FIGHTING COVID-19 WITH DEHUMIDIFICATION

RH-Cube 18 DEHUMIDIFIER
Humidity Control is the Key to Health

While at home, the best way to protect yourself against COVID-19’s worst is by reducing sources of indoor air pollution from mold, mildew, dust mites, and other pathogens and contaminants; air pollution can double the mortality rate from COVID-19. And the best way to reduce those indoor pollutants is with a dehumidifier.

Let us look in detail at what is responsible for most indoor pollution.

Mold
Molds produce allergens. Even with otherwise healthy individuals, molds can irritate the eyes, skin, nose, throat, and lungs. With those who suffer from asthma, molds can cause asthma attacks. Some molds are toxigenic meaning they produce toxins, specifically mycotoxins [reference] which can even be fatal in some cases, especially with individuals with compromised immune systems. Most mold species will not grow in warm dry environments such as 78°F and 45% RH.

Dust Mites
Sensitization to the house dust mite is the most common risk factor associated with the development of asthma in adults and children. Again, dust mites do not like warm dry environments such as 78°F and 45% Relative Humidity (RH).

Bacteria & Respiratory Infections
In general, mid-range humidities (40-60% RH) are more lethal to airborne bacteria than low or high humidities.

Chemical Pollutants
Gases such as formaldehyde, sulfur dioxide and nitrogen dioxide created by out-gassing of materials, gas cooking stoves, etc. interact with water vapor to create respiratory irritants. Concentrations are proportional to RH and are up to three times higher at 70% RH than 30% RH.

Viruses
The effect of temperature and humidity on the viability of specific viruses depends on the viral molecular structure; however, in general, warmer temperatures and moderate humidity tend to minimize viral spread. Specifically for COVID-19, temperatures above 78°F with 75% RH minimize its spread.

78°F / 45% RH Sweet Spot
As shown in the figure above, the sweet spot for a healthy indoor environment is around 78°F and 45% RH. This condition stops mold from growing, dust mites from breeding, and minimizes the spread of many bacteria and reduces the effect of harmful chemicals.

Maintaining 78°F / 45%RH with the RH-Cube 18
This may come as a surprize to most, but during summer months, it is virtually impossible for an air conditioner on its own to create the condition 78°F and 45% RH. Air conditioners usually produce much cooler and damper conditions that actually promote mold, midew, dust mites, and allergens.

The only practical way to achieve 78°F and 45% RH during air conditioning season is to supplement your air conditioner with a dehumidifier, and of all the dehumidifiers available today, the most effective is also the most cost-effective one, Dewair’s RH-Cube 18. The RH-Cube 18 has the capacity to allow you to achieve precisely the humidity you desire. It operates independently of the air conditioner and does not affect the air temperature, unlike all competitors. With
the RH-Cube 18 you can set your thermostat and humidistat to any settings you desire and be confident that those settings will be maintained.

**Maintaining Unusual Conditions**

Because the RH-Cube decouples dehumidification from both heating and cooling, it can maintain virtually any humidity level that you may desire.

For instance, COVID-19 transmission is minimized at 78ºF (25ºC) with 75% RH and is measurably worse at either lower or higher humidities, as shown by the graph to the right. Tightly controlling this condition is a challenge for any HVAC system. Maintaining 78º F may require either heating or cooling depending on the time of day and similarly maintaining 75% RH may require either humidification or dehumidification.

Because the RH-Cube 18 dehumidifies without significantly affecting air temperature and operates independently, it is uniquely suited to this application. Achieving any condition is as simple as setting the thermostat and humidistat. No competitive dehumidifier has this capability.

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**REFERENCES**

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