

# ACDHUM

The ACDHUM - an energy efficient method  
to deliver precise control of temperature  
and humidity in an enclosed space



# ACDHUM

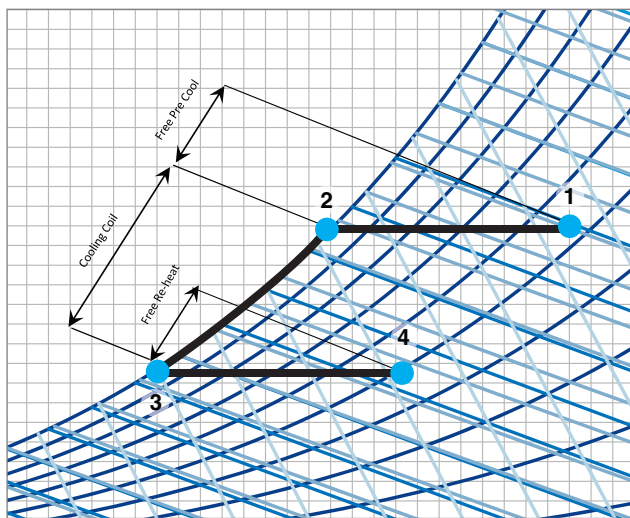
Humidity, whether generated by the introduction of outside air, infiltration or the building use leads to unpleasant mould formation if not correctly controlled.

Air conditioning is not the answer, it is temperature controlled and shuts down or reduces capacity when the room temperature reaches set point reducing its moisture control capacity.

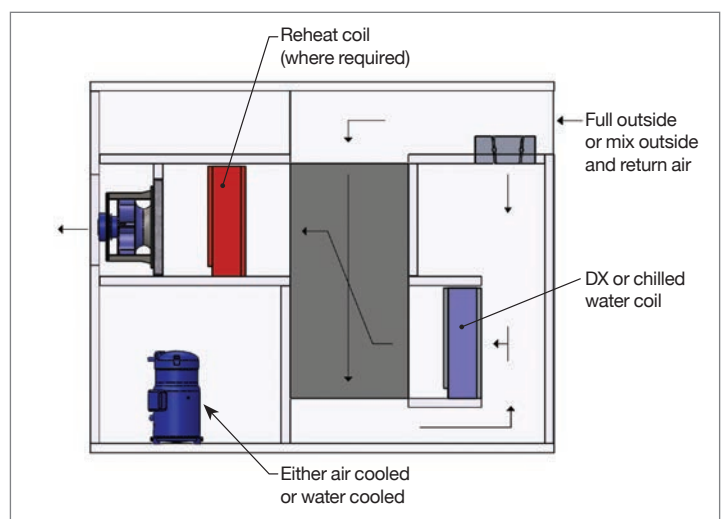
The alternative- run the air conditioning continuously to remove moisture, overcooling the space to the detriment of occupant comfort while consuming much more energy than is needed.

The ACDHUM cools, dehumidifies and reheats the air to the required temperature and humidity set point independently of the building air conditioning system, using heat exchange and waste heat to save energy.

## Psychrometric Chart



## ACDHUM schematic



## How it works

The ACDHUM is the most efficient and effective way to handle high latent loads.

Air is introduced into the ACDHUM and directed to a Z-I heat exchanger. The warm moist air is pre-cooled as it passes down through the I plate by the cold dehumidified air travelling back through the Z plate, reducing the energy to both cool and reheat the air to its set point condition.

When the outside air humidity is high, cooling in the I plate can cause the moisture in the air to condense where it is freely available to fall to the drain tray below.

After being pre-cooled (1-2), the air is directed over a DX evaporator or chilled water coil (2-3) to lower its temperature to the nominated dew point and then travels back through the heat exchanger to be reheated by the incoming warm moist air (3-4).

Depending on the supply air temperature required, the heat exchanger can account for 25-35% of the refrigeration work needed to cool the air while eliminating the need for energy to reheat the air before it is supplied to the space.



