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:

- World leading climate control solutions
- Melbourne Design Awards
- Sydney Design Awards
- Innovative Companies 2016
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 costs**.*

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

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 design and engineering configurations

- Ideal for use as a DOAS (dedicated outdoor air system), data centres 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

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

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#

Australian designed and made

- Designed for easy maintenance
  - Easy access to spare parts
  - After sales support

---

*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**  
- 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-P15**  
- EER of up to 43  
- Up to 83,600 BTU/h of cooling capacity in outside air pre-cooling applications  
- Up to 2,440 CFM supply air

**CW-80**  
- 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**  
- 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**  
- 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**  
- 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

**CW-80S**  
- 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

Note: Nominal cooling capacity is based on design conditions of 100.4 °F db / 69.8 °F wb. Stand alone cooling capacity may be lower, depending on application.
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

100% hot outside air enters dry channels
100.4°F DB, 69.8°F WB

Warm moist exhaust air discharged from wet channels
(45% of intake airflow)

Exhaust air pushed back through wet channels
(45% of intake airflow)

100% fresh, cool, supply air pushed into the building from dry channels
(55% of intake airflow)
68.5°F DB, 58.6°F WB
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

Data centre cooling
Climate Wizard delivers the right indoor climate and achieves outstanding PUE
Design and performance features

UV-resistant polymer shell and structure
- For withstanding extreme weather conditions
- Tapered shape for less obtrusive roof profile

Integrated filter system
- Integrated air filtration system with options for disposable or washable pleated panel filters
- Replaceable pleated panel filters come as standard

Simple installation
- Integral mounting feet
- Easy crane lifting points
- Curb-mount or frame-mount installation options

Electronic control module
- Advanced electronics programmed for maximum efficiency
- Controls unit operation to minimise water consumption and maximise efficiency
- Can be configured to accept external BMS system inputs to control system operation (while retaining control of water management and system efficiency)
- Smart, reliable, durable

Water management system
- Custom designed water management system minimises water consumption and maximises cleanliness
- Continuously monitors and controls the water salinity level in the reservoir
- Controls water cleanliness using a factory installed electro-chlorinator
- Manages water distribution for minimum water consumption and maximum cooling efficiency
- Drains the water system during prolonged idle periods
- Alarms if low water levels are detected

Tornado® drain pump
- Part of the water management system
- Controlled to manage water quality and maximise system efficiency
- Drains the reservoir during prolonged idle periods
Indirect heat exchange core
- Patented Climate Wizard counter-flow heat exchanger
- Uses indirect evaporative cooling to keep added moisture separate from the supply air stream
- Designed for long service life and consistent performance
- Provides maximum efficiency

Duct connection
- Duct connection for economy mode, return air path

Supply and exhaust air fans and electric motors
- High efficiency inverter drive fan motors
- Sickle-bladed, airfoil profiled impellers with directly coupled inverter motors
- Quiet, vibration free operation

Duct adaptor and post rotation guide

Water distributor
- The water distributor delivers a calibrated volume of water to the counter-flow heat exchanger
- The system uses tried and tested technology, developed over many years by Seeley International
- Designed to prevent clogging and evenly water the direct evaporative media

Indirect heat exchange core

Supply air pressure damper
- Regulates air pressure in the discharge plenum
- Used to control exhaust flow in the wet channels
- Provides simple, positive capacity control

Filter system
- Intake air is filtered through replaceable pleated filters
- The assembly includes:
  - a safety screen to protect the fan
  - a cover to minimise intrusion of rain

Cabinetry
- Powder coated, marine grade aluminium
- Weather proof and corrosion resistant
- Mechanical fasteners are stainless steel or aluminium

Climate Wizard Supercool
CW-H15S, CW-H15S Plus and CW-80S models available

With Climate Wizard Supercool, the moisture content can be fine-tuned to specifications, required for different applications, from data centres to wineries.

Chillcel® high efficiency evaporative pad
- High efficiency, direct evaporative cooling pad
- Produces an ultra-low leaving air temperature with minimal additional moisture
- Designed to maximise the space cooling capacity of Climate Wizard Supercool
- Increases supply airflow

Drip tray
- Part of the independent water collection system for the direct evaporative section
- Corrosion free and self-draining

Water distributor
- The water distributor delivers a calibrated volume of water to efficiently supercool the unit’s leaving air
- A dedicated pump and water distributor are used to independently water the direct evaporative media to maximise versatility
- The system uses tried and tested technology, developed over many years by Seeley International
- Designed to prevent clogging and evenly water the direct evaporative media
Performance comparison

Climate Wizard vs refrigerated cooling as temperature rises

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. And, no matter how hot it gets outside, 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.

