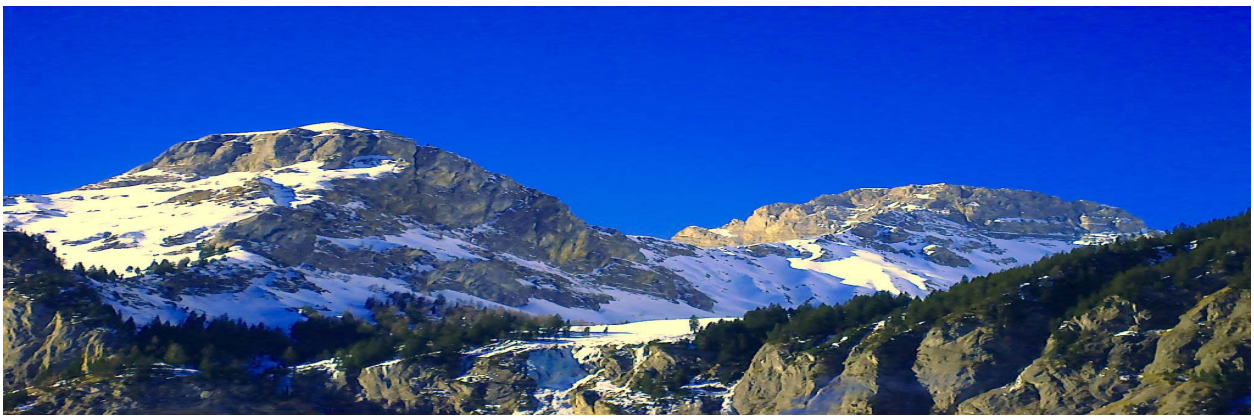
Desiccant AIR Filter

Solution For Energy Efficiency, Power Conservation & Savings, Improved Indoor Air Quality & Mold Prevention for a Greener, Cleaner Habitat and Working Place Environment

ESSENTIAL BACK UP FOR AIR CONDITIONING & REFRIGERATION SYSTEMS



Recognizing the link between “balanced humidity” and “energy efficiency-power savings” led to the conceptualization and development of the Optima AIR as a greener, cleaner external non-mechanical air conditioning and refrigeration systems accessory, for the commercial, industrial, institutional, and/or residential home sectors, that:

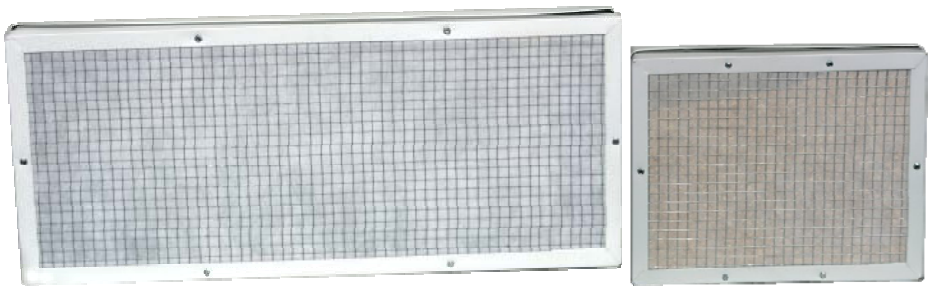
1) Continuously reduces temperature (sensible heat); and,

2) Naturally accelerates and lengthens the cooling process by uninterruptedly removing excess atmospheric water vapor to balance moisture (Latent Heat / Hybrid Dehumidification), thus directly resulting:

    2.1.) In decreased equipment compressor run-time and lesser power consumption (increased electrical energy savings/motor maintenance enhancement); and,

    2.2.) In the improvement of air quality, comfort, and environmental security brought about by the creation of a healthier, less-polluting, and more resource-efficient system (Mold Prevention / Allergen-Toxin & Odor Control).

Desiccant AIR is made up of special non-chemical, non-toxic coolant and adsorbent filtration minerals that continuously (even when the compressor cycles off) removes water vapor from the air and to lower the dew point in order to prolong the stability of humidity in the air.



