



# ARCTIC<sup>TM</sup>

## EVAPORATIVE COOLING

• ECONOMICAL • SCALABLE • SUSTAINABLE

- ❄ Direct Evaporative Coolers
- ❄ Indirect Evaporative Coolers
- ❄ Dew Point Evaporative Coolers



Innovative Air Solutions

## PAHWA™ GROUP

At the Pahwa Group, continuous Innovation is the driving philosophy. The focus is on Technologies which benefits you , our customers and partners in progress.

The group employs over 1400+ people in 6 continents and has 11 state-of-the art manufacturing facilities, including 8 best in its class Test labs. We have filled 12 patents globally in the last 7 years ( many granted).

Operating within a board framework of 'energy and environment', the group comprises of 4 knowledge based technology driven airineering companies specializing in technologies , products & services “with desiccants at the core, in relation to air”.

Bry-Air and DRI are the two flag ship companies of the group.

DRI is a global provider of components & systems for Energy Recovery, Indoor Air Quality (IAQ), Fresh Air Treatment, Evaporative Cooling, Desiccant Dehumidification, and Green Buildings.

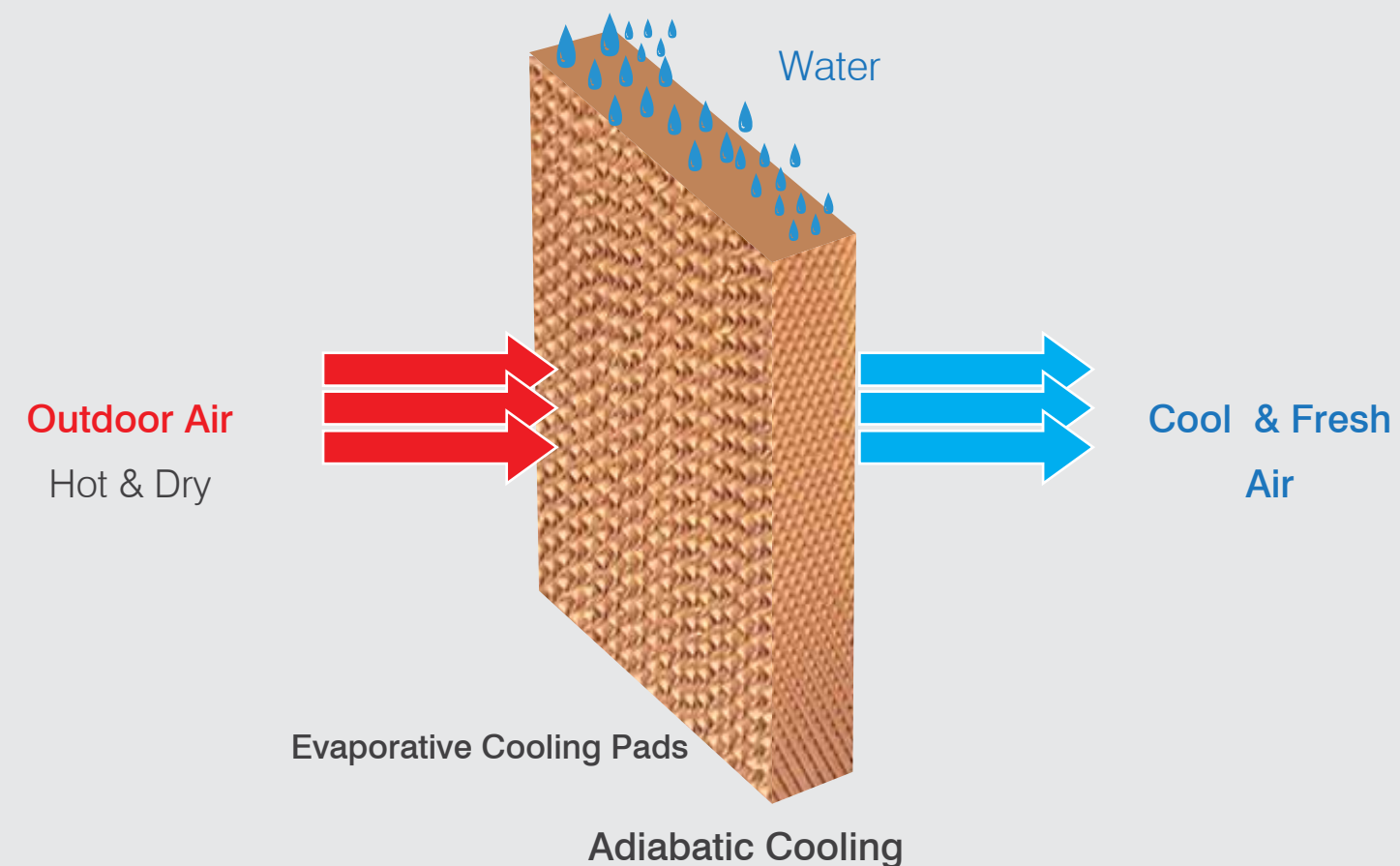
DRI's Evaporative Cooling Range is available under the brand.

