

## Rainfall

The most comprehensive network of stations managed by the Meteorological Service is that of rainfall. This is due in part to its relevance in every sector including agriculture, water, health, construction, tourism among others.

The two main types of instruments used are the **rain gauge** and the **data logger/tipping bucket**.



The rain gauge gives the total recorded rainfall for a 24 hour period while the data logger records the time of occurrence as well as the amount. Rainfall is measured in millimeters (mm).



## Sunshine



The number of hours of sunshine per day is also important in some sectors for example the construction industry. This parameter is measured by a **Campbell - Stokes Pattern Sunshine Recorder**.

## Conversion Table

From	To	Calculation
Celsius (C)	Fahrenheit (F)	Multiply by 1.8 then add 32. [(C) * 1.8] + 32 = (F)
Knots (kts)	Miles per hour (mph)	Multiply by 1.15 [Kts*1.15]
Millimeter	Inches	Divide by 25.4 [Mm/25.4]
Millibars	Inches of Mercury	Multiply by 0.02953 [mb*0.02953]

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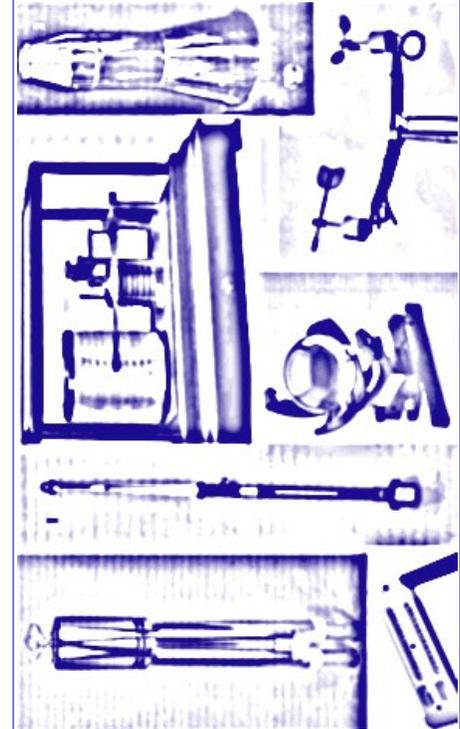
E-mail: [datarequest@metservice.gov.jm](mailto:datarequest@metservice.gov.jm)

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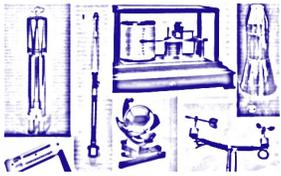


**Meteorological Service,  
Jamaica**

## *Meteorological Instruments*



## Meteorological Instruments



Temperature, relative humidity, rainfall, pressure and wind are the five fundamental weather elements

that affect our daily lives. The essence of weather forecasting, in short, is to predict the change of these elements. The accurate prediction of these elements in turn largely relies on how well we can measure their values. Other recorded parameters which are not directly related to the forecasting process but are used in the climatological section of the service include sunshine and evaporation.

### Temperature

Temperature is the degree of hotness or coldness of a body or environment. Temperature measurements are required, for weather analysis and prediction, hydrological and agricultural applications as well as for climate research.



The **aspirated hygrometer** is used to measure both wet and dry temperatures, which in turn are used to determine humidity.



The **thermometer** with which we are all familiar is used to measure air temperature. The four main types are maximum, minimum, wet and dry bulb. Temperature is measured in degrees Celsius ( $^{\circ}\text{C}$ ).

### Relative Humidity

Relative humidity is not a directly measured parameter and by this we mean that its determination is dependent on the measurement of another parameter. As was previously mentioned wet and dry bulb temperatures are required for the calculation of humidity and the **whirling hygrometer** is an ensemble of these thermometers. Relative humidity is recorded as a percentage. The wet and dry bulb readings are put onto a slide rule to determine the relative humidity value.



### Pressure



Pressure or atmospheric pressure is a measure of the force being exerted by air molecules at a particular location. A barometer is used to determine the pressure and the units used are millibars (mb). The standard type of barometer used by meteorologists is referred to as the **Kew Pattern Barometer**.

### Wind

Wind is defined as the flow of air or the flow of gases which make up the atmosphere. Wind has two components namely direction and speed. Direction is measured by a wind vane and recorded in degrees or represented by the cardinal points. Speed is measured by a cup or hand anemometer and recorded in knots as well as m/s or km/h.

