# ACDHUM

## Air Change Dehumidification Unit DX or Chilled Water

The ACDHUM range is designed to efficiently pre-condition the temperature and humidity of the building fresh air supply. The system is an ideal solution for situations where exhaust air cannot be recovered or used due to spill air contamination, building pressure requirements or the practical constraint of recovering exhaust air.

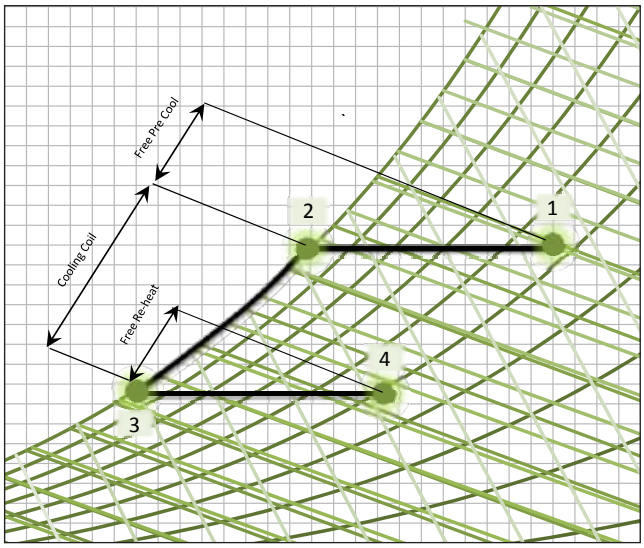

- Higher efficiency and superior humidity control than standard systems
- No return air required – 100% pressurisation
- Increased COP
- DX Units from 700-5000 L/s
- Chilled Water Units up to 6000 L/s
- Stacked Chilled Water Units up to 12000 L/s
- Multi award winning Australian made, internationally patented technology

**www.airchange.com.au**

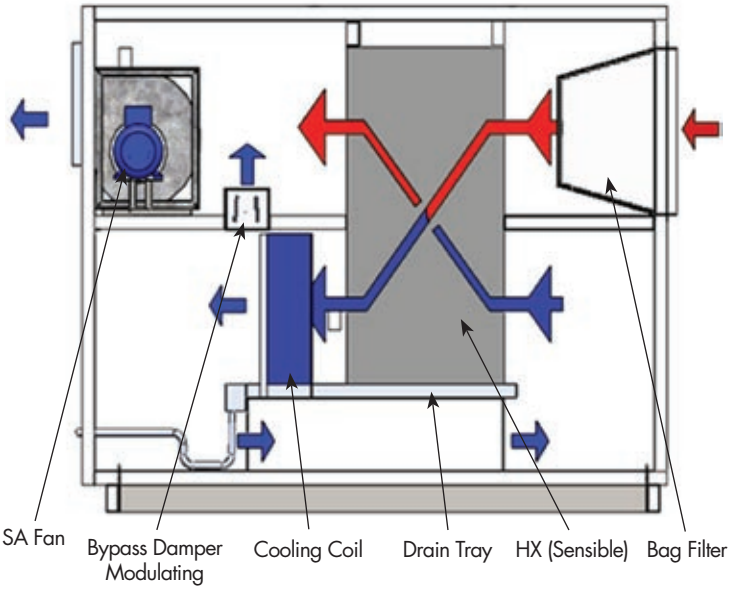
## ACDHUM – How it works

The ACDHUM system will cool and dehumidify hot and humid outside air to the room set point condition. Air is cooled and dehumidified as it passes through the air to air heat exchanger. The air is further cooled and dehumidified as it passes over the cooling coil before being directed back through the counter path of the heat exchanger to pre-cool the incoming outside air. This supply air is reheated close to room set point temperature as it passes back through the heat exchanger and its condition can be precisely trimmed via the bypass damper. There is only fan energy used to pre cool and reheat the supply air. Furthermore, by reducing the temperature differential between the supply air and the cooling coil, the COP of the unit is increased.

### Psychrometric Chart




### ACDHUM schematic




| Point | Location | Sydney | Brisbane | North Queensland | Adeilade | Melbourne | Darwin | Perth |
|---|---|---|---|---|---|---|---|---|
| 1. Outside Air | Tdb/Twb (oC) | 35.5/24 | 33.5/26 | 34.5/27.5 | 40/23 | 37.5/21.5 | 34.5/28 | 40/23 |
| 2. Air Off Heat Exchanger Cooling | Tdb/Twb (oC) | 25.5/21 | 23.5/23.5 | 25/25 | 29/20 | 26.5/18.5 | 27.5/25.5 | 29/20 |
| 3. Air Off Coil | Tdb/Twb (oC) | 13/13 | 13/13 | 13/13 | 13/13 | 13/13 | 13/13 | 13/13 |
| 4. Supply Air After Reheat | Tdb/Twb (oC) | 24/17 | 24/17 | 24/17 | 24/17 | 24/17 | 24/17 | 24/17 |

The ACDHUM is more effective and efficient at controlling humidity than a conventional air conditioning system which is primarily designed to control the space temperature. When the temperature set point is reached, a conventional system will cycle off regardless of the humidity level. The ACDHUM delivers outside air at room temperature and at the specified humidity so that the air conditioning system can be designed to only handle the building sensible heat load.

AIR CHANGE
THE STARS IN GREEN HVAC

Call our engineers to discuss your particular requirements

**Toll Free 1300 766 704 - www.airchange.com**

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**Multi Award Winning Technology**
**ARBS Industry Awards** "ESD Product" Winner 2010
**SEDA** "Green Globe" Winner 2002 & 2003
**AIRAH** "Excellence in HVAC" Winner 2003 (Qld) & 2006 (National)

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