

feeling clammy?

basement mold?



Residential Humidity Control

Critical for healthy indoor air quality.

property damage?

musty odors?

dust mites?



Therma-Stor® LLC

Driven by performance. Powered by design.™



Indoor air quality issues?



High moisture levels can result in physical discomfort, increased air conditioning costs, and possibly serious health issues. In addition, damage to your home and your home's furnishings can result. Maintaining relative humidity below 50% prevents dust mite infestations, mold and mildew growth, and inhibits the growth of bacteria. Lower relative humidity also reduces the out-gassing of volatile organic compounds – creating a healthier environment in which to live and breathe for you and your family.

ELIMINATING ALLERGENS.

Dust mites and mold are the two most common allergens present in higher humidity environments. These allergens do not require water to grow – they only require humidity levels at or above 65% to 99% at the surface on which they grow.

Dust mites live in upholstered furniture, carpets, and mattresses. They absorb their moisture needs from the air. If the relative humidity is below 50%, according to Dr. Larry Arlien at Wright State University, dust mite infestations will be eliminated.

“A number of factors allow biological agents to grow and be released into the air. Especially important is high relative humidity, which encourages house dust mite populations to increase and allows fungal growth on damp surfaces.”

— *Indoor Air Pollution: An Introduction for Health Professionals*

Molds are fungi. They only require high humidity and an organic-based material on which to feed. It is no surprise that they are plentiful in humid environments. Cooler surfaces create a perfect breeding area for mold because the relative humidity at the surface will be near 100%. The surface may even be wet with condensation.

Mold growth can be eliminated in the home through humidity control that maintains reduced relative humidity levels and prevents cooler surfaces from becoming damp. To avoid the problems caused by moisture, and to create a comfortable environment, a dehumidifier is necessary to maintain relative humidity between 45-50% throughout the home. Keeping your relative humidity at 50% or less eliminates mold, mildew and dust mites.

Only supplemental dehumidification provides indoor humidity control regardless of air conditioner operation or outside moisture conditions.

The solution to indoor air quality issues is controlling moisture with the Ultra-Aire line of whole house ventilating dehumidifiers.

T.S. Melvin from South Carolina comments on his Ultra-Aire dehumidifier:

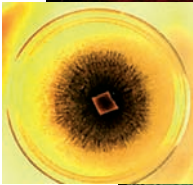
“ (In our home) humidity is consistently below 50% on the worst summer day and averages about 46% from April to October, before heating season. A great product you can count on. My allergies have never been better. ”



The new Ultra-Aire XT150H high capacity whole house ventilating dehumidifier delivers 150 pints per day at standard conditions using only 6.9 amps of electricity.



Magnified photos of dust mite and mold spores.



High basement humidity?



“ I had a smelly, musty basement with 70-80% relative humidity. Since we installed the Santa Fe my basement is much drier and smells normal — no more damp, musty smell! No more mold problem! My relative humidity averages about 50-53% now. ”

— Rob, Rocky River, OH



The Santa Fe™ free standing basement dehumidifier removes up to 100 pints of water per day — enough water removal capacity for areas up to 2,500 square feet.

HUMIDITY PROBLEMS IN THE BASEMENT?

Basements are naturally cooler than the rest of the house, which makes them subject to high humidity. Because the basement floors and walls are in contact with the soil, and soil temperatures several feet below the surface remain at a constant temperature of 50°-60°F or less, basement floors and walls tend to remain cool. Also, basements generally do not have windows and so there is no solar heat gain. Therefore, since basements tend to be cool and cool air holds less moisture than warm air, basements will have higher relative humidity.

Moisture is the most common problem in basements—either entering from outside sources or being produced inside by the occupants' activities. The soil around the walls can contain a large amount of moisture from surface water that is seeping down or from a high water table. Water can find its way inside by gravity or through a crack or flaw in the water protection layer of the foundation. Water can also be pulled up by a “wicking action” or “pushed up” by hydrostatic pressure from the soil under the walls or floor.

- High humidity levels in the basement encourage rust, mildew, mold and odors.
- Most anything stored in a basement is vulnerable.
- Additional health risk is added where there are allergies to mold and dustmites or if a family member has asthma.
- To protect your family and the investment you have made in your home, maintain 50% relative humidity as recommended by the EPA.

