



Company Profile

Specialist Energy Air Conditioning Systems



Introduction

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

The company has grown its reputation and worldwide operations based on their expertise in commercial air conditioning system and component design with emphasis on advanced low energy systems particularly:

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

History

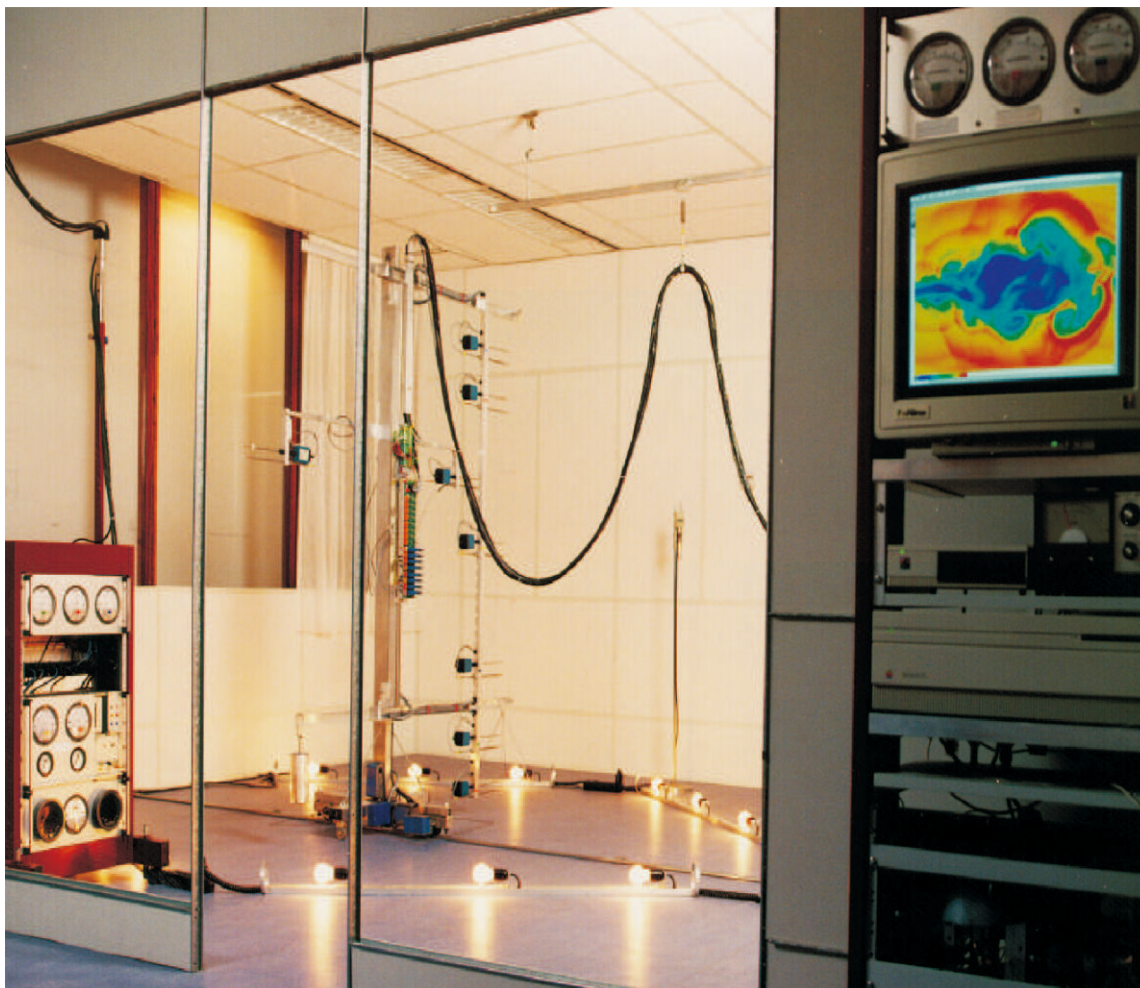
Barcol-Air's original dates back to 1932 when the BARBER COLMAN COMPANY (USA) started to develop central air conditioning air distribution products and control systems.



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

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.