Desiccant AIR Advantages

- 100% MADE-IN-AMERICA: Quality Production, Long Lasting Product Life;
- 100% Environmentally Friendly - Green House Gas (GHG) Emissions Reduction: Non-Toxic, Non-Flammable, Non-Caustic, Non-Irritating, Not a sensitizer in oral, dermal and ocular per Federal Hazardous Substances Act (15 CFR 1500);
- NO COST to operate
- Virtually Easy to Install
- Zero-Energy Use / No Electricity Required
- No Moving Parts, No Noise, No Vibration, No Interruption or Disruption of AC & Refrigeration Systems Operations;
- Cost Effective
- Faster Return on Investment (ROI)

Desiccant AIR Filter Product Benefits

OPTIMIZED POWER SAVINGS: Excellent backup to conventional Air Conditioning & Refrigeration Systems, old or new, reducing the energy needed to achieve the desired cooling level. When excess moisture is removed from the air, less energy is needed to lower temperatures for cooling, and therefore, thermostats can be adjusted. Monthly electrical consumption savings on the AC / Refrigeration Systems Operation side ranges from 15% to 20% of the portion of the Power Bill. In the summer, businesses can save 21% on energy by just moving up their thermostat;

OPTIMIZED AIR QUALITY IMPROVEMENT: Due to its excellent and strong adsorbent characteristics, levels of moisture are kept lower than would be practical with cooling based systems alone, helping to eliminate mold, micro-organisms, off-gassing, allergens and smells for healthier air. Desiccant AIR is the Number 1 Solution to what the U.S. EPA terms as the “Sick Building Syndrome”;

fights Molds & Mildew for More Safety!

Relative Humidity is often in and above the 70% range. Humidity levels this high provide the ideal environment for the formation of mold spores and mildews. By naturally reducing the moisture content in your building's air, Optima Air's filtration system will provide your business with a climate free of moisture-borne allergens, mold and mildews. The results are safer, healthier air, energy savings, less maintenance and improved comfort.

EQUIPMENT MAINTENANCE SAVINGS: With less compressor run-time, and by protecting against corrosion and other moisture-related problems, the equipment tends to have a longer life and incurs less replacements and repairs, resulting in added financial savings from operations and maintenance.

fights Corrosion!

When humidity levels exceed 50%, the conditions are present to induce rust and corrosion on metal surfaces. ***Desiccant Air Filter*** *works to reduce your humidity level which will avoid the unsightly corrosion of your expensive furnishings and prolong the life of your equipment.*

GREENER, MORE SECURE ENVIRONMENTS: A marked reduction in the demand side consumption of electrical energy through the optimized compressor performance of AC and refrigeration systems, delivers the necessary Green House Gas emissions reduction making the air conditioned place environmentally green;

PERSONAL HEALTH & SAFETY: With the elimination of excess moisture, mold, allergens, irritants, and other excess moisture related hazards, indoor air is more purified resulting in a healthier and safer indoor air environment;

fights Condensation for Better Business!

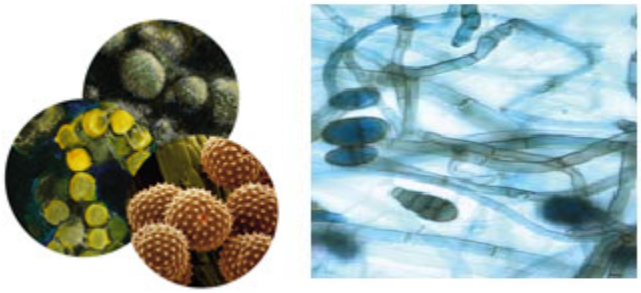
Excess condensation occurs when humidity levels become excessive. Condensation can cause slippery, hazardous working conditions and detract from your product's appearance. Optima Air will reduce the levels of excess humidity and eliminate condensation.

