oceania
SOLUTIONS GROUP

Air Distribution Systems

Product Profile

BARCOL-AIR

Your projects, challenges and requirements are our focus. We have a dedicated team that can engineer tailored solutions for your commercial HVAC application.

Oceania Solutions Group is an Australian owned business that focuses on providing engineered HVAC solutions. We value the importance of relationships with our clients and partners. Our team enjoy collaborating and solving complex 'design and construct' projects for your business with our product solutions.

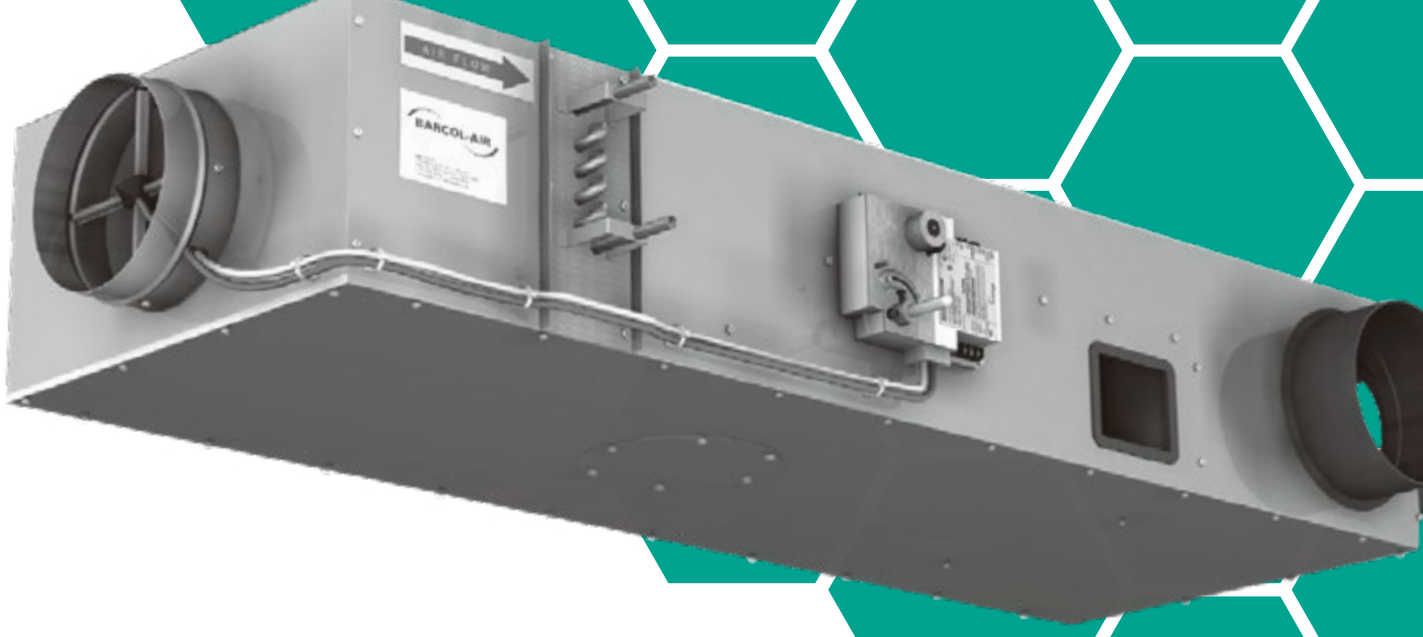
Oceania Solutions Group are proud of our extensive portfolio and experience within HVAC industry. From industrial applications through to commercial air conditioning installations for tropical and high humidity environments.

Operating throughout Australia, New Zealand and the South Pacific Islands, we provide engineered technical data and commercial support for a wide range of HVAC solutions.

Our experienced team of HVAC professionals work hand-in-hand with market leading suppliers of HVAC solutions and equipment.

With international accreditation from Eurovent, CTI, AHRI, TÜV and AMCA, our products are rigorously tested and certified, meeting Australian and New Zealand standards and regulations.

Partnering with trusted international suppliers, we are available to provide an engineered solution for your next project.



Introduction to Barcol-Air

From the beginning, Barcol-Air has specialised in designing and developing the perfect indoor thermal climate for commercial air conditioning systems. Working closely with clients, consultants, architects and research organisations, Barcol-Air seeks to create an indoor climate which offers an optimum in terms of comfort and energy efficiency.

Barcol-Air has grown both its reputation and global business operations, based on their expertise in commercial air conditioning systems and component design with a focus on advanced low energy systems, particularly:

- Variable and Constant Air Volume Systems (VAV/CAV)
- Chilled Beam Systems
- Chilled Ceiling Systems

The history of Barcol-Air

Barcol-Air's history dates back to 1932 when the BARBER COLMAN COMPANY (USA) started to develop central air conditioning, air distribution products and control systems.

