



ComfortDry 400 Talking Points

1. The ComfortDry 400 unit provides a **real independent control** of humidity in the home to improve comfort, improve indoor air quality, and to save energy.
2. The ComfortDry 400 unit is equally as effective in controlling humidity in **commercial** establishments such as restaurants, small office buildings, strip mall type buildings, doctors offices etc.
3. The ability to control the relative humidity in the home at or below **50% RH** has tremendous benefits to the homeowner:
 - **Prevent mold-** ASHRAE studies show that mold and mildew growth is prevented when the humidity is maintained at 45-50% RH.
 - **Reduce allergens-** dust mites can't exist at relative humidities below 50%. Dust mites and their waste products are known to be common allergens for many people. In fact, the medical community is now recommending the use of dehumidifiers for those individuals plagued with allergy problems. Year round humidity control is essential to controlling dust mite populations. The control of humidity creates a cleaner healthier environment.
 - **Protect furnishings-** controlling indoor humidity will protect home furnishings (and expensive home amenities such as hardwood floors, cabinets, molding etc.).
 - **Improve comfort-** with independent humidity control, the homeowner can *choose their own comfort level*. There is no need to overcool to reduce humidity.
 - **Save energy-** with humidity control, the homeowner can maintain comfort at higher setpoint temperatures and save energy on air conditioning bills. For every degree increase in temperature, the homeowner can save approximately 6% on their electric bill.
4. Controlling humidity independently is especially helpful in the Spring and Fall (shoulder months) when humidity is frequently high, but the temperatures are too low to activate the air conditioning system. In these cases, the ComfortDry 400 unit would take over on its own, controlling the humidity, without having to turn on the air conditioner.
5. With independent humidity control, the homeowner can leave the house for an extended period of time and increase the setpoint temperature controlling the air

conditioner to save energy without fear of losing control of the humidity in the home. The ComfortDry 400 continues controlling humidity to prevent mold growth, protect furnishings, and eliminates the dust mite problem.

6. The newer high end variable speed air conditioning units marketed by the majors for humidity control really don't separate the two functions of temperature and humidity control and claims of performance are questionable. They rely on variable speed fans and compressors to overcool during a call for dehumidification and are limited in the level of humidity that they can control to. The ComfortDry 400 operates independently from the A/C systems, and is controlled by a separate humidistat located in the home- providing independent humidity control.

Unique Features of the ComfortDry 400 dehumidifier

1. **Desiccant based system-** the ComfortDry 400 is a desiccant based whole house dehumidifier that utilizes natural (or propane) gas to reactivate a rotating honeycomb type desiccant wheel. The desiccant concept has the ability to remove moisture efficiently to low dewpoints if desired. The concept of using economical, clean burning natural gas to control humidity throughout the home is an attractive one. Refrigerant based dehumidifiers have difficulty controlling below 50% RH and become very inefficient as the humidity lowers.
2. **Whole house dehumidifier-** the ComfortDry 400 ties into the existing air handler system and distributes dry air throughout the entire duct system. It cycles on and off independently of the A/C system and controls off of a separate humidistat mounted on a wall inside the home. If desired, the unit can be installed separate from the A/C unit with its own return air and supply air duct system.
3. **No drip line- no liquid water-** because the ComfortDry 400 is a desiccant based system, the adsorbed moisture leaves the unit along with the combustion products up a flue stack all in the vapor phase- similar to a gas hot water heater vent. Unlike competing refrigerant systems, there is no liquid drain line to worry about plugging and overflowing, - no buckets to empty when full.
4. **Simple Design-** the ComfortDry 400 is a relatively simple piece of equipment. It consists of two fans, a rotating desiccant wheel, and a gas burner. Periodic filter changes typical of any HVAC equipment is all that is required for maintenance. The "heart" of the unit, the desiccant wheel, should never need changing and will not lose its capacity over time and is designed to last the life of the equipment. The desiccant wheel carries a 5 year limited warranty (a 1 year limited warranty is offered on the rest of the equipment).