How Does It Work? The Science of Desiccant AIR

BEFORE Installing

The performance of a cooling system is evaluated by its ability to reduce the air temperature and remove moisture. Conventional ACs are temperature responsive but when the set point has been satisfied, the system cycles off. **In its off cycle, it is NO longer removing moisture,** so the air/moisture level can become unbalanced. **Water damage (condensation) occurs at dew point regardless of its relative humidity.** Excess water vapor can condense onto surfaces and hide in wooden furnitures, carpeting, walls, concrete floors etc. These high humidity levels put a heavy latent heat load on the evaporator coil, causing long energy-consuming run cycles. As air

temperature increases, its capacity to hold more humidity also increases and another cooling cycle becomes necessary to maintain the comfort level.

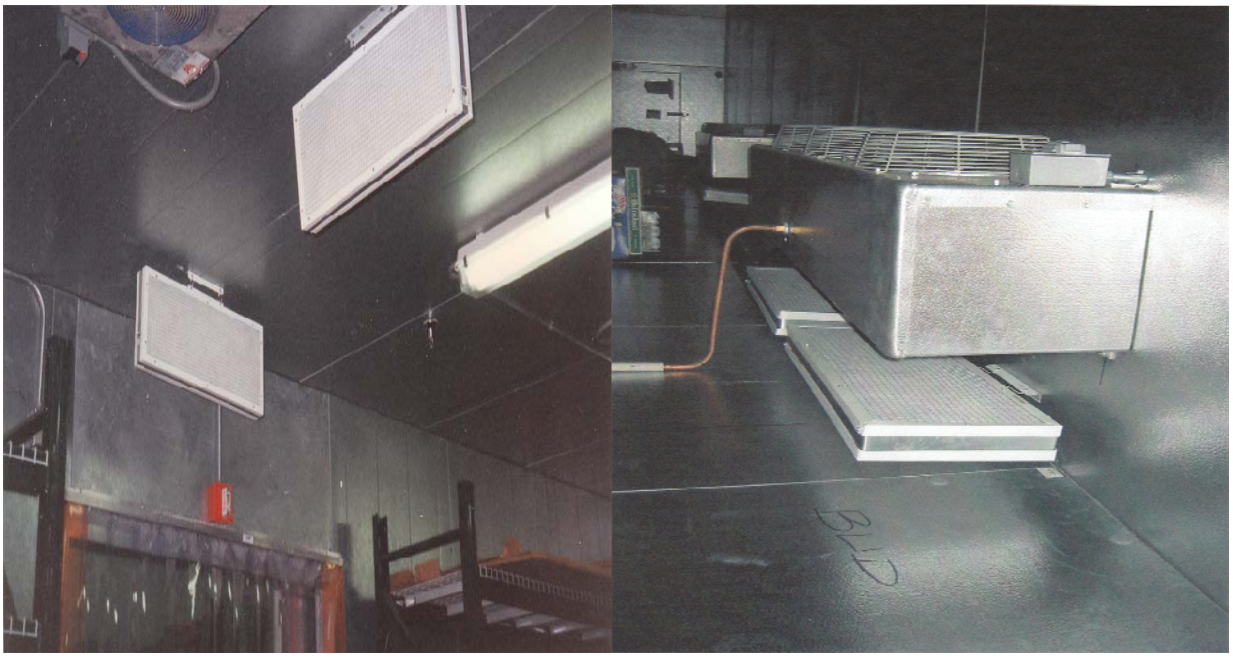


Under those conditions, if thermostats are raised (to save energy), it means warmer supply air, less dehumidification and more indoor humidity in the space. Under these conditions, you are a perfect candidate for an Desiccant AIR system to reduce energy costs.

AFTER Installing

Desiccant AIR does away with the need for long run cycles to super cool the air in order to dehumidify it. Adding an adsorbent and coolant material to an existing system improves performance, reduces operating costs, and extends the life of the overall system. When humidity is **cooled out** and **adsorbed out** of the air, the dehumidification process is continual and the humidity level stabilizes.