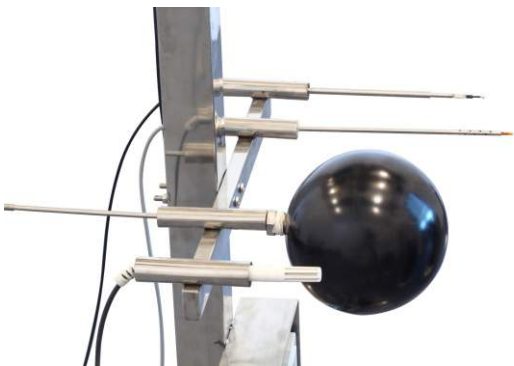
Full Scale Mockup Testing with Climate Test Rooms

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 those in the real world. This is why Barcol-Air uses 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.

Research and Development

Barcol-Air's test facilities allow for:

- Capacity test laboratory for testing:
 - Chilled ceilings according to EN 14240
 - Active chilled beams according to EN15116
 - Passive chilled beams according to EN14578
- Full scale mockup testing including environmental comfort testing (PMV and PPD) - according to NEN-EN-ISO7730
- VAV and CAV performance testing



Air Distribution Test Sensors



Full Scale Mockup Testing to specific job requirements

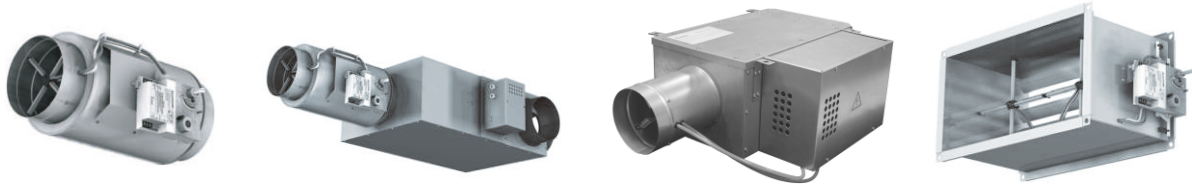


High Ceiling Mockup Testing Room

Single Duct Variable Air Volume Systems

The performance of a VAV terminal and its controls are critical to the performance of the overall VAV system and Barcol-Air's VAV terminals are known for their leadership in this area. Barcol-Air VAV terminals 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



N Series VAV Terminals

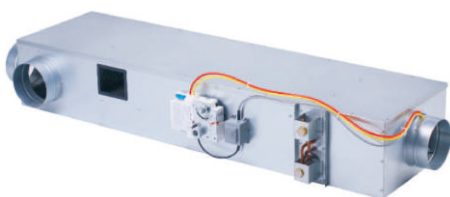
Induction Variable Air Volume Systems

Barcol-Air's 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.

Benefits of Induction VAV

- Capacity up to 200W/m² without losing comfort
- Cooling, heating and ventilation done by a single VAV terminal
- Pressure independent
- Optimum in comfort
- Induction without use of a fan
- No cold air dumping
- Energy conscious
- Compact in size
- Savings in primary ductwork
- low noise levels
- Maintenance free
- Standard VAV controller can be used
- High accurate Flo-Cross® air flow sensor



Mechanical Constant Air Volume Controllers

Constant volume terminals with system powered mechanical regulators are designed to maintain constant airflow, independent of the inlet static pressure without the use of electric controllers/actuators. These terminals save commissioning time on site and are suitable either for supply, return or exhaust air systems.

Round or rectangular casing types are available



Type NR



Type NM

Features

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



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 being by radiation. The net result is an overall feeling of more comfort and alertness.