**Gold Coast University Hospital, QLD**  
**Consultant** SKM  
**Installation** Hastie Air Conditioning  
**13 various ACDHUM6-W, ACDHUM7-W & ACDHUM8-W**



**Aldi (various stores) QLD & NSW**  
**Consultant** DMA Professional Engineers



**Brisbane City Hall, QLD**  
**Consultant** EMF Griffiths  
**Installation** Siganto and Stacey  
**ACDHUM2-W & ACDHUM3-W**



**Coles, Cannon Hill, QLD**  
**Consultant** DMA Professional Engineers  
**Installation** Cool Air Solutions  
**ACDHUM2-D**

**Multi Award Winning Technology**

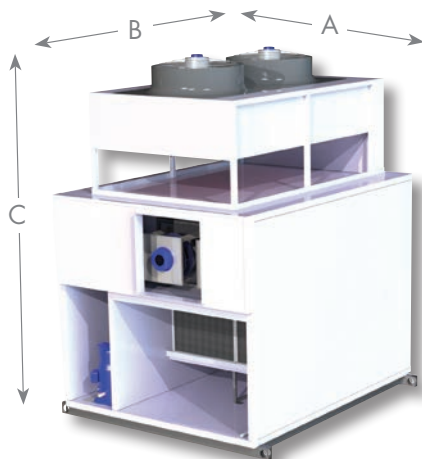
**AIRAH** "Excellence in Innovation" Winner 2013  
**AIRAH** "Excellence in Innovation" Winner 2012  
**ARBS Industry Awards** "ESD Product" Winner 2010



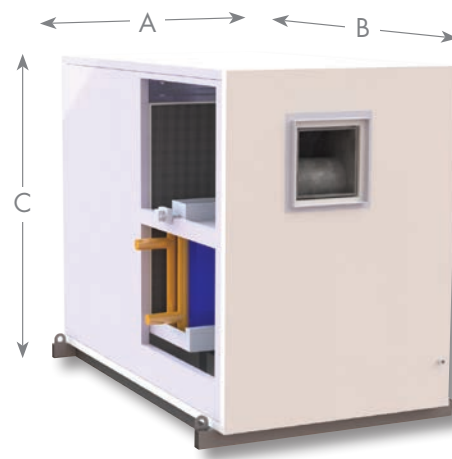
## Dehumidification Units

Model No	ACDHUM 1-D	ACDHUM 2-D	ACDHUM 3-D	ACDHUM 4-D	ACDHUM 5-D	ACDHUM 6-D	ACDHUM 7-D	ACDHUM 1-W	ACDHUM 2-W	ACDHUM 3-W	ACDHUM 4-W	ACDHUM 5-W	ACDHUM 6-W	ACDHUM 7-W	ACDHUM 8-W
Supply Air Flow Range (l/s)	0-720	600-1400	900-2000	1600-2800	2400-3600	3000-4300	3600-5000	0-720	600-1400	900-2000	1600-2800	2400-3600	3000-4300	3600-5000	5000-6000
No. of Compressors	1		2					N/A							
Compressor Type	Variable Speed Hermetic Scroll											N/A			
Refrigerant	R410A											N/A			
Fan Type	3 Phase EC Plug - Variable Speed														
Volts/Ph/Hz	415 / 3 / 50														
Construction	50mm PIR Sandwich Panel, 0.6mm zinc coated. UV treated polymer joiners for maximum strength, insulation and durability														
Weight (kg)	565	833	1212	1450	1876	2286	2345	338	569	799	1030	1268	1498	1731	1963
Overall Width (mm) <b>A</b>	1700	2100	2900	3550	4200	4850	5500	950	1600	2250	2900	3550	4200	4850	5500
Overall Depth (mm) <b>B</b>	2640	2490	2490	2490	2490	2490	2490	2300	2300	2300	2300	2300	2300	2300	2300
Overall Height (mm) <b>C</b>	2200	2950	2950	2950	2950	2950	2950	2200	2200	2200	2200	2250	2250	2250	2250

Please contact Air Change for further technical information.  
Specifications subject to change without notice.



**ACDHUM - D**



**ACDHUM - W**

### Air Change Group

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**airchange.com.au**