

## handheld, pocket-sized hydrometer, measures humidity, temperature, dew point and wet bulb globe temperature

This hydrometer has been developed to take quicker measurements of humidity and temperature. The PCE-555 hydrometer also offers a calculation of dew point and information about wet bulb globe temperature. This allows for the elimination of fungus in food storage, as well as in food transportation. It is also very useful in the construction industry in order to determine condensation in walls. Thanks to its solid design, this hydrometer is ideal for taking measurements in situ, so long as the humidity sensor is not touched, not manipulated or not placed directly into liquid as it is a very sensitive component. This table perfectly illustrates the relationship that exists between dry bulb temperature, wet bulb temperature and relative humidity.

- Fast response time
- High accuracy
- Simultaneous indication of temperature and humidity
- Automatic Stiwch-off
- Calculation of dew point and wet-bulb temperature
- Background lights
- Data memory of max. value
- Compact and light

### Technical specifications

|                      |  |
|----------------------|--|
| Measurement ranges   | 0 to 100% r.h.<br>-30 to 100°C         |
| Resolution           | 0.01% r.h.<br>0.01°C                   |
| Accuracy             | ±2.0% r.h. at 25°C<br>±0.5°C at 25°C   |
| Display              | dual LCD with 4.5 positions            |
| Battery              | 9V battery (PP3)                       |
| Response time % r.h. | about 10 sec. (90 % @ 25° C air temp.) |
| Dimensions           | 225 x 45 x 34mm                        |
| Weight               | 200g                                   |

### Examples of use for the PCE-555 hydrometer

With the PCE-555 hydrometer you can measure ambient conditions including humidity in the top portion of the LCD and temperature shown on the bottom. It also calculates wet bulb temperature and dew point, which are useful for calculating thermal stress. There is a small video to the right which shows the device measuring humidity and temperature. This [link](#) shows another hydrometer which can measure relative humidity, temperature, calculate dew point and has memory for storing readings. We also have another type of [hydrometer](#) which can measure relative humidity, temperature, calculate dew point and also measure absolute humidity with a sensor.

Dry bulb temperature is simply the environmental temperature. It's the temperature that is measured using any kind of thermometer.

Wet bulb temperature is determined by using a mercury thermometer which is situated in the shade with the bulb covered with a piece of wet fabric under a current of air, measuring, for example, a vent or a rotating electric fan. In this way, the evaporation of water absorbs heat, thereby lowering the temperature, which is reflected in the decrease in the temperature reading. The lower relative humidity is, the quicker the water in the fabric will evaporate and the further the resulting decrease with respect to the dry bulb temperature. (This is used to give an idea of thermal sensation)

Dew point is the temperature at which air vapour turns into condensation, producing dew or mist, or if the temperature is low enough, frost.

This link has more information about temperature and the most common units of measurement in the international system of measurement relating to temperature.

### **Delivery Content of the Hydrometer PCE-555**

PCE-555 hydrometers, carrying case, battery and user's manual