The Santa Fe™ Series of free-standing dehumidifiers are designed to operate in the cooler temperatures of a basement and at real world conditions of 60°F and 60% relative humidity. In these conditions, the Santa fe dehumidifier would still remove a remarkable 64 pints of water per day.

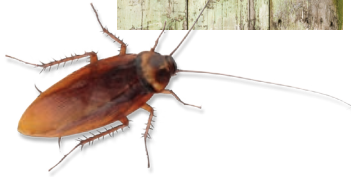
The Santa Fe Dehumidifier removes odor-causing moisture and maintains EPA recommended relative humidity levels of 45 to 50% — ideal conditions for an odor free storage space or comfortable living space for you and your family.

If you store anything of value in your basement or if you use your basement as living space, it is important to keep the moisture levels low. Relative humidity levels rising above 70% stimulate the growth of mold, mildew, bacteria and other biological allergens, which generate musty basement odors. These conditions must also be prevented in microenvironments such as underneath carpeting, rugs, or storage boxes.

The Santa Fe is the most energy-efficient dehumidifier in the industry and offers time-tested technology to maintain 50% or less relative humidity in your home — the levels recommended by the EPA, American Lung Association, and American Medical Association.



High crawlspace humidity?



HUMIDITY PROBLEMS IN THE CRAWLSPACE?

Excess moisture, introduced by way of unsealed, vented crawlspaces, contributes to wood rot, mold growth and increased pest activity. Moisture in crawlspaces often migrates to the upper levels of the home through a “stack effect.” In essence, whatever air is below the house is also in the house. As warm air rises and escapes through the upper levels of the home, new air finds its way into the home to replace what’s been lost. Intake air comes in at the lower levels – through unsealed crawlspaces. This may lead to costly problems such as cupping of hardwood floors, mold growth, increased air conditioner loads, and swelling of millwork/cabinetry. Air infiltration from the crawlspace often carries odors and may contribute to poor indoor air quality and uncomfortable humidity levels.

Excess moisture in crawlspaces has also been associated with contributing to increased energy consumption. Wintertime ventilation cools the crawlspace contributing to heat loss from the home. In the summer, introducing warm outside air under the home contributes to heat gains, increasing cooling loads. Ventilation of a crawlspace to control relative humidity only works consistently in an arid climate. In most climates, ventilation can actually add significant quantities of moisture during humid times.

Why Vented Crawlspaces Can Make Humidity Worse.

Venting a crawlspace will either add moisture to, or remove moisture from, a crawlspace depending on the moisture content of the ventilation air compared to the desired conditions of the crawlspace. Venting with dry air reduces moisture levels in the space, while venting with moist air contributes moisture. It is false to assume that venting will automatically bring in “good” air and push out the “bad” air. If the outside air is humid and the crawlspace air is humid, you’re not making any improvements by venting. Since venting either wets or dries the space depending on outside conditions, there is no way to guarantee a specific moisture level in a vented crawlspace.

A Better Solution.

The solution to this dilemma is to close the crawlspace. One of the objectives of closing crawlspaces is to reduce sources of moisture entering the space. Even when done meticulously, closing a crawlspace will significantly reduce the moisture but not eliminate it. Active conditioning of the space may be necessary to maintain proper humidity levels. A dehumidifier can provide long-term, active moisture control and ensure humidity levels are maintained at a specific level which is adjustable by the home’s occupant.

It is important to note the areas of concern when taking steps to responsibly convert your vented crawlspace to a sealed and conditioned space. Those include, but are not limited to: assuring proper water drainage, installing vapor barriers, consideration for combustion and carbon monoxide and sealing outside vents and controlling moisture with a Santa Fe crawlspace dehumidifier.

“ I had extremely high humidity and mold in my crawlspace. The Santa Fe Advance worked flawlessly along with the optional condensate pump. Within three days the relative humidity dropped to 60% from 86%—taking out 10+ gallons of water in the first 24 hours! After two weeks the relative humidity is down to 50-53%. ”

— Graddy, Huntsville, AL.