## What is Evaporative Cooling ?

Evaporative Cooling is the process of reduction in temperature of air through the evaporation of water. As water is evaporated sensible energy is lost from the air thereby reducing its dry bulb temperature.

- ❄ Warm Outside air is taken into the unit through wet EcoCool Cooling Pads.
- ❄ The cool humidified air is supplied.

### How does Evaporative Cooling Works ?



## Comprehensive Evaporative Cooling Solutions

### COMPONENTS



**Level A**  
**EcoCool**®  
Evaporative  
Cooling Pads (ECPs)



**Level B**  
**EcoCool**™  
Fire Retardant  
Pads (FRPs)



**Level C**  
**EcoCool**®  
Evaporative  
Cooling Modules (ECMs)

### SYSTEMS



**Level 1**  
Free Flow (Spot)  
Evaporative Coolers



**Level 2**  
Ducted/Direct  
Evaporative Coolers



**Level 3**  
Indirect Evaporative  
Cooling Systems (IDEC)



**Level 4**  
Dew Point  
Cooling Systems



**Level 5**  
Desiccant  
Cooling Systems  
(with IDEC)



**Level 6**  
Solar-Assisted  
Desiccant Cooling Systems  
(with IDEC)



## Level 1

### Free Flow (Spot) Evaporative Coolers



- Portable & easy to move
- Provide localized cooling
- Low maintenance

## Level 2

### Ducted / Direct Evaporative Coolers



Range Starts from 6800 CMH (4000 CFM) to 1,70,000 CMH (100000 CFM)

## Level 3

### Indirect Evaporative Cooling Systems (IDEC)

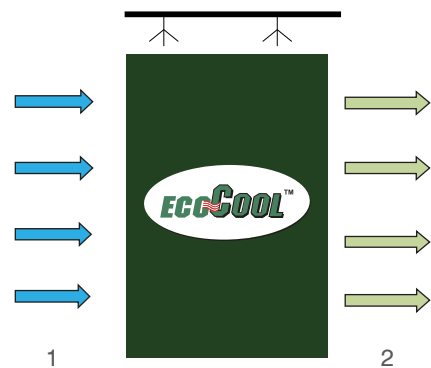
Indirect Evaporative Coolers use the advantages of cooling using water evaporation without increasing humidity in the supply air

- Special high efficiency **DRI Cool Module** achieves the Indirect Evaporative Cooling.
- Cooling Coil or a Direct Evaporative Cooling Module can be added as the second stage.
- Indirect + Direct Evaporative Coolers reduce dry bulb temperature even further when compare, to only Direct Evaporating Cooling.
- DRI Indirect Evaporative Coolers enable the use of Air Coolers in all Climate Zones & for various application.