In 1982 BARBER COLMAN USA, a leader in air conditioning systems and controls established Barcol-Air as their European subsidiary. From there, Barcol-Air have grown their capability and expanded their operations throughout the world with an ongoing commitment to excellence in air conditioning product and system design.

Single duct variable air volume systems

The performance of VAV terminals and their controls is critical to the performance of the overall VAV system. Barcol-Air VAV terminals are known for their leadership in this area and incorporate the following features:

- Pressure independent with Flo-Cross airflow sensor
- Single or double wall construction
- Airflow 100 to 15,000 m³/h
- Factory installed and calibrated digital actuators and controllers
- Optional hot water or electric heater
- Optional multiple air connectors

Induction variable air volume systems

The Barcol-Air Induction VAV System takes VAV energy savings and VAV room comfort to higher levels.

This is achieved by inducing room air back into the induction VAV terminal to mix the primary air. The amount of primary air and induced room air is controlled by the induction VAV terminal in response to the room cooling requirement.

Constant air volume control terminal

Constant volume terminals with system powered mechanical regulators are designed to maintain constant airflow, independent of the inlet static pressure without the use of a VAV controller/actuator. These terminals save commissioning time on site and are suitable either for supply or return air in new or refurbishment projects.

Round or rectangular casing types are available.

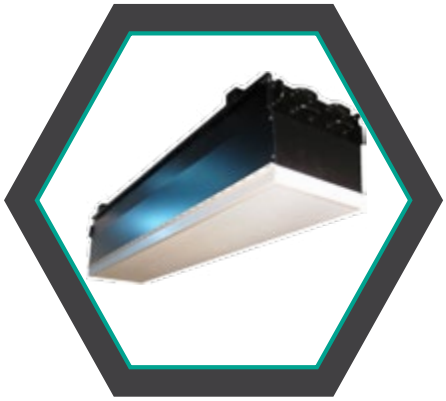
Features

- Self-regulating and pressure independent
- Operating pressure range from 100 to 1,000Pa
- Operating temperature range from -15 to 100°C
- Round connection for type NR
- Flange connection for type NM
- Either vertical or horizontal installation is possible
- Lower cost of assembly, installation and commissioning
- Easy balancing of the air distribution system
- Stainless steel units or anti-corrosion coatings are available

Barcol-Air Project: SQCOE Building Queensland

Active chilled beam systems

Barcol-Air active chilled beams integrate the primary air distribution function with a secondary air-water heat exchanger using a proprietary air nozzle technology to induce secondary room air into the unit and through the heat exchanger, before mixing with the primary air. The resulting mixture of primary air and induced cooled secondary room are then supplied to the room through the contoured diffusers which are designed to keep the air close to the ceiling using the Coanda effect. The units incorporate multiple primary air nozzles on each side of the unit to allow for the units airflow capacity and air discharge pattern to be adjusted.



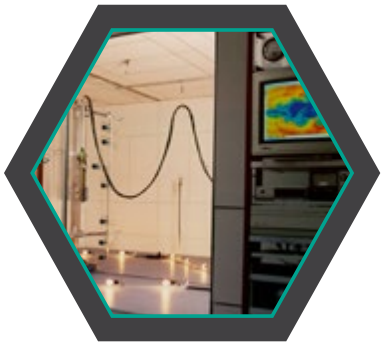
Passive chilled beam systems

Passive chilled beams are normally suspended above the ceiling and provide cooling by natural convection. They are sized to handle the majority of the sensible cooling loads. A separate primary air system is used to provide ventilation and humidity control.

Barcol-Air passive chilled beam systems are available for integration with the ceiling panels or for installation above the ceiling.

Chilled ceiling systems

Human comfort depends on the human body being in thermal balance with its surroundings. The chilled ceiling system introduces a new dimension to the heat exchange process with about 50% of the heat exchange with the chilled ceiling being bradiation. The net result is an overall feeling of more comfort and alertness.



Research and development

Research into improving our indoor environment with low energy systems and the development of new products are key to the ongoing development of Barcol-Air's leadership capability.

For a full understanding of the thermodynamics of our living environment, the most effective approach is to use full scale testing with room configurations and constructions identical to those in the real world. This is why Barcol-Air use full scale climate testing rooms that can accommodate actual size application mockups and simulate not only the indoor climate but the external climate and its effect on the building structure and the air conditioning system operation.

Barcol-Air testing facilities include:

Capacity test laboratory for testing:

- Chilled ceilings according to EN14240
- Active chilled beams according to EN15116
- Passive chilled beams according to EN14518
- Full scale mockup testing including environmental comfort testing (PMV and PPD) - according to ISO7730:
- VAV and CAV performance testing

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