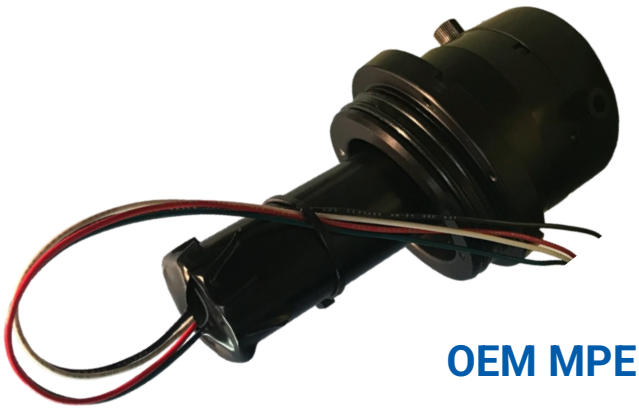
BIOSPHERICAL INSTRUMENTS

MPE

MICRO Profiling Irradiance PAR Sensor



OEM MPE

Standard MPE

MPE (**M** (MICRO) **P** (Profiling) **E** (Irradiance) PAR Sensor) is the-state-of-art upgrade to our Single-Channel Radiometers. Based on our microradiometer technology, the MPE delivers improved performance in a more compact design. Despite its smaller size, the MPE offers increased dynamic range and rapid sampling options, ensuring enhanced detection in any environment.

This MPE comes in standard form factor or custom OEM configurations for seamless integration into gliders & floats.

Miniaturized for increased deployment possibilities

OEM Configurations for optimized integration into Argo profiling floats

Low Power Consumption for extended missions, lighter platforms

Microradiometer Technology provides increased sensitivity allowing sensors that measure beyond the PAR spectral range. Available in 10nm wavebands from 395nm to 1000nm

Learn More At **www.biospherical.com**
Contact Us **sales@biospherical.com**

San Diego, California

MPE Specifications

Optical Specifications

Irradiance Collector: Cosine-corrected acrylic diffuser optimized for in-water measurements.
Directional Response: Deviations from the ideal in-water cosine response:
< ± 3% for incidence angles < 65°
< ± 13% for incidence angles 65° to 80°

Physical Specifications

Housing: Hard anodized-aluminum
Dimensions
Housing Tube: 1.2in diameter
7.3in length
Cosine Top: 2in diameter
Weight: 0.62lb in air, 0.26lb in salt water
Connector: MCBH4M
Depth Rating: 2,000m
Temperature Range: -10 to 50°C

Electronic Specifications

Power Requirement: 6-36 V DC
Less than 6 mA
Supported Data Rates: up to 230,400 baud
Communication Interface: RS-232

Software

Data Output: Digital Output
Data Format Options: ASCII text, binary or hexadecimal
Software: BSI's uLoggerLight or Terminal Emulation Program

Accessories

Waterproof cables available in custom lengths up to 100m; USB to Serial Power Booster.

Microradiometer Specifications

Detectors: High-reliability silicon photodiode designed for precision radiometry.

Photocurrent-to-Voltage Conversion: 3 Gain stage amplifier—1, 200, and 40,000.

System Bandwidth: Nominally 20 Hz for a sine wave source function.

Time Constant: Exponential change with a time constant of < 0.1s. Time required for a gain change is <0.1s.

Dynamic Range: Approx. 10 orders of magnitude

Linearity: Typically non-linearity are < 1% compared to a reference system electrometer.

Detection limit: typically 2.5×10^{-10} µE cm^{-2} s^{-1}.

Dark current temperature coefficient: typically $\pm 7 \times 10^{-11}$ µE cm^{-2} s^{-1} per °C.

Responsivity temperature coefficient: less than 0.05% per °C.

Temperature Compensation: A dedicated digital temperature sensor monitors the temperature of the microradiometer and can be used for algorithmic temperature compensation of recorded data. Temperature data is optionally included in the data stream and has a resolution of 0.41 °C.

Saturation: 4 µE cm^{-2} s^{-1} when immersed in water.