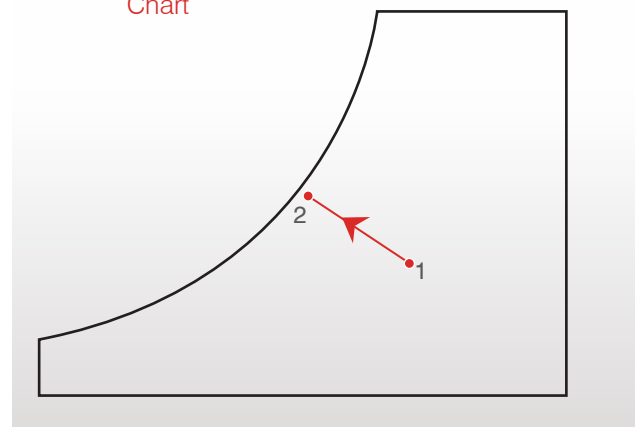


## Industrial & Commercial Air Cooling Solutions

### Schematic Diagram



### Psychrometric Chart

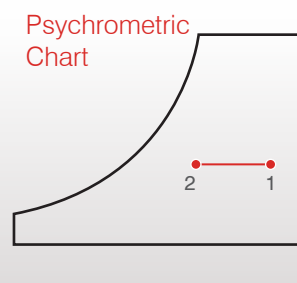
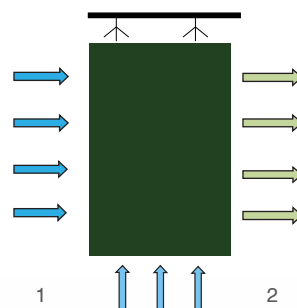


### Key Advantages

- Unique 3 side air intake design.
- Compact and sturdy design for rooftop or side wall installations.
- Easy to install and maintain.
- Very low running cost. Beat the Heat, easily and economically.
- Alternate to mechanical cooling in industrial, commercial, institutional and agricultural applications.
- Full range available to address your requirements of spot cooling, commercial cooling and industrial cooling.
- Improved Indoor Air Quality (IAQ).
- Improved productivity.

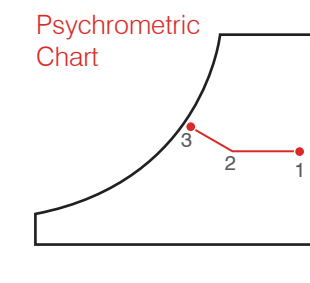
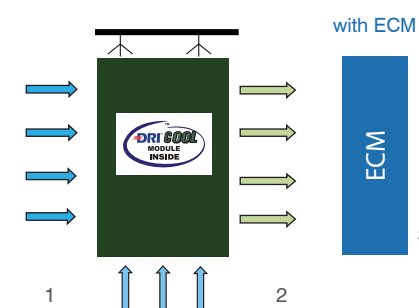
## Standard

### Schematic Diagram

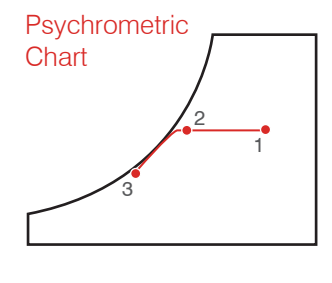
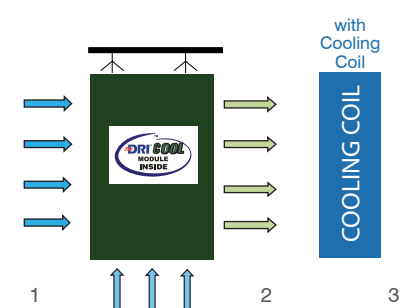


## Options Available

### Schematic Diagram



### Schematic Diagram



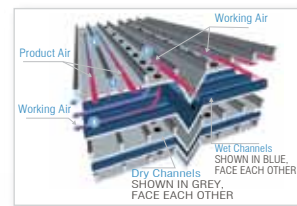
- Full Standard & Customized range is available.
- Sensors & Controls as Standard & add-on options are also available.

## Level 4

### Dew Point Cooling Systems

Dew Point Evaporative cooling range, enables conventional and wet bulb barriers to be broken.

The Special **DRI Cool Ultra Module** enables sensible cooling in a single pass taking the supply air dry bulb temperature below the wet bulb of the incoming air (without adding humidity)



