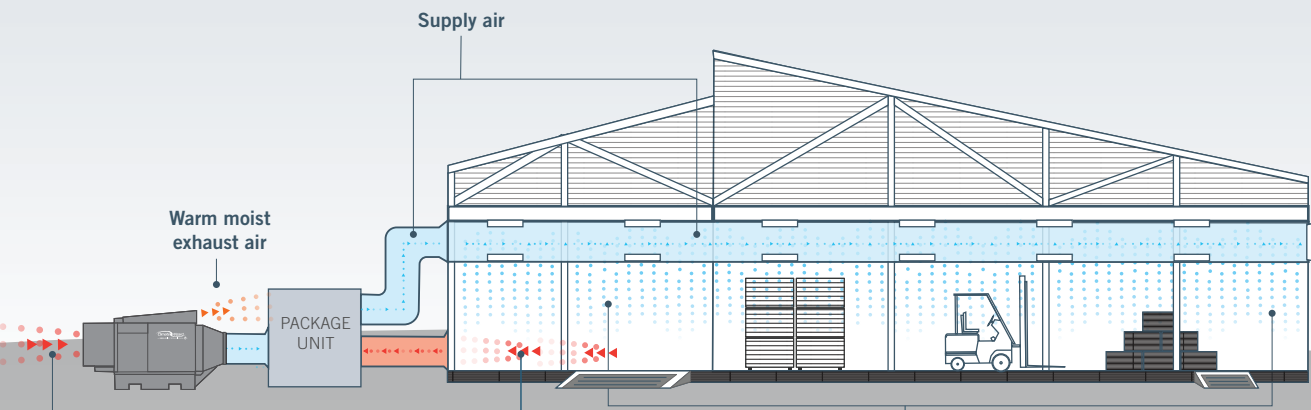
Stand-alone cooling

Ideal for open plan and outdoor access applications



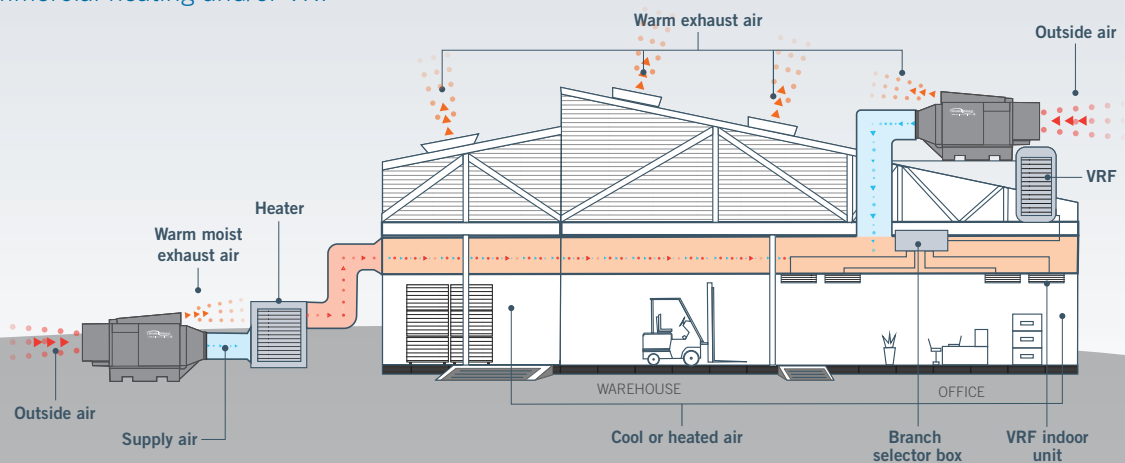
Pre-cooling

A super cost effective way of cooling outside air required by refrigerated systems



Hybrid heating and cooling

Ensure full design heating and cooling capacity by combining Climate Wizard with other HVAC equipment such as commercial heating and/or VRF



Controller options

BMS interface

Standard on all models

All Climate Wizard air conditioning models are supplied with an interface to enable the cooler to be controlled from an external location, using a Building Management System.

BACnet

Optional on CW-80, CW-80S, and CW-80 Twin

Building Automation and Control Network communication protocol is available on all CW-80 models.

