Water Vapor Protocol Data Collection

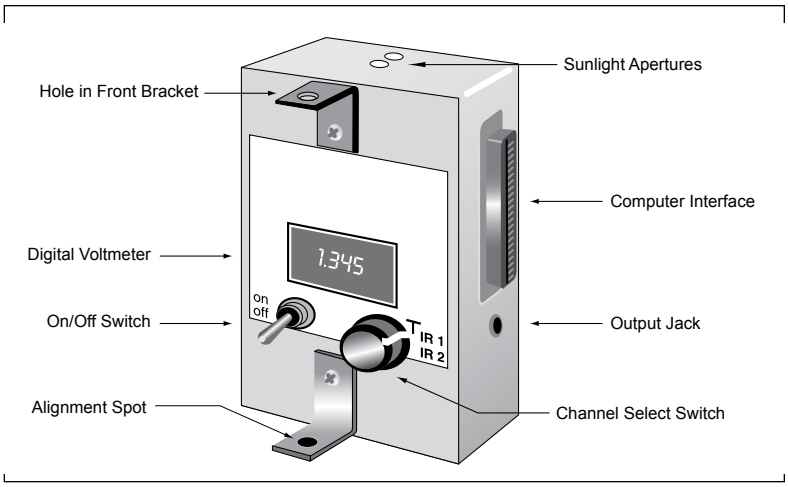
Field Guide

Task

- Record a set of maximum voltage readings obtained by pointing your water vapor instrument at the sun.
- Record the precise time of your measurements.
- Observe and record meteorological, cloud, and sky conditions.

What You Need

- ❑ GLOBE/GIFTS water vapor instrument
- ❑ *Water Vapor Data Sheet*
- ❑ Watch, preferably digital, or GPS receiver
- ❑ Digital hygrometer or sling psychrometer
- ❑ Pen or pencil
- ❑ GLOBE cloud chart
- ❑ Barometer
- ❑ Thermometer
- ❑ Field Guides for *Cloud Cover*, *Cloud Type*, *Air Temperature*, *Sling Pyschrometer*, *Digital Hygrometer Protocols* and *Barometric Pressure Protocol*



In the Field

1. Turn your instrument on.
2. Hold the instrument in front of you in a position where you can read the digital panel meter and can comfortably keep the sun spot shining through the front alignment bracket aligned on the rear alignment dot.
3. Set the rotary switch to T, read the voltage and multiply this reading by 100 and record it under case temperature on your *Water Vapor Data Sheet*.
4. Set the rotary switch to IR1.
5. Adjust the aim of your instrument until the spot of sunlight coming through the front alignment bracket is centered on the colored alignment dot on the rear bracket. Wait 2-3 seconds. Then, always keeping the spot of sunlight centered on the alignment dot, observe the voltage displayed on the voltmeter during the next 10-15 seconds and record the maximum voltage in the “sunlight voltage” column of your *Water Vapor Data Sheet*.

6. Record the time at which you took the measurement as accurately and precisely as possible.
7. While still pointing your instrument at the sun, cover the sunlight apertures with your finger to block all light from entering the case. Record this reading in the “dark voltage” column on the *Data Sheet*.
8. Set the rotary switch to IR2 and repeat steps 5-7.
9. Repeat steps 4-8 at least two and no more than five more times.
10. Set the rotary switch to T, read the voltage and multiply this reading by 100 and record it under case temperature on your *Water Vapor Data Sheet*.
11. Turn off your instrument.
12. Note any clouds in the vicinity of the sun in the *Comments* section of the *Water Vapor Data Sheet*. Be sure to note the type of clouds by using the GLOBE Cloud Chart.
13. Do the Cloud Protocols and record your observations on the *Water Vapor Data Sheet*.
14. Read and record the current air temperature to the nearest 0.5˚ C following one of the air temperature protocols. Be careful not to touch or breathe on the thermometer.
15. Perform the *Relative Humidity Protocol* and record the results on the *Water Vapor Data Sheet*.
16. Complete the *Water Vapor Data Sheet*.