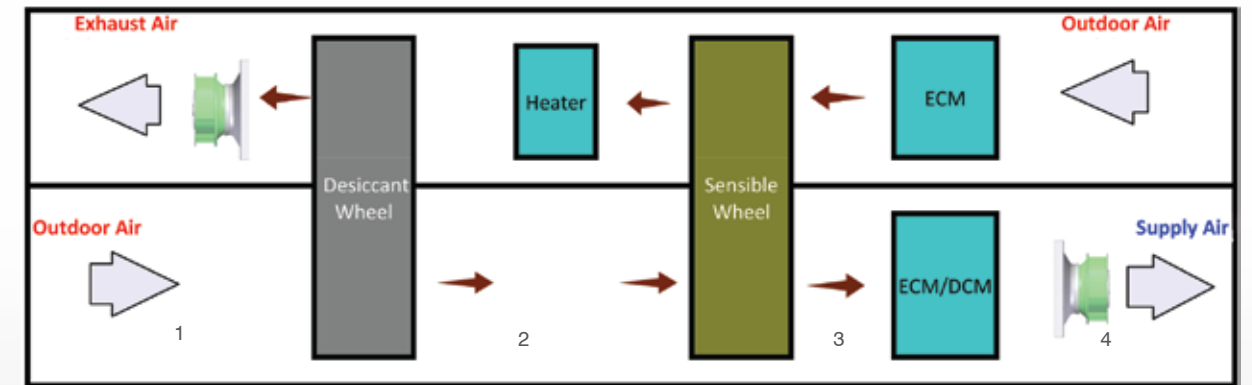
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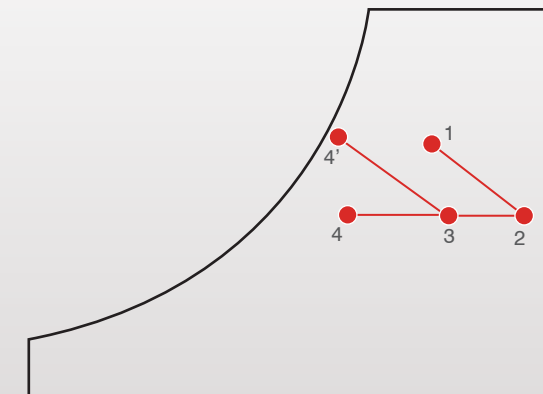
## Level 5

### Desiccant Cooling Systems (with IDEC)

Schematic Diagram

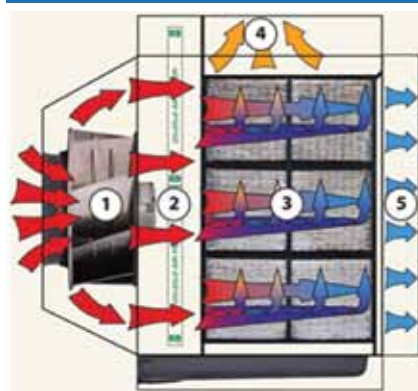


Psychrometric Chart

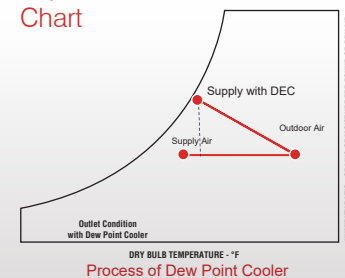


4' : Evaporative Cooling Module (ECM)  
4 : DRI Cool ULTRA Module (DCM ultra)

### Standard



Psychrometric Chart



### How does the DRI Cool ULTRA Module Works ?

- 100% Fresh air enters the system.
- The air is filtered of dust/allergens.
- Working air removes heat.
- Heat and moisture is exhausted from the systems.
- Cool product air enters the building with no added humidity.

The working air initially enters the dry channels, where it is pre-cooled sensibly before it is fractioned into multiple streams, which are directed into wet channels. The heat from the product air is transferred to the working air in the wet channels by means of evaporation. The heat is exhausted out the sides of the **DRI Cool ULTRA Module** and then to the atmosphere.

The product air stream is completely separate from the working air and never comes in contact with the or any wetted surface. This process occurs multiple times in a short physical space within the exchanger, resulting in progressively colder product and working air temperatures.

This system is modular, so the size and shape of an Air Handling Unit can be changed to meet user requirements.

## Level 6

### Solar-Assisted Desiccant Cooling Systems (with IDEC)





# VARIOUS APPLICATIONS



Malls



Offices



Shop Floors



Data Centers



Green House



Multipurpose Halls



Tea Fermentation



Food Industry



Warehouses



Government Building



Paper Mills



Print & Packaging Industry



Textile Industry



Automobile Industry



IT Companies



Retail



Health Care



Schools



Hotels



Leather Industry



Villas



Cinema Halls



Defence



Kitchen Ventilation



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