

Healthy living with the Room Climate Hygrometer

The Room Climate Hygrometer displays easy-to-understand optimum values for indoor climate, depending on the season and room temperature. With the help of colored dial areas, rapid and accurate readings identify correct values for your health and environment.

During the heating season, the Room Climate Hygrometer has special value in helping prevent dangerous mold growth. Knowing and monitoring optimum temperature and humidity, you can adjust the heating and ventilation for a healthy indoor climate.

Follow these procedures:

1. Read the room temperature on the thermometer and assign the corresponding color to that temperature range:

Dark green = cool, 16 to 18° C (61 to 64° F)

Medium green = normal, 18 to 22° C (64 to 72° F)

Light green = warm, 22 to 24° C (72 to 75° F).

2. Determine which of the upper two colored scales to use depending on the season.

Use "Winter" (Winter) for average outdoor temperatures below +5° C (41° F)

Use "Herbst & Frühling" (Fall and Spring) for average outdoor temperatures between 5 to 15° C (41 to 59° F).

3. Now you can identify the optimum target range of your room humidity. It is marked on the upper scale by the section of green arc that matches the green shade of your room temperature.

Example: at 20° C (68° F) room temperature in winter, the relative humidity should be in the range of 40-50%. Relative humidity should not exceed 50%. If higher than 50%, you could reduce this value by ventilating the room.

Health risks in High Humidity

Medical studies in the last few years have confirmed that increased relative humidity in homes (well above 50 to 60%) increase the risk of asthma and allergies.

In contrast, low room humidity of 40-30% is harmless. During the winter, with very low outside temperatures, the relative humidity in a well ventilated room can periodically drop to below 30% without being harmful to health.

Most of the humidity in our homes during the heating season (October to April in the Northern Hemisphere) is created by our own activities.

Approximately ten liters of water per day on average are evaporated into a household of 3 to 4 persons from showers, laundry, cooking, and other activities, including breathing. When gaps in the windows and doors are tightly sealed to save energy costs and to reduce noise, this excess moisture must be removed by ventilation several times a day.

The average relative room humidity in the winter can be controlled by proper ventilation. Because cold outside air is dry, the humidity indoors is easily reduced by replacing some of this warm moist air with the dry outdoor air by ventilation. Short periods of high ventilation several times a day can accomplish this, such as opening doors or windows for short periods.

Depending on occupancy, each apartment (without air conditioning) requires ventilation several times a day for a healthy environment. Your Room Climate Hygrometer shows you exactly when there is a need for ventilation.

How to achieve a healthy humidity

The need to limit humidity for better health applies only during the heating season, starting in the autumn. It is recommended to maintain the room temperature at about 20° C (68° F). On the thermometer of the Room Climate Hygrometer this temperature is in the range 18 to 22° C (61 to 64° F), marked in medium green.

In winter

When the outdoors temperature is below approximately 5° C (41° F), the typical relative humidity indoors is about 40 to 50% — assuming normal air exchange and indoor temperatures of about 20° C (68° F). This humidity region is marked on your hygrometer in a medium green. If the humidity is higher than 50%, the room should be ventilated with more outside air.

During times of freezing temperatures outdoors, relative humidity of less than 40% indoors is quite common. Especially in older buildings with poor thermal insulation, 40-50% relative humidity (at approximately 20° C) must be considered the upper limit of acceptable humidities, because if this is exceeded for a long period of time the risk of mold will increase.

In autumn and spring

With milder temperatures, between 5 and 15° C, a higher relative humidity of 50 to 60% is permissible for room temperatures of about 20° C. This is the medium green region marked on your hygrometer.

Warmer rooms are relatively dry (bright green) and colder rooms are relatively moist (dark green). To prevent high humidity, do not let room temperature drop to below 16° C (61° F).

Obtain a healthy living environment through proper ventilation

When the windows start to fog up frequently, or signs of mold begin to appear, it is time to ask questions and check your conditions. The answers to the following questions will guide you to a healthier environment.

How often should you ventilate? This question will always be answered by your Room Climate Hygrometer. Whenever the hygrometer indicates higher moisture values than those associated with the green of the room temperature, it is time to ventilate the room.

How to ventilate? Effective air exchange takes place only with a wide-opened window or door in the room (called shock ventilation). Cross ventilation is not necessary. Just cracking a window open or tilting the top open will not adequately ventilate a room and it will waste energy.

How long to ventilate? Again, your Room Climate Hygrometer is your guide, as it will show the changes accomplished. In wintertime, with temperatures below 5° C, a maximum of 5 minutes should be sufficient. For milder temperatures between 5 to 15° C, about 10 to 15 minutes is required.

What about times I am gone from home during the day? Adequate ventilation once in the morning and once in the evening should maintain a healthy environment throughout the day. Remember to not turn the heat down too low during the times you are gone or sleeping. The minimum room temperature should be kept above 18 to 16° C.

Should I ventilate during fog or rain? Yes, fresh air is always good for a healthier environment. Besides, even very moist cool air during rain has lower moisture content than indoor air at room temperature.

What happens in the summer? Except in the cellar, every room can be ventilated as you like. The Room Climate Hygrometer can be used anywhere, anytime to monitor the humidity. The relative humidity indoors is always affected by the relative humidity and temperature outdoors. Ventilation is not often an issue in the summer, because (except for the cellar) the walls are sufficiently warm.

How to ventilate the cellar? Rooms in the cellar are at risk to humidity in the summer because warm outdoor air contains much moisture, which condenses on cold surfaces. Cellars and basement apartments should not be ventilated when the outdoor temperature is above 15° C (59° F).

Is laundry drying possible in an apartment? A drying room that can be ventilated continuously would be ideal for this in moderate outdoor temperatures. Without such a dedicated room, drying in an apartment requires a well heated room that can be well ventilated several times during the drying. The hygrometer provides ideal support for this process.

Where to place the hygrometer? To insure reliable measurements, select a place on the inner walls at an average height of 1 to 2 m above the floor. Avoid the cooler outside walls, as well as window areas, or near heaters, or in direct sunlight.

An alternative to wall mounting your hygrometer is to stand it up in a desk mount. It is then more easily located in a suitable open place when it will respond more quickly to air temperature and humidity changes. To insert the unit into the wood mount, it is best to tilt the base slightly forward so the unit can be lightly pressed directly down into the slot. Make sure it has firm grip in the mount and then place it in a location where it will not be disturbed.

About the "Room Climate Hygrometer"

The measurement accuracy is $\pm 3\%$ relative humidity in the range 25 to 100% relative humidity. The sensing element of the hygrometer is a specially treated synthetic fiber. In contrast to instruments using real hair, high measurement accuracy is guaranteed without maintenance.

Devices using real hair as a measuring element must be moistened and readjusted (as needed) monthly, otherwise their measurement accuracy decreases. This is also recommended for your Room Climate Hygrometer once a year. It is especially advantageous when longer times with low humidity occur. To accomplish this, wrap the whole hygrometer in a warm moist towel for about 30 minutes.

The hygrometer should not come in contact with hot water or steam during this process or at any time, because then the measurement accuracy cannot be guaranteed.

If the indicated humidities should ever differ from those of a known calibrated reference device, the zero point of the hygrometer can be adjusted to compensate for the difference. The zero-point correction screw is located in one of the side openings of the housing.