Cooling Large Areas Economically with EVAPORATIVE COOLING and ENERGY EFFICIENT FRESH AIR HVAC SYSTEM

Desiccant Rotors International
What is Evaporative Cooling?  
“Not A New Concept”

In fact it's the oldest known method of cooling hot & dry air to make living or working spaces more comfortable.

In ancient times, Egyptians hung wet materials, so that wind could blow through it to create a cooling effect.

Cooling of water in clay pot is perfect example of evaporative cooling.
Why do swimmer feels cold after emerging from pool?

Water removes heat from your body 7 times faster than air. So when you get out of the pool your body is wet, because the water at the surface of our body begins to evaporate and evaporation causes cooling.
Evaporative Cooling using 2 Natural Elements

Air & Water
The mechanics of evaporative cooling
The mechanics of evaporative cooling
The mechanics of evaporative cooling

Water inlet

Water reservoir
The mechanics of evaporative cooling

- Water reservoir
- Water inlet
- Recirculation pump
- Water reservoir
The mechanics of evaporative cooling

- Water distributor
- Water inlet
- Recirculation pump
- Water reservoir
The mechanics of evaporative cooling

- Water distributor
- Water spreader
- Water inlet
- Recirculation pump
- Water reservoir
The mechanics of evaporative cooling

Water reservoir

Water inlet

Water distributor

Water spreader

Pads

Recirculation pump

Water reservoir
The mechanics of evaporative cooling

- Water distributor
- Water spreader
- Pads
- External air
- Recirculation pump
- Water inlet
- Water drain
- Water reservoir
The mechanics of evaporative cooling

External air

Cooled air

Water distributor

Recirculation pump

Water drain

Water reservoir

Water inlet
Adiabatic Saturation

Sensible

Latent

Sensible

Latent
How does Evaporative Cooling System works?
Evaporative Cooling with ARCTIC™ Cooler

Benefits
- Comfortable Working Environment
- Improved IAQ
- Higher Productivity
- Lower Absenteeism
- Lower Operating Costs (approx. one tenth of the air-conditioning cost)
- Easy Maintenance

Ideal for
- Offices
- Workshops
- Cold Storage
- Shop Floors
- Green Houses
- Poultry
- Shopping Malls
- Textile Processing
- Generator Rooms
- Manufacturing Units
ECOCOOL PADS has a saturation effectiveness ranging from 50 to 98 % depending on air velocity and depth of cooling pad.
The Composition of Evaporative Cooling Pads

- It is made of cellulose paper which is engineered from cross-sectional specially treated flute media.
- The media is also treated with anti-rot and rigidifying wetting resins.
- The geometry of the cellulose media provides cooling without water carry over as long as the air velocity through the pad is less than recommended maximum.
The Advantages of Evaporative Cooling Pads

- Maximum cooling in lowest possible time
- Self-cleaning
- Economical
- Available in customized sizes / tailor made volume
Application Areas

Human Comfort
- Office Complexes
- Manufacturing Facilities
- Restaurants
- Gymnasiums and Sports Complexes

Process / Application Need
- Textile Humidification
- Poultry
- Green House
- Vegetable & Fruit Storage
Office Complexes
Manufacturing Facilities
Restaurants
Gymnasiums and Sports Complexes....
Poultry
Green House
Textile Humidification
Benefits

1. Economical Cooling
2. Use of Natural Elements (Air & Water)
3. Fresh Air Indoors at all time
4. Healthy IAQ (Indoor Air Quality)
Why Healthy IAQ is required?

In a day, an average Human Being

**Inhales about 11,000 Litres of Air!**

And spends 90% of our time indoors and the scientific evidence show that the air indoor is almost 10 to 100 times more polluted than outside, the risk to health is much greater indoors than outdoors.
The AIR is changing are you?
Effect of bad IAQ on Human being

- Headaches
- Dizziness
- Eye and throat irritation
- Shortness of breath
- Nausea
- Drowsiness
- Fatigue
- Memory loss

Relief occurs soon after leaving the building
Go Green – A Breath of Fresh Air
WHY DO YOU NEED
Fresh Air in Air-conditioned Spaces like
Offices complexes • Auditoriums • Super Markets • Hospitals • Hotels • IT Complexes

To

• Maintain IAQ - As per ASHRAE Standard
• Eliminate Sick Building Syndrome
• Avoid Smoke Build up
• Avoid bacteria
• Other Pollutant Build up
• Odour Control
Thank You