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 climatewizard.com/calculator
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.

Wall 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 (building management system) start-stop inputs applied at the unit controller
- Can be replaced by direct BMS inputs applied directly to the unit mounted control board

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.

CW-P15 controller options

MagIQcool™ controller
Standard with CW-P15
- Operate one cooler from an easy to use, wall mounted thermostat controller
- The controller comes with 65.6ft wiring loom
- Option to extend this up to a maximum length of 131.2ft

Switch plate controller
Optional with CW-P15
- Operate one cooler from an easy to use switch plate
- The switch plate comes with 65.6ft wiring loom
- Option to extend this up to a maximum length of 131.2ft
Optional with CW-P15

Advanced touch screen MagIQtouch® controller
With intuitive user/installer navigation

- Energy saving mode
  When an external air sensor is installed, it will work with the MagIQtouch controller to add additional benefits to thermostatic mode. The pump will automatically be turned off based on the external ambient temperature.

- Pin access
  Pin access is available for competent service personnel to make system modifications.

- Modbus capable
- 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

Optional MagIQtouch extras

- Link module
  Allows connection to additional coolers and sensor into the system using RJ 6 way communication cables.

- External air sensor
  - Displays current outside temperature
  - Intuitively optimises water and energy usage based on outside ambient conditions
  - Extends the life of your air conditioner by automatically draining the water tank when temperature nears freezing

- Remote temperature sensor
  - A remote temperature and humidity sensing module
  - Enables the MagIQtouch controller to be mounted in a convenient location (e.g. control room), while still sensing air from the conditioned space
## Technical Specifications

<table>
<thead>
<tr>
<th></th>
<th><strong>Climate Wizard</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>CW-H15</strong></td>
</tr>
<tr>
<td><strong>Nominal cooling capacity</strong></td>
<td>82,000 BTU/h</td>
</tr>
<tr>
<td><strong>Rated airflow</strong></td>
<td>2,330 CFM – at 0.60 IWG</td>
</tr>
<tr>
<td><strong>Max. external static pressure</strong></td>
<td>0.86 IWG</td>
</tr>
<tr>
<td><strong>Max. inlet air temperature</strong></td>
<td>130°F</td>
</tr>
<tr>
<td><strong>Power requirement</strong></td>
<td>1.8 kW</td>
</tr>
<tr>
<td><strong>Electrical supply</strong></td>
<td>1-phase, 200-240 V, 60 Hz</td>
</tr>
<tr>
<td><strong>Water supply</strong></td>
<td>5.3 gpm delivered at 15 psi min, 115 psi max (External in-line filtration recommended)</td>
</tr>
<tr>
<td><strong>Water consumption</strong></td>
<td>15 g/h</td>
</tr>
<tr>
<td><strong>Supply air configuration</strong></td>
<td>Side discharge</td>
</tr>
<tr>
<td><strong>Supply fans</strong></td>
<td>Backward curved centrifugal fan with direct coupled EC motor</td>
</tr>
<tr>
<td><strong>Exhaust fans</strong></td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Pump</strong></td>
<td>Water circulation pump</td>
</tr>
<tr>
<td><strong>Water management</strong></td>
<td>Low voltage catalytic chlorinator and salinity probe</td>
</tr>
<tr>
<td><strong>Drain valve</strong></td>
<td>Low voltage, vertical, electric drive</td>
</tr>
<tr>
<td><strong>Heat exchanger core</strong></td>
<td>3 x Climate Wizard patented counter-flow heat exchanger cores</td>
</tr>
<tr>
<td><strong>Air filtration</strong></td>
<td>G4 pleated washable filters with metal frames</td>
</tr>
<tr>
<td><strong>Water reservoir</strong></td>
<td>One piece, moulded polymer, 17 gal</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>91.7” (L) x 71.9” (W) x 50.6” (H)</td>
</tr>
<tr>
<td><strong>Shipping weight</strong></td>
<td>705 lb</td>
</tr>
<tr>
<td><strong>Operating weight</strong></td>
<td>716 Lb</td>
</tr>
<tr>
<td><strong>Controller options</strong></td>
<td>Wall controller, BMS interface</td>
</tr>
</tbody>
</table>

*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.*
# Technical specifications

