

The Clear Four Inch Gauge & Eight Inch NWS Gauge



In the picture above you see on the left, the outer cylinder with the inner cylinder insert and, on the right, the outer cylinder with the inner cylinder insert removed for snow measurements. The 4 inch clear plastic rain gauge is commonly used by CoCoRaHS and other weather observers to measure rainfall.

1. One of the most important things with rain gauges is the correct placement. Use open areas and strive to keep the gauge as far from obstacles as they are high. The gauge should be placed between two and five feet above the ground and that the lip of the cylinder is high enough from the mounting post that you don't have splash in off the top of the post.
Make sure the gauge is level.
2. It is very important to remove the inner cylinder if you expect snow and particularly if you expect sleet as some sleet will bounce out of the top of the gauge.
3. Measurements should be taken in hundredths of an inch and should be measured to the bottom of the meniscus.
4. If any precipitation is observed but is too small to be measured it should be called a trace.
5. Any moisture from dew should not be counted as precipitation as it did not fall from the cloud to the ground.

To measure greater than one inch . . .



Pour out the first inch from the inner tube and write it down.



Pour the remaining water into the funnel and measure the inner tube.



Continue until all of the water has been measured. Make sure you keep track of your measurements along the way.

6. If it has rained so much that water overflowed the inner cylinder into the larger cylinder, pour out the first inch of water from the inner cylinder and record the amount. Pour some of the remaining water of the larger cylinder into the funnel into the inner tube and measure the amount and record the measurement. Continue the above until all of the water has been removed from the large cylinder and measured in a small cylinder. Then add the sum of your measurements to get the total precipitation.

I have this rain gauge on the deck so I can look at and get an idea how much precipitation has occurred and if the tripping bucket gauge is correct. It is also used during snows because it can be changed out for another 4 inch gauge and brought in and melted to determine if the tripping bucket gauge is giving a true reading. During snows the heat source that melts the snow and the tripping bucket gauge most often causes some evaporation which causes the precipitation amount to be smaller than the actual amount. Therefore anyone having any tripping bucket gauge with a heater should definitely check it against a standing rain gauge to be sure it's accurate.



I included a picture of the measuring stick for the 8 inch National Weather Service standard rain gauge so that you can see the 0.01 inch markings on this measuring stick. Note the divisions on the measuring stick are actually in tenths of an inch not hundreds; this is because the area of the outer funnel is 10 times greater than the area of the inner cylinder. Thus one inch of precipitation would fill the inner cylinder to a depth of 10 inches. The stick is put down into the small cylinder and when withdrawn you can see to what level the stick was wet and determine the amount of precipitation. This 8 inch gauge is used to take my observations as it is in a very open area and gives the most accurate readings. Do not use a tripping bucket gauge for recording observations unless accuracy is not that important.