



RainVUE20

SDI-12 Precipitation Sensor with Aluminum Funnel



Simple and Robust Digital Sensor

Overview

The RainVUE™20 is ideal for many hydrological or meteorological applications such as weather stations and flood warning systems. The RainVUE™20 is an SDI-12 tipping bucket rain gage in the RainVUE family of products. Advanced algorithms and digital processing within the sensor compensate for errors caused by high-intensity rain and provide accurate precipitation and intensity measurements.

Constructed of an aerodynamic powder-coated aluminum funnel, the RainVUE™20 is robust and minimizes the amount of liquid precipitation that is lost due to the effects of wind. This rain gage offers the user flexibility with the option to select from a series of set cable lengths or a user-defined cable length.

Benefits and Features

- ▶ Powder-coated aluminum bucket suitable for all environments
- ▶ Extremely robust and versatile for applications where data precision and accuracy are critical
- ▶ Unique aerodynamic shape to minimize wind effects and increase accuracy
- ▶ Measures precipitation intensity up to 1500 mm/h (60 in./h)
- ▶ Meets WMO recommendations for funnel area
- ▶ Digital processing corrects for high-intensity precipitation errors up to 1500 mm/h (60 in./h)
- ▶ Tilt measurement for remote diagnostics on the sensor
- ▶ Internal temperature measurement
- ▶ Easy leveling with external leveling bubble
- ▶ Adjustable mounting feet to simplify leveling

Detailed Description

The RainVUE™20 funnels rainfall through a stainless-steel gauze filter that traps and removes debris. The rainfall flows through a nozzle into one of the two halves of the tipping bucket. The internal tipping bucket assembly rotates around precision, rolling pivot bearings, it tips when the first bucket fills to a fixed calibrated level, and then the balance arm moves the second

bucket under the funnel. A magnet attached to the balance arm actuates a reed switch as the bucket tips.

The aerodynamic design of the RainVUE™20 prevents wind from carrying the rainfall away from the collecting vessel. With traditional cylindrical rain gages, wind can reduce the rainfall catch by up to 20%. The RainVUE™20 also includes a



microprocessor that corrects for rainfall intensity and outputs

an SDI-12 signal.

Specifications

Sensor Type	Tipping bucket with magnetic reed switch
Material	» 2 mm-thick powder-coated aluminum (for main collector body) » LM6 marine-grade aluminum (for base)
Output	SDI-12 version 1.4
Rainfall Intensity	1500 mm/h (60 in./h)
Operating Temperature Range	1° to 70°C
Rainfall per Tip	0.254 mm (0.01 in.)
Current Drain	» 0.8 mA or 1 mA (active) » 0.07 mA (quiescent)

Measurement Uncertainty	» $\pm 1\%$ (0 to 500 mm/h intensity of rainfall) » <i>Note: Accuracy over the rain intensity range requires a mechanical calibration that is within 1% at a 1 in./h intensity. RainVUE™20 sensors are calibrated at the factory to meet this specification but should be verified prior to deployment.</i> » $\pm 1^\circ$ (tilt) » $\pm 0.25^\circ\text{C}$ (temperature) » $\pm 0.5\text{ V}$ (supply voltage)
Orifice Diameter	20.0 cm (7.87 in.)
Height	43.5 to 46.5 cm (17.1 to 18.3 in.) with feet adjustment
Weight	6 kg (13 lb)

For comprehensive details, visit: www.campbellsci.com/rainvue20 



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