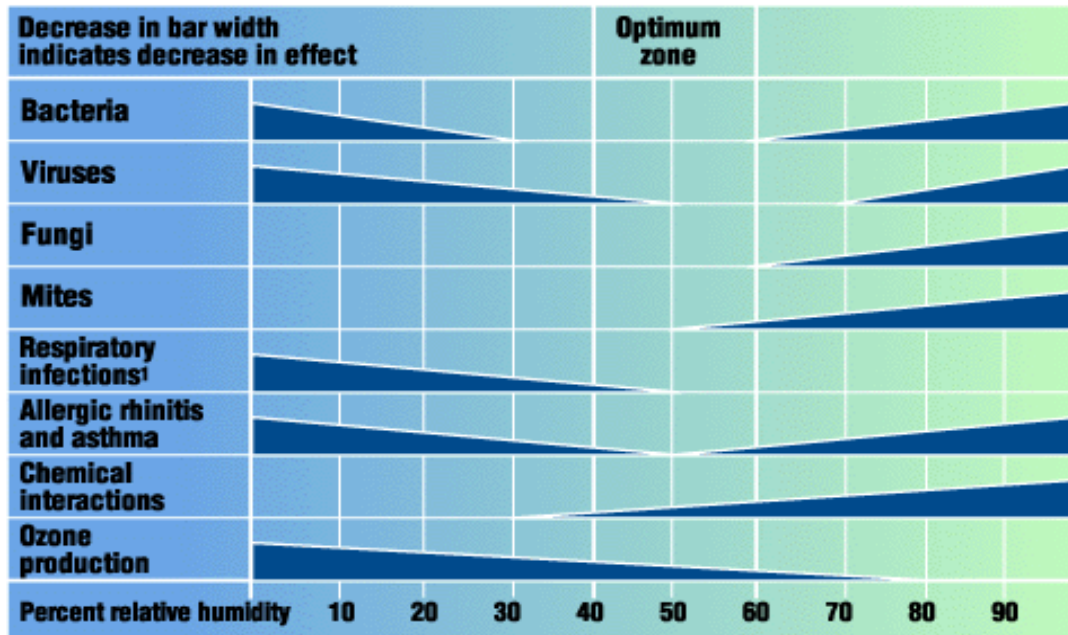
5. **Simple Installation-** installation requires tying two 8” ducts into the main trunk of the air handling system downstream from the evaporator coil. In addition, a 6” reactivation inlet duct along with a filter is attached to the unit and a 5” flue is installed similar to a hot water heater. The unit is then piped for gas and the total job is estimated a 3-4 hours for retrofit installs and 2-3 hours for new construction installs.
6. **High moisture capacity-** one ComfortDry 400 unit is capable of controlling the humidity in a typical home of up to 3000 sq ft. The unit has a capacity (@ 80F and 60%RH) of 150 pints per day.
7. **Potential Rebates-** gas company rebates may exist in certain locations. Since the unit shifts some of the air conditioning load from the electric side to the gas side, certain utility rebate structures may exist.

ComfortDry 400 in Commercial Applications

1. **Commercial Applications-** the ComfortDry 400 is used in many commercial applications:
 - Restaurants
 - Small offices
 - Hotel spaces
 - Conditioned storage
 - School buildings- classrooms
 - Any light commercial establishment requiring humidity control
2. **Benefits to restaurants-** restaurant applications have shown to prevent windows from sweating, registers from dripping, prevent damage to wall paper, ceiling tiles, reduced odors, more comfortable patrons and employees, faster drying floors to prevent slips and falls, mold prevention and energy savings.
3. **Restaurant installation-** a typical chain type restaurant application requires two units suspended above the ceiling tiles with separate return and supply registers. The total installed cost (two units) for a restaurant is less than \$10,000. Restaurants can now experience the benefits of desiccant based humidity control for less than \$10,000.
4. **Energy Savings-** with humidity control, the restaurant or building can expect to achieve significant cost savings by increasing the set point temperature of the space. When compared to technologies that control humidity by overcooling with DX followed by reheat, the cost savings are even greater.

5. **Improved indoor air quality**- the improvements to indoor air quality as described in the residential section certainly apply to all commercial applications as well. As the following chart shows, controlling the space in the 45-50%RH level prevents the growth of many undesirable pathogens.

Effect of Room Relative Humidity on Selected Human Health Parameters



¹ Insufficient data above 50% R.H.

Source: Sterling (1984) ASHRAE Transactions V. 90, Part 2.

6. **Employee health improvement**- improving the indoor air quality has a profound effect on employee absenteeism and productivity.