



MUIR MATHESON
WEATHER MONITORING

PWS100 Visibility and Present Weather Sensor

The PWS100 improves upon current laser based precipitation monitors by using industrial Doppler Anemometry techniques originally developed to measure the size and velocity of fine particles in sprays. A laser light source is used to form a structured detection volume consisting of four evenly spaced parallel light sheets. Particle velocity is measured directly from the time between each scattering of light as the particle falls through each sheet. Knowing this, it is possible to use the shift in the fringe patterns between the two detectors of the PWS100 to calculate liquid particle size more accurately than has previously been possible. As a consequence the PWS100 is able to determine droplet size to 0.1mm and better distinguish between Rain and Drizzle. With four parallel light sheets rather than the usual one the PWS100 is also able to discriminate more clearly between polycrystalline precipitation and rain. The increase in random scatter caused by polycrystalline particles generates a distinct "pedestal" in the received signal.

Manufacturer

Campbell Scientific

Range

0 to 20,000m

Accuracy

± 10% to 10,000m

Rain rate intensity range

0 to 400mmh

Operating Environment

-25°C....+50°C (Temperature)
Extended range -40°C....+70°C

Output

Communication:RS-232, RS422, RS-485.
Baud rate selectable from 300 bps to 115.2kps

Power supply

Mains, battery or solar

Power requirement

DSP Power 9-24 VDC, or 9-16 VDC with external temperature and RH sensors.
(200 mA—1A)
Optional hood heaters 24 V AC or DC, 7 A.

Dimensions

1150mm x 700mm x 400mm

Weight

8Kg excluding mounting pole and AC power supply

External Sensors Option

Optional external temperature/RH sensor available.

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