

Making accurate rain measurements

What height should I mount my rain gauge?

The higher that a rain gauge is mounted the more of an issue wind has on the measurement (as wind speed generally increases with height above ground). Higher wind can cause turbulence around the rain gauge which can cause the rain gauge to under report. For example a rain gauge at 10m height is likely to report only 80% of the catch compared to a gauge at ground level. The Australian Bureau of meteorology recommends mounting rain gauges at 0.3m off the ground. A gauge mounted at 1.8m will likely have a catch of 95% of a gauge mounted at 0.3m.

Why does my Nylex rain gauge report different amounts to my new weather station?

If you wish to compare your old Nylex rain gauge to your new weather station the first step is to make sure that they're situated next to each other (within 10-20cm) and at the same height. There is no point trying to compare your weather station on one side of the house (or on the roof) to a rain gauge on the other side of the house at a different height.

The next thing to consider is that most digital weather stations will reset at midnight, so if you check your gauges in the morning, the digital weather station will only have reported rain since midnight, but the manual gauge will have rain since it was last emptied.

Differences in gauge shape, and losses due to evaporation and splash in/out can also cause errors of up to 15% between gauges.

What other considerations should I take when mounting my rain gauge?

Where possible, avoid mounting your station near building, fences or trees. Failure to do so can result in serious errors. As a general rule, the distance of the gauge from obstructions should be at least 2 x the height of the obstruction, and preferably 4 times. For example, if a tree is 10m high, then the rain gauge should be located at least 20m away, and ideally 40m away.



It's also important to make sure that the rain gauge is mounted level, and fastened securely so that it doesn't blow around in strong winds.

Why has my rain gauge stopped reporting rainfall?

Most weather stations will have a tipping bucket (or spoon) rain gauge. These work by funnelling water onto two buckets on a pivot. When one bucket fills up it tips over and registers 0.2mm of rain. The second bucket can then fill up and tip back registering another 0.2mm of rain. If there is an obstruction to this mechanism then rainfall will not be recorded. Typical obstructions can be twigs or sticks, bird droppings, insect nests or spider webs. So if you notice your rain gauge has stopped working, the first thing to do is open it up and make sure that the tipping mechanism is able to work correctly.