The Santa Fe™ Advance is powerful enough to control humidity even in the cooler environments of crawlspaces.

The solution:



HOW THERMA-STOR DEHUMIDIFIERS CAN HELP.

Ultra-Aire Whole House Ventilating Dehumidification

The best way to combat the problem of humidity migrating through the roof, walls, and floor is to pressurize the building with dehumidified air. This strategy involves bringing a measured amount of outdoor air into the structure and dehumidifying it before it enters the living areas. An equal amount of drier indoor air will escape from the structure to equalize the pressure. This ventilation strategy, provided by the Ultra-Aire system, prevents humid outdoor air from infiltrating the structure and offers the ventilation recommended by health experts. The Ultra-Aire has been incorporated into numerous American Lung Association Health Houses and is your best solution to solving indoor air quality issues which includes filtration and dehumidification for increased indoor air quality.

Santa Fe Free Standing Basement and Crawlspace Dehumidification

Santa Fe dehumidifiers will help maintain the structural integrity of your home, inhibit mold growth, and improve the indoor air quality of your home by removing odor-causing moisture. This dehumidifier line will also maintain 50% or less relative humidity as recommended by the EPA, American Lung Association, and American Medical Association. Santa Fe dehumidifiers are designed to control humidity even in the cooler environments of basements and crawlspaces.

FREQUENTLY ASKED QUESTIONS ABOUT SANTA FE AND ULTRA-AIRE DEHUMIDIFIERS

Why isn't an air filter effective against dust mites and mold?

Air filters are only effective on particles suspended in the air. The dust mite allergen is relatively large and dense compared to other particles, therefore, it does not stay airborne for a sufficient amount of time to travel a significant distance or through ductwork. Direct contact with these allergens in their breeding grounds is how individuals are exposed to them in the home. This is unaffected by air filtration devices.

Why is 50 percent relative humidity so critical?

The survival of adult dust mites is limited to 4 to 11 days in relative humidities below 50 percent. Dust mites in the protonymph stage, however, can survive in this dormant larval stage for several months waiting for high humidity conditions to return.

What about running a smaller dehumidifier in just the bedroom?

A recent study showed that providing dehumidification to a single bedroom did not significantly reduce the humidity or the allergen levels present in the bedroom.* The humidity from the rest of the house will overwhelm the efforts to dehumidify a single room.

How will the added heat affect my air conditioner?

Because the moisture load has been removed from the air conditioner, it is able to cool the air more efficiently. Homes that maintain lower relative humidities are more comfortable and require less cooling. The tendency is to set the thermostat at 78° to 80° rather than 72°.

Doesn't adding fresh air ventilation increase my air-conditioning costs?

An increase in the amount of ventilation will increase the energy costs required to condition the fresh air to indoor levels. It is important to

understand that some ventilation is occurring all the time. This is called natural ventilation. The actual increase in the overall rate and, in turn, the increase in utility costs is not normally significant.

How large an area can one unit handle?

A single SANTA FE or ULTRA-AIRE will maintain relative humidity levels below 50 percent in air-conditioned structures up to 2,500 square feet, even if there is more than one air conditioning system. In larger homes, the ULTRA-AIRE XT150H can control up to 3,500 square feet or multiple units can easily be employed.

Why not buy two or more small residential dehumidifiers (for less money), instead of one SANTA FE or one ULTRA-AIRE?

Two fifty pint residential dehumidifiers do not equal the water removal capacity of one SANTA FE or one ULTRA-AIRE. The Association of Home Appliance Manufacturers (AHAM) rating system used for dehumidifiers reflects the performance at 80°F and 60% RH. It is a mistake to assume that equal performance at these conditions means equal performance in the cooler conditions present in basements. In fact, most residential dehumidifiers, even those that contain a defrost feature, do not recommend operation below 65°F and in some cases 70°F. The performance of typical residential dehumidifiers at these temperatures is minimal, if they function at all. The SANTA FE and ULTRA-AIRE dehumidifiers are designed to operate in temperatures as low as 56°F and will still remove over 60 pints a day at 60°F and 60% RH. This is the caliber of performance required to reduce the relative humidity below 50% and eliminate mold growth. Plus, the cost of operating one dehumidifier is less than operating two units.