<table>
<thead>
<tr>
<th></th>
<th>CW-80</th>
<th>CW-80 Twin</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nominal cooling capacity</strong>*</td>
<td>475,400 BTU/h**</td>
<td>950,800 BTU/h**</td>
</tr>
<tr>
<td><strong>Rated airflow</strong></td>
<td>13,560 CFM at 0.4 IWG external static pressure</td>
<td>27,120 CFM at 0.4 IWG external static pressure</td>
</tr>
<tr>
<td><strong>Max. external static pressure</strong></td>
<td>1 IWG</td>
<td>1 IWG</td>
</tr>
<tr>
<td><strong>Max. inlet air temperature</strong></td>
<td>130 °F</td>
<td>130 °F</td>
</tr>
<tr>
<td><strong>Power requirement</strong></td>
<td>10.0 kW at rated airflow</td>
<td>19.9 kW at rated airflow</td>
</tr>
<tr>
<td><strong>Electrical supply</strong></td>
<td>3-phase, 440-480 V, 60 Hz</td>
<td>3-phase, 440-480 V, 60 Hz</td>
</tr>
<tr>
<td><strong>Water supply</strong></td>
<td>12 gpm delivered at 12 psi min, 116 psi max (External in-line filtration recommended)</td>
<td>24 gpm delivered at 12 psi min, 116 psi max (External in-line filtration recommended)</td>
</tr>
<tr>
<td><strong>Water consumption</strong></td>
<td>86 g/h</td>
<td>172 g/h</td>
</tr>
<tr>
<td><strong>Supply air configuration</strong></td>
<td>Side or top discharge</td>
<td>Top discharge</td>
</tr>
<tr>
<td><strong>Supply fans</strong></td>
<td>2 x backward curved centrifugal fan with direct coupled EC motor</td>
<td>4 x backward curved centrifugal fan with direct coupled EC motor</td>
</tr>
<tr>
<td><strong>Exhaust fans</strong></td>
<td>4 x backward curved centrifugal fan with direct coupled EC motor</td>
<td>8 x backward curved centrifugal fan with direct coupled EC motor</td>
</tr>
<tr>
<td><strong>Pump</strong></td>
<td>Water circulation pump</td>
<td>Water circulation pump</td>
</tr>
<tr>
<td><strong>Water management</strong></td>
<td>Low voltage catalytic chlorinator and salinity probe</td>
<td>Low voltage catalytic chlorinator and salinity probe</td>
</tr>
<tr>
<td><strong>Drain valve</strong></td>
<td>Low voltage, vertical, electric drive</td>
<td>Low voltage, vertical, electric drive</td>
</tr>
<tr>
<td><strong>Heat exchanger core</strong></td>
<td>16 x Climate Wizard patented counter-flow heat exchanger cores</td>
<td>32 x Climate Wizard patented counter-flow heat exchanger cores</td>
</tr>
<tr>
<td><strong>Air filtration</strong></td>
<td>16 x G4 pleated washable filters with metal frames, size 25” x 25” x 2”</td>
<td>32 x G4 pleated washable filters with metal frames, size 25” x 25” x 2”</td>
</tr>
<tr>
<td><strong>Water reservoir</strong></td>
<td>One piece, moulded polymer, 48 gal</td>
<td>2 x one piece, moulded polymer, 48 gal</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>176” (L) x 101” (W) x 139” (H)</td>
<td>237” (L) x 101” (W) x 166” (H)</td>
</tr>
<tr>
<td><strong>Shipping weight</strong></td>
<td>4,410 lb</td>
<td>8,620 lb</td>
</tr>
<tr>
<td><strong>Operating weight</strong></td>
<td>5,950 lb</td>
<td>11,730 lb</td>
</tr>
<tr>
<td><strong>Controller options</strong></td>
<td>BMS interface, BACnet (optional)</td>
<td>BMS interface, BACnet (optional)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Climate Wizard Supercool</th>
<th>CW-H15S Plus</th>
<th>CW-H15S</th>
<th>CW-80S</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nominal cooling capacity</strong></td>
<td>135,500 BTU/h</td>
<td>93,800 BTU/h</td>
<td>532,700 BTU/h**</td>
</tr>
<tr>
<td><strong>Rated airflow</strong></td>
<td>3,390 CFM at 0.32 IWG</td>
<td>2,330 CFM at 0.52 IWG</td>
<td>13,560 CFM at 0.40 IWG</td>
</tr>