MagIQcool™ controller

Standard with “H” Models

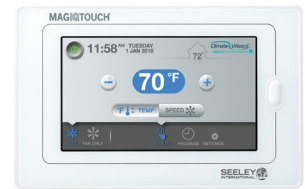
- Wall controller and a 65.6ft plugged control cable, factory supplied
- Can be configured for thermostatically controlled VAV (variable air volume) cooling or constant volume cooling
- Configured to respond to BMS start-stop inputs applied at the unit controller
- Can be replaced by direct BMS inputs applied directly to the unit mounted control board



MagIQtouch® controller

Optional with CW3

- Easy operating process due to in-built Installation Wizard
- Each cooler comes supplied with 65.6ft wiring loom
- Option to extend this up to a maximum length of 131.2ft
- Operate up to 60 coolers (total loom length must be 1,640.4ft from a single MagIQtouch controller, using optional Link Module and wiring loom-no special controllers required)



MagIQtouch® BMS Industrial Controllers MS1 & M1

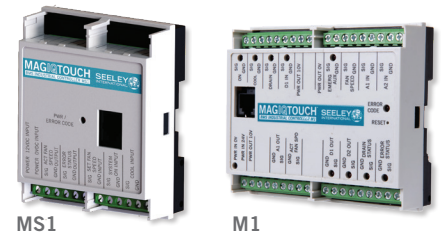
Optional with CW3

MS1

- Optional 12Vdc power supply
- 65ft communication cable
- Operate up to 60 coolers using link modules

M1

- Optional 24Vdc power supply
- 65ft communication cable
- 1 M1 controller per cooler



Accessories

Optional with CW3

External Air Sensor

Intuitively optimizes water and energy usage based on outside ambient conditions and displays current outside temperature.

Sensing module automatically drains the water tank when temperature nears freezing.

Internal Air Sensor

A remote temperature and humidity sensing module. Enables the MagIQtouch® Controller to be mounted in a convenient location (e.g. control room or living area), while still sensing air from the conditioned space.



Technical specifications

	Climate Wizard		
	CW-H15	CW-80	CW-80 Twin
Nominal cooling capacity*	82,000 BTU/h	475,400 BTU/h**	950,800 BTU/h**
Rated airflow	2,330 CFM – at 0.60 IWG external static pressure	13,560 CFM at 0.4 IWG external static pressure	27,120 CFM at 0.4 IWG external static pressure
Max. external static pressure	0.86 IWG	1.12 IWG	1.12 IWG
Max. inlet air temperature	131°F	122 °F	122 °F
Power requirement	1.8 kW	10.0 kW at rated airflow	20 kW at rated airflow
Electrical supply	1-phase, 200-240 V, 60 Hz 3-phase, 440-480 V, 60 Hz 3-phase, 200-240 V, 60 Hz	3-phase, 440-480 V, 60 Hz	3-phase, 440-480 V, 60 Hz
Water supply	5.3 gpm delivered at 15 psi min, 115 psi max (External in-line filtration recommended)	12 gpm delivered at 12 psi min, 116 psi max (External in-line filtration recommended)	24 gpm delivered at 12 psi min, 116 psi max (External in-line filtration recommended)
Water consumption	15 g/h	86 g/h	172 g/h
Supply air configuration	Side discharge	Side or top discharge	Top discharge
Supply fans	Backward curved centrifugal fan with direct coupled EC motor	2 x backward curved centrifugal fan with direct coupled EC motor	4 x backward curved centrifugal fan with direct coupled EC motor
Exhaust fans	n/a	4 x backward curved centrifugal fan with direct coupled EC motor	8 x backward curved centrifugal fan with direct coupled EC motor
Pump	Water circulation pump	Water circulation pump	Water circulation pump
Water management	Low voltage catalytic chlorinator and salinity probe	Catalytic chlorinator and salinity probe	Catalytic chlorinator and salinity probe
Drain valve	Low voltage, vertical, electric drive	Low voltage, vertical, electric drive	Low voltage, vertical, electric drive
Heat exchanger core	3 x Climate Wizard patented counter-flow heat exchanger cores	16 x Climate Wizard patented counter-flow heat exchanger cores	32 x Climate Wizard patented counter-flow heat exchanger cores
Air filtration	4 x MERV 10 pleated disposable filters	16 x MERV 8 pleated washable filters with metal frames	32 x MERV 8 pleated washable filters with metal frames
Water reservoir	One piece, moulded polymer, 17.2 gal	One piece, moulded polymer, 48 gal	2 x one piece, moulded polymer, 48 gal
Dimensions	91.7" (L) x 71.9" (W) x 50.6" (H)	Side Discharge: 176" (L) x 101" (W) x 139" (H) Top Discharge: 118" (L) x 101" (W) x 165" (H)	237" (L) x 101" (W) x 166" (H)
Shipping weight	705 lb	4,410 lb	8,620 lb
Operating weight	715 Lb	5,950 lb	11,730 lb (2 x 5950lb)
Controller options	Wall controller, BMS interface	BMS interface, BACnet (optional)	BMS interface, BACnet (optional)

Note: specifications subject to change. *Tested in accordance with ASHRAE 143 conditions of 100.4 °F db / 69.8 °F wb. Stand alone cooling capacity may be lower, depending on application. **Temperature data from field measurements.