Desiccant AIR buffers changes in humidity by adsorption of water vapor (latent heat) to prevent dew point levels. Typically, within hours after being installed, temperatures will move lower, the relative humidity will stabilize, and the dew point will be controlled to eliminate further condensation. This leaves the air feeling cooler, crisper, and more comfortable so less energy is needed to lower temperatures.

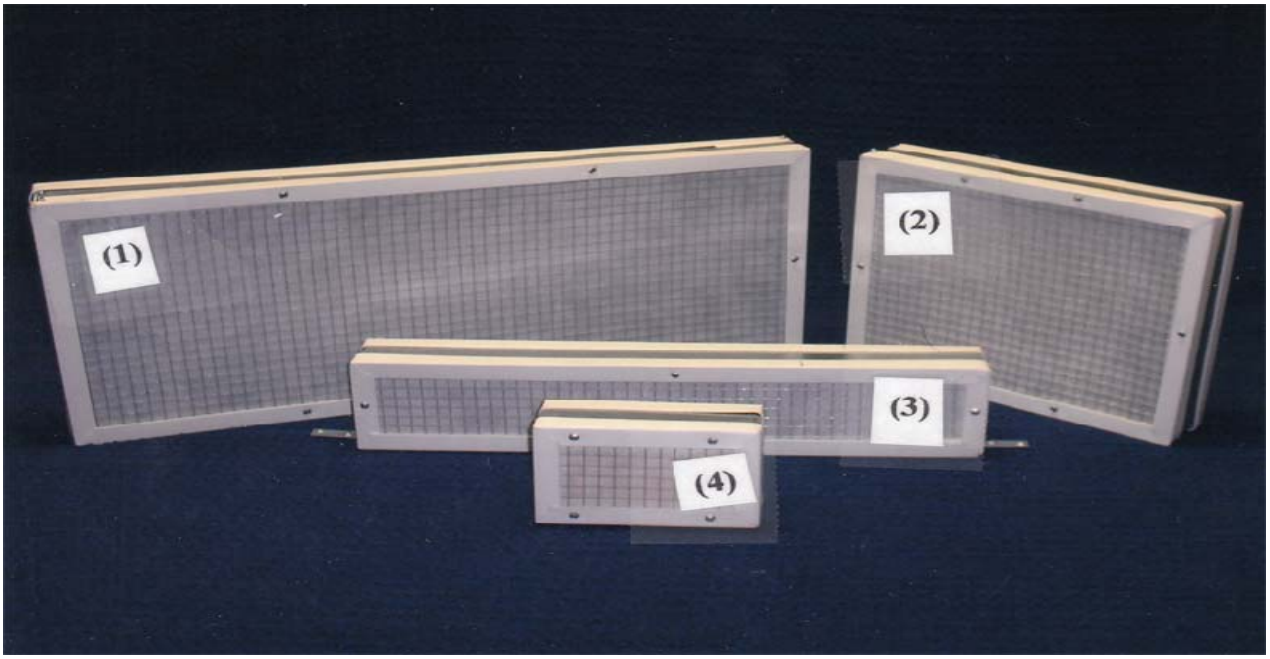


Under those conditions, the thermostats can even be raised for added energy savings. When the environment is in balance, set points are easier to achieve, resulting in energy savings and reduced maintenance.

Typical Residential Home Placements:

Installing Desiccant AIR in the duct systems – ceiling and/or walls will deliver the energy savings and improved air quality that virtually adds up to a mold-secure, comfortable living, green habitat and a healthy home environment.

