



MERIDIAN TEST  
LABORATORY

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# Technical data sheet

## Cooling Capacity Review - Evaporative Coolers

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

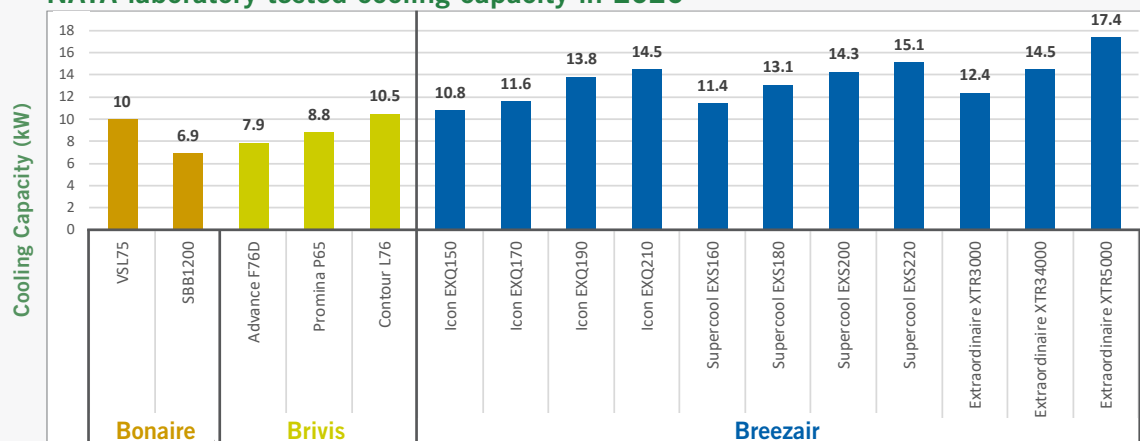
This sheet highlighted variations in manufacturer published cooling capacity versus tested cooling capacity, ranging from 27% to 66% by Brivis and Bonaire.

Following the release of this document, **published cooling capacity was withdrawn by Brivis and Bonaire in 2015.**<sup>1</sup>

Brivis and Bonaire continued to sell their products with no published cooling capacity specifications for the last 5 years.

With claimed cooling capacities no longer publicly available, the NATA Laboratory tested a selected number of Evaporative Cooler models in 2020, with the results as follows:

### NATA laboratory tested cooling capacity in 2020<sup>2</sup>

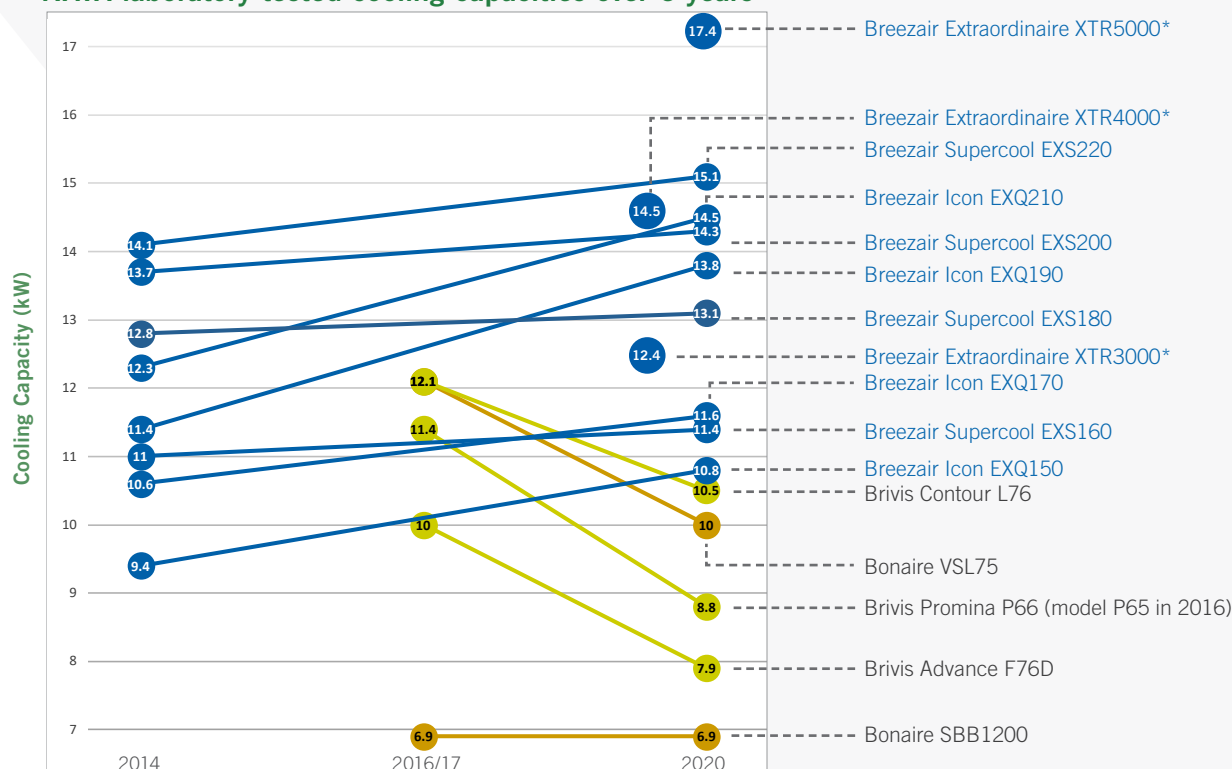


### Choice of coolers tested

Highest capacity models of Bonaire and Brivis were tested against the full range of Breezair models by the NATA 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.

### NATA laboratory tested cooling capacities over 6 years



\*XTR series launched in 2019, therefore there is no historical cooling capacity data.

All Breezair models have Inverter technology motors.



<sup>1</sup>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

<sup>2</sup>Correct at time of publication. The above data was drawn from Meridian Test Laboratory's test analysis. The testing was performed by a NATA accredited laboratory to the requirements of the Australian Standard AS2913-2000 "Evaporative Air Conditioning Equipment."



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# 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.

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



## Specifications

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

## Product testing capability

Product	Test Standard
Fan performance	ISO 5801
Assembled evaporative coolers	AS 2913, ASHRAE 133
Indirect evaporative coolers	ASHRAE 143
Air conditioners and 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.