Technical specifications

	Climate Wizard Supercool			
	CW-3	CW-H15S Plus	CW-H15S	CW-80S
Nominal cooling capacity*	43,300 BTU/h	135,500 BTU/h	93,800 BTU/h	532,700 BTU/h**
Rated airflow	2,750 CFM at 0.60 IWG external static pressure	3,390 CFM at 0.32 IWG external static pressure	2,330 CFM - at 0.52 IWG external static pressure	13,560 CFM at 0.40 IWG external static pressure
Max. external static pressure	0.62 IWG	0.62 IWG	0.78 IWG	1.12 IWG
Max. inlet air temperature	122 °F	131 °F	131 °F	122 °F
Power requirement	1.75 kW	2.2 kW	1.8 kW	11.8 kW at rated airflow
Electrical supply	1-phase, 200-240 V, 60 Hz	1-phase, 200-240 V, 60 Hz 3-phase, 440-480 V, 60 Hz 3-phase, 200-240 V, 60 Hz	1-phase, 200-240 V, 60 Hz 3-phase, 440-480 V, 60 Hz 3-phase, 200-240 V, 60 Hz	3-phase, 440-480 V, 60 Hz
Water supply	5.3 gpm delivered at 15 psi min, 115 psi max (External in-line filtration recommended)	5.3 gpm delivered at 15 psi min, 115 psi max (External in-line filtration recommended)	5.3 gpm delivered at 15 psi min, 115 psi max (External in-line filtration recommended)	12 gpm delivered at 12 psi min, 116 psi max (External in-line filtration recommended)
Water consumption	16 g/h	16 g/h	19 g/h	114 g/h
Supply air configuration	Bottom discharge	Side discharge	Side discharge	Side discharge
Supply fans	1x 15-¾" Axial forward curve with direct coupled EC motor	Backward curved centrifugal fan with direct coupled EC motor	Backward curved centrifugal fan with direct coupled EC motor	2 x backward curved centrifugal fan with direct coupled EC motor
Exhaust fans	1x 15" Centrifugal backward curve with direct coupled EC motor	n/a	n/a	4 x backward curved centrifugal fan with direct coupled EC motor
Pump	Water circulation pump	Water circulation pump	Water circulation pump	Water circulation pump
Water management	Low voltage catalytic chlorinator and salinity probe	Low voltage catalytic chlorinator and salinity probe	Low voltage catalytic chlorinator and salinity probe	Catalytic chlorinator and salinity probe
Drain valve	12 VDC, vertical, electric drive	Low voltage, vertical, electric drive	Low voltage, vertical, electric drive	Low voltage, vertical, electric drive
Heat exchanger core	Indirect: 8x Micro-Core™ Direct: 8x Chillcel pads	3 x Climate Wizard patented counter-flow heat exchanger cores	3 x Climate Wizard patented counter-flow heat exchanger cores	16 x Climate Wizard patented counter-flow heat exchanger cores
Air filtration	x8 MERV 8 washable filters	4 x MERV 10 pleated disposable filters	4 x MERV 10 pleated disposable filters	16 x MERV 8 pleated washable filters with metal frames
Water reservoir	One piece, moulded polymer, 7.9 gal	One piece, moulded polymer, 17.2 gal	One piece, moulded polymer, 17.2 gal	One piece, moulded polymer, 48 gal
Dimensions	45½" (L) x 45½" (W) x 40" (H)	91.7" (L) x 71.9" (W) x 50.6" (H)	91.7" (L) x 71.9" (W) x 50.6" (H)	176" (L) x 101" (W) x 139" (H)
Shipping weight	460 lb	740 lb	740 lb	4,630 lb
Operating weight	530 lb	750 lb	750 lb	6,280 lb
Controller options	Wall controller, MagIQtouch (optional)	Wall controller, BMS interface^	Wall controller, BMS interface^	BMS interface, BACnet (optional)

Note: specifications subject to change. *Tested in accordance with ASHRAE 143 conditions of 100.4 °F db / 69.8 °F wb. Stand alone cooling capacity may be lower, depending on application. ^ CW-H15 Supercool and Supercool Plus requires additional supercool section to be externally controlled by installing contractor. **Temperature data from field measurements.



BREEZAIR

Ducted Evaporative Air Conditioning

CLIMATE WIZARD

Indirect Evaporative Air Conditioning

CONVAIR

Evaporative Air Conditioning

DUALCOOL

Dual & Direct Evaporative Air Conditioning

COILCOOL

Pre-Cooling Products

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Information in this brochure was correct at the time of preparation. E & OE