Ceiling Panel Radiant Chilled Ceiling

Type: RCM



High Capacity Radiant Chilled Ceiling

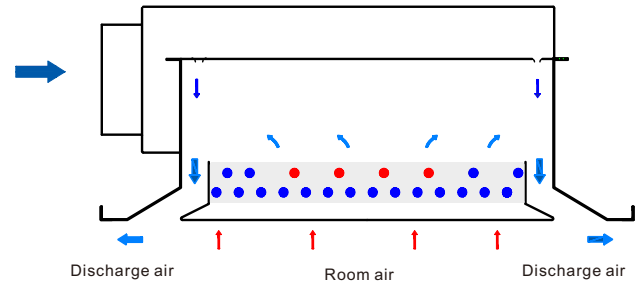
Type: RCH



Active Chilled Ceiling Systems

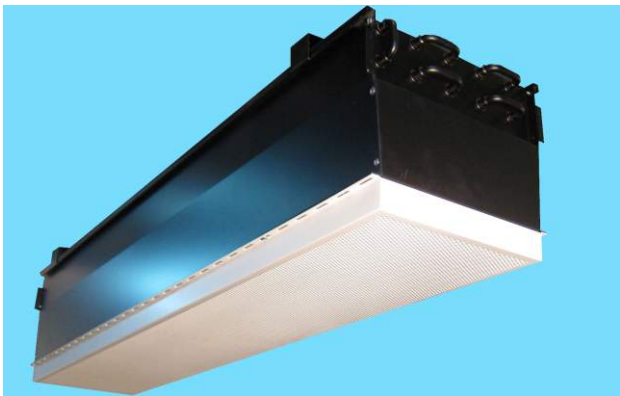


Type AIRFIT 300 & 600

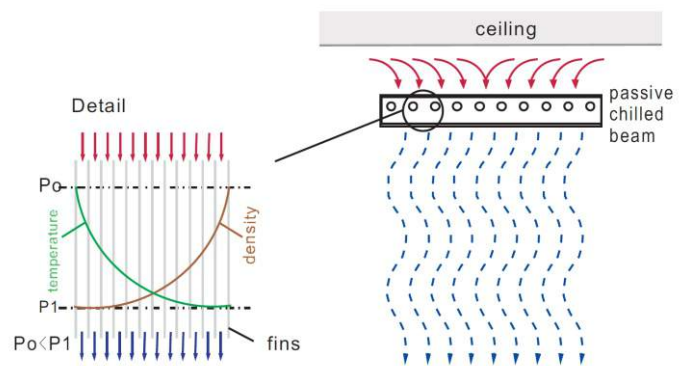


Barcol-Air active chilled beams integrate the primary air distribution function with a secondary air-water heat exchanger using a proprietary air nozzle technology to induce secondary room air into the unit and through the heat exchanger before mixing with the primary air. The resulting mixture of primary air and induced cooled secondary room air 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.

Passive Chilled Beam Systems



Type AIRFIT-P



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.



Diffusers



Type: PBS

- Perforated plate diffuser
- Airflow from 100 to 1000m³/h
- High induction ratio
- Internal sound attenuation



Type: VFT

- Swirl diffuser
- Airflow from 180 to 700m³/h
- High induction ratio
- Internal sound attenuation



Type: VFK

- Swirl diffuser
- Airflow from 50 to 200m³/h
- High induction ratio
- Internal sound attenuation



Type: CSV

- Linear diffuser
- Airflow from 28 to 1280m³/h
- High induction ratio
- Available with up to 8 slots
- Three direction airflow
- Designed for operation chilled ceiling systems



Type: CLW

- Linear diffuser
- Airflow from 36 to 1440m³/h
- Air pattern is adjustable
- Internal sound attenuation

Reference Projects



Tweeling toren, Amsterdam - The Netherlands



Nomura Bank, London - United Kingdom



Hoftoren, The Hague - The Netherlands



Intercontinental Hotel, Aqaba - Jordan



Kunlun Building, Beijing - China



USB Bank - Broadgated, London - United Kingdom

Reference Projects



Qtel Buiding, Doha - Qatar



Hyundai - HQ, Sydney - Australia



Bahrain International Insurance Tower



Bishop Square, London - United Kingdom



Financial Harbour, Manama - Bahrain



Science Park, Hongkong

Reference Projects



ABN - AMRO Bank, Amsterdam - The Netherlands



World Trade Centre, Amsterdam - The Netherlands



Media City, Dubai - United Arab Emirates



Klinikum, Weilmunster - Germany



Fund Head Quarters, Abu Dhabi - United Arab Emirates



Neuro 3D, Mulhouse - France

Reference Projects



Pearl River Tower China



Novel Plaza China



DBS China



New Energy Institute, Wuhan - China

