

PAR-1/PAR-1 (M) Light Probe

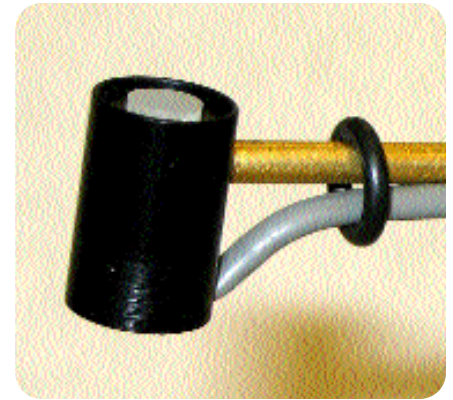


PAR-1

For over 20 years, PP Systems has been manufacturing high quality instrumentation for researchers worldwide. We currently offer two probes for accurate measurement of quantum flux of PAR (Photosynthetically Active Radiation) for use with our range of CO₂ infrared gas analyzers.

The PAR-1 probe forms a self-contained unit for portable or static operation. The sensor and conditioning circuit are mounted in a waterproof aluminium housing. The base of the PAR-1 probe has a threaded hole that is compatible for use with standard camera tripod stand for easy mounting.

The PAR-1 (M) miniature probe is extremely compact in size making it an ideal choice for leaf cuvette or canopy measurements where size is of great importance. A separate sensor conditioning unit (PAR-1 E) is available for use with the PAR-1 (M) and can be situated at a site remotely from the actual sensor.



PAR-1 (M)

This rugged probe consists of a silicon photodiode mounted with filters and a diffuser in a rugged housing. The housing is designed to give the sensor a good cosine corrected response to light coming from oblique angles.

By careful choice of the diffuser material, glass absorption filter and the near infrared (NIR) cut-off interference filter, the sensor response is tailored to be proportional to the number of incident photons between 400 and 700 nm. The acceptance angle of the diffuser is 180°. However, the light incident on the interference filter is restricted to a 50° cone to ensure that it gives a sharp cut-off at 700 nm.

Probe Features

- Small size enables point measurement of incident radiation
- Based on filtered silicon diode
- Fast response tailored to the photon flux between 0.4 and 0.7 microns

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Technical Specification

Probe Construction	Anodized aluminium
PAR Sensor	Silicon photodiode
Diffuser	Acrylic material selected for neutral absorption in the visible range and short wavelength Optical glass absorption filter and near infrared cut-off interference filter
Temperature Error	Generally < 1% per °C.
Measurement Range	0-3,000 $\mu\text{mol m}^{-2} \text{s}^{-1}$
Precision	10 $\mu\text{mol m}^{-2} \text{s}^{-1}$
Calibration Interval	Every 2 years. Calibration to be performed with a standard lamp whose calibration is traceable to national standards.
Power Supply	PAR-1: 7.5V-12V DC @12mA (Unregulated) PAR-1 (M): Requires PAR-1 (E)
Output	PAR-1: 0-1V = 0-3,000 $\mu\text{mol m}^{-2} \text{s}^{-1}$ PAR-1 (M): Unconditioned photodiode current
Connector	PAR-1: 1m cable fitted with appropriate connector PAR-1 (M): 10 cm of cable with flying leads. Other cable lengths are available upon request.
Operating Temperature	5-40° C
Dimensions	PAR-1: 40mm (Diameter) x 49mm (Height) PAR-1 (M): 10mm (Diameter) x 16mm (Height)
Weight	PAR-1: 145 g. (excluding cable) PAR-1 (M): 5 g. (excluding cable)

PP Systems is continuously updating its products and reserves the right to amend product specifications without notice.