<tr>
<td><strong>Max. external static pressure</strong></td>
<td>0.62 IWG</td>
<td>0.78 IWG</td>
<td>1 IWG</td>
</tr>
<tr>
<td><strong>Max. inlet air temperature</strong></td>
<td>130 °F</td>
<td>130 °F</td>
<td>130 °F</td>
</tr>
<tr>
<td><strong>Power requirement</strong></td>
<td>2.2 kW</td>
<td>1.8 kW</td>
<td>11.8 kW at rated airflow</td>
</tr>
<tr>
<td><strong>Electrical supply</strong></td>
<td>1-phase, 200-240 V, 60 Hz</td>
<td>1-phase, 200-240 V, 60 Hz</td>
<td>3-phase, 440-480 V, 60 Hz</td>
</tr>
<tr>
<td><strong>Water supply</strong></td>
<td>5.3 gpm delivered at 15 psi min, 115 psi max (External in-line filtration recommended)</td>
<td>5.3 gpm delivered at 15 psi min, 115 psi max (External in-line filtration recommended)</td>
<td>12 gpm delivered at 12 psi min, 116 psi max (External in-line filtration recommended)</td>
</tr>
<tr>
<td><strong>Water consumption</strong></td>
<td>16 g/h</td>
<td>19 g/h</td>
<td>114 g/h</td>
</tr>
<tr>
<td><strong>Supply air configuration</strong></td>
<td>Side discharge</td>
<td>Side discharge</td>
<td>Side discharge</td>
</tr>
<tr>
<td><strong>Supply fans</strong></td>
<td>Backward curved centrifugal fan with direct coupled EC motor</td>
<td>Backward curved centrifugal fan with direct coupled EC motor</td>
<td>2 x backward curved centrifugal fan with direct coupled EC motor</td>
</tr>
<tr>
<td><strong>Exhaust fans</strong></td>
<td>n/a</td>
<td>n/a</td>
<td>4 x backward curved centrifugal fan with direct coupled EC motor</td>
</tr>
<tr>
<td><strong>Pump</strong></td>
<td>Water circulation pump</td>
<td>Water circulation pump</td>
<td>Water circulation pump</td>
</tr>
<tr>
<td><strong>Water management</strong></td>
<td>Low voltage catalytic chlorinator and salinity probe</td>
<td>Low voltage catalytic chlorinator and salinity probe</td>
<td>Low voltage catalytic chlorinator and salinity probe</td>
</tr>
<tr>
<td><strong>Drain valve</strong></td>
<td>Low voltage, vertical, electric drive</td>
<td>Low voltage, vertical, electric drive</td>
<td>Low voltage, vertical, electric drive</td>
</tr>
<tr>
<td><strong>Heat exchanger core</strong></td>
<td>3 x Climate Wizard patented counter-flow heat exchanger cores</td>
<td>3 x Climate Wizard patented counter-flow heat exchanger cores</td>
<td>16 x Climate Wizard patented counter-flow heat exchanger cores</td>
</tr>
<tr>
<td><strong>Air filtration</strong></td>
<td>G4 pleated washable filters with metal frames</td>
<td>G4 pleated washable filters with metal frames</td>
<td>16 x G4 pleated washable filters with metal frames size 25” x 25” x 2”</td>
</tr>
<tr>
<td><strong>Water reservoir</strong></td>
<td>One piece, moulded polymer, 17 gal</td>
<td>One piece, moulded polymer, 17 gal</td>
<td>One piece, moulded polymer, 48 gal</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>91.7” (L) x 71.9” (W) x 50.6” (H)</td>
<td>91.7” (L) x 71.9” (W) x 50.6” (H)</td>
<td>176” (L) x 101” (W) x 139” (H)</td>
</tr>
<tr>
<td><strong>Shipping weight</strong></td>
<td>740 lb</td>
<td>740 lb</td>
<td>4,630 lb</td>
</tr>
<tr>
<td><strong>Operating weight</strong></td>
<td>750 lb</td>
<td>750 lb</td>
<td>6,280 lb</td>
</tr>
<tr>
<td><strong>Controller options</strong></td>
<td>Wall controller, BMS interface^</td>
<td>Wall controller, BMS interface^</td>
<td>BMS interface, BACnet (optional)</td>
</tr>
</tbody>
</table>

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
Portable Air Conditioning

COOLERADO
Indirect Evaporative Air Conditioning

climatewizard.com
ussales@seeleyinternational.com