* J ALLERGY CLIN IMMUNOL., Vol. 99, num. 1, part 2, pg S161. E Fernandez Caldas, WL Trudeau, DK Ledford, RF Lockey, Tampa, Florida.

Basement/Crawlspace Dehumidification



Santa Fe Advance — Energy efficient and low profile design. This unit is sized for 2200 sq. ft. typical.

The Santa Fe line of high capacity, energy-efficient, free-standing dehumidifiers are designed to provide the ultimate in humidity control for basements, crawlspaces, and living spaces.

- Large capacity.
- Low temp operation – down to 56°F.
- Optional ducting.
- Gravity drain. Optional condensate pump.
- No buckets to empty.
- Ideal for basement, attic and crawlspace applications.
- Automatic humidity control.
- Optional remote control/dehumidistat.



Santa Fe — Removes more water per unit of electricity than any other qualified dehumidifier in the Energy Star® Program. This unit is sized for 2500 sq. ft. typical.



Santa Fe HC

Our largest capacity, free-standing dehumidifier. High powered and strong. This unit is sized for 3200 sq. ft. typical.



Santa Fe Rx

Extremely quiet operation makes it an ideal choice for offices, residences, schools, and libraries. Our only unit with a built-in condensate pump and 20 feet of drain hose add extra convenience. With an optional secondary filter housing, you may choose HEPA, carbon-plus pleated media, or high efficient (95%) filters. The SF Rx is not ducting capable. Requires 65°+ temps for optimum performance. This unit is sized for 2200 sq. ft. typical.

Whole House Ventilating Dehumidification



Ultra-Aire XT150H

- Requires only 6.9 amps of electricity — half the amount of competitors!
- Environmentally-friendly R410A refrigerant.
- Patent pending, optimized air-to-heat exchanger.
- Sized for 3500 sq. ft. typical.



The Ultra-Aire Whole House Ventilating Dehumidifiers provide effective air filtration, optional fresh air ventilation, and humidity control for your entire home with one high-capacity, energy-efficient unit.



Ultra-Aire 90H

- Energy Star efficient.
- High capacity effective dehumidification — up to 90 pints of water a day.
- MERV-11 filtration standard. MERV-14 optional.
- Insulated cabinet for quiet operation.
- Sized for 2200 sq. ft. home.

- Designed to utilize existing ductwork to distribute fresh, filtered and dehumidified air throughout the house.
- Pressurizes the home with dry air when the optional fresh air ventilation feature is selected.
- Optional fresh air ventilation helps to dilute indoor pollutants and maintain high oxygen content in the air.
- Optional 95% high efficiency filtration
- High capacity dehumidification

Ultra-Aire 100V

- Energy Star efficient.
- High capacity effective dehumidification — up to 100 pints of water a day.
- MERV-11 filtration. MERV-14 optional.
- Sized for 2500 sq. ft. home.



4022200

Optional Accessories for your Therma-Stor Dehumidifiers

Do you know the relative humidity levels in your home?



4026208

The Humidity Alert™ was designed to discriminate between occasional periods of high humidity and the prolonged periods that create a risk of unhealthy biological activity. It's a simple, inexpensive device that monitors temperature and relative humidity conditions and records data that is known to contribute to **wood rot, mold growth, musty odors and increased pest activity.**

Easy to use:

1. Place the meter in the desired space.
2. Collect the necessary humidity data.

Ultra-Aire Digital Controller



4023660

You will enjoy the comfort that comes with precise regulation of your indoor environment with our new **DEH 3000 Digital Control**. This control will allow you the ability to monitor and control relative humidity levels in your home. The DEH 3000 is designed to accommodate your personal comfort level.



4020175

Santa Fe 120 Volt Dehumidistat

Use this Honeywell Dehumidistat to control your Santa Fe Dehumidifier in remote installations.

Questions? Please contact your dealer or visit our website at www.thermastor.com or call 1-800-533-7533.



Therma-Stor[®] LLC

Driven by performance. Powered by design.™

P.O. Box 8680 Madison, WI 53708 • TOLL-FREE 1-800-533-7533 • www.thermastor.com • sales@thermastor.com