Desiccant AIR Filter Products



OPT-20LB *(Number 1 Above)* 20 POUNDS DESICCANT AIR
This can handle up to **5-Tons** of Air Conditioner / Refrigeration System
Measures: L=30” / H = 12” / W = 3”

OPT-10LB *(Number 2 Above)* 10 POUNDS DESICCANT AIR
This can handle up to **2.5-Tons** of Air Conditioner / Refrigeration System
Measures: L=15” / H = 12” / W = 3”

OPT-PTAC *(Number 3 Above)* PORTABLE THERMAL DESICCANT AIR
This type is commonly installed in hotel and motel rooms, and for window type Air Conditioners
Measures: L=23" / H = 4.5" / W = 3"

OPT-BRCK *(Number 4 Above)* SPECIAL REF-SYSTEMS DESICCANT AIR
This can be used in special applications like walk-in freezers etc…
Measures: L = 5" / H = 4.5" / W = 3"

Desiccant AIR Technology Users

Abita Brewing Company
AM Mart
Aramark Corporation
Baskin Robbin's Ice Cream
Baum's Bakery
Camelot Club
Charbroil Express
City Government of Mandeville, Louisiana
Columbia Hospital
Dairy Queen
Dixie RV Center
Exxon-Mobil
Gallagher's Restaurant
Greater New Orleans Expressway
Greek Ship Line
Hartsfield Atlanta International Airport
Heritage Manor Nursing Home
Holiday Inn Hotels
IKON Office Solutions
Kwik-Kopy Printing
Louie's Café
Marriott Hotels
Mulligan's
Northwood Country Club
Piccadilly Cafeteria (Louisiana)
Prison Systems of America
Rouse's Supermarket
Ryan's Steakhouse
Santa Maria Wholesale Produce, Inc.
Shell Oil
Smoothie King
Acadian Bank
A & P Foods
Arrow-Sysco Food Service
Baton Rouge Country Club
Brennan's
Casino Magic
City Club of Baton Rouge
Coca-Cola Enterprises
Copeland's
Diversified Foods Seasonings, Inc.
Dominos Pizza
E-Z Serve
Girl Scout's of America
Glynnwood Catering
H & K Sales
Hampton's Fresh Flowers
Hilton Hotels
House of Blues
J. Pepper's Bar & Grill
Lakeview Manor Nursing Home
Louisiana State University
Mimi's Café
New Orleans Steam Boat
Outback Steakhouse
Piggy Wiggly Supermarket
Rose Terrace Lodge
Ruth's Chris Steakhouse
Safe-Stor (Texas)
Schwing's Seafood
Shoney's
Southern University at New Orleans

Texaco
Treasure Chest Casino
University of New Orleans
Wendy's

The Fashion Cafe
Tulane University
Veterans Hospital, New Orleans
Windsor Court Hotel

Desiccant AIR Filter Technology Performance

Actual Results of a Beverage Dispensing Machine at the Coca-Cola Service Department:

	WITHOUT DESICCANT	**WITH DESICCANT**
Temperature	42.1 degrees F	35.2 degrees F
% Relative Humidity	91%	81.3%
Compressor Run Time	18-21 minutes	18-21 minutes
Compressor Off Time	10 minutes	27 minutes
Total Cycle Time	31 minutes	48 minutes
% RUN Time	21/31 = 68%	21/48 = 44%
% OFF Time	10/31 = 32%	27/48 = 56%
Based on 1,000 hours clock time	680 hours	440 hours
	320 hours	560 hours

Kilowatt Usage of 1,000 Hours Clock Time:
110 volts x 12 amps = 1,320 watts divided by 1,000 = 1.32 kilowatts (kW)

Without Desiccant AIR: 680 hours x 1.32 kW = 897.6 kW
With Desiccant AIR 440 hours x 1.32 kW = 580.8 kW

Run-Time and kW Usage for 1 Year:
1,000 divided by 24 Hours = 41.6 days
365 days divided by 41.6 = 8.7 (41.6 day periods)

RUN-TIME WITHOUT PER YEAR: 680 x 8.7 = 5,916 Hours
RUN-TIME WITH PER YEAR: 440 x 8.7 = 3,828 Hours

Run-Time Savings Per Year = 2,088 Hours
At US$0.12 per kWh, the Annual Electrical Savings
Amounts to US$ 250.56 Per Dispensing Machine