

Cooling Capacity Review - Evaporative Coolers

This technical data sheet was first released in 2014, comparing published cooling capacity versus Meridian Laboratory tested cooling capacity, across a select range of evaporative cooler brands and models.

After the test results were brought to their attention, **published cooling capacity was withdrawn by Brivis and Bonaire in 2015¹**.

Brivis and Bonaire have continued to sell their products with no published cooling capacity specifications.

With claimed cooling capacities no longer publicly available, the Meridian Laboratory has tested a select number of evaporative cooler models from 2014 to 2022, with the results as follows:

Meridian laboratory test results²

| Brands & Models | Cooling Capacity (kW) |
|-----------------|-----------------------------|
| Breezair | Extraordinaire XTR5000 17.4 |
| | Supercool EXS220 15.1 |
| Braemar | SuperStealth LCQV550 14.3 |
| | Paradigm LCQ550 14.1 |
| | Evolution LPQV550 13.2 |
| Coolair | CPQ1100 13.3 |
| Brivis | Promina P76 12.1 |
| | Contour L76 10.5 |
| | Advance F86D 9.4 |
| Bonaire | SVS1250 7.1 |
| | SVS1100 6.4 |
| | SVS950 6.4 |



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Choice of Coolers Tested

Highest capacity models of Bonaire and Brivis were tested against a range of Breezair, Braemar and Coolair models by the Meridian Laboratory.

This enables consumers to **compare** the **cooling capacity** of different models, claimed to be high capacity units, to make **informed decisions** for their home **comfort**, using **actual, deliverable KILOWATTS of cooling**.

1. Claimed cooling capacities were calculated to industry standards in accordance with AS2913 - 2000 - Source: BonaireCoolingBrochureOct2014Final-evap.pdf
Claimed cooling capacities were calculated to industry standards in accordance with AS2913 - 2000 - Source: brivis_brochure_evaporative_cooling_2014.pdf
2. Correct at time of publication. The above data was drawn from Meridian Test Laboratory's test analysis from 2016 – 2019 . The testing was performed by a NATA accredited laboratory to the requirements of the Australian Standard AS2913-2000 "Evaporative Air Conditioning Equipment."

Dealer

Information presented in this document has been compiled by Seeley International from independent testing reports provided to the company by the NATA Meridian Test laboratory.
Cat No S0061 DEALER REV C (1025) AUS



MERIDIAN TEST LABORATORY

Technical Data Sheet

Laboratory overview

The Meridian Psychrometric Test Laboratory is suitable for conducting performance and development testing on a range of cooling and heating products including direct and indirect evaporative coolers, refrigerated air conditioners and heat pumps.

The laboratory has two test chambers with independent control of dry bulb and wet bulb temperatures, and three nozzle boxes that allow accurate measurement of a range of airflows. To enable testing of large evaporative coolers, the laboratory also has two desiccant dehumidifiers to extract additional moisture from the test chambers. The laboratory is fully PLC controlled with electronic measurement and data acquisition of all test results.

Appliance performance is calculated by measuring air conditions into and out of the appliance, airflow and power consumption.



Specifications

| | Test chamber 1 | Test chamber 2 |
|-----------------------|-------------------------|-------------------------|
| Chamber size | W:8m x L:6.5m x H:4m | W:5m x L:6.5m x H:4m |
| Dry bulb temperature | 0°C to 55°C | 0°C to 45°C |
| Dew point temperature | 0°C to 20°C | 8°C to 15°C |
| Temperature control | +/- 0.2°C | +/- 0.2°C |
| Airflow rate | 100 l/sec to 3000 l/sec | 100 l/sec to 1000 l/sec |

Seeley International is Australia's only air conditioning and heating manufacturer with a NATA accredited test laboratory.

Product testing capability

| Product | Test Standard |
|-------------------------------|--|
| Fan performance | ISO 5801 |
| Assembled evaporative coolers | AS 2913, ASHRAE 133 |
| Indirect evaporative coolers | ASHRAE 143 |
| Air conditioners & heat pumps | AS/NZS 3823.1.1, AS/NZS 3823.1.2 – Capacity 9 kW |

Test conditions

- Coolers tested as new and complete units as specified by Australian Standard AS2913-2000. Cooling capacity was not determined by testing separate components.
- Coolers tested at inlet conditions of 38°C dry bulb and 21°C wet bulb and cooling capacity calculated based on room temperature of 27.4°C as specified by Australian Standard AS2913-2000.
- Cooler Airflow tested at 80 Pa Duct Static Pressure as specified by Australian Standard AS2913-2000.
- All cooler pads pre-soaked before testing.

