Chelsea Technologies
A SONARDYNE GROUP COMPANY

# PAR Sensor

Highly sensitive irradiance measurements to 1000 m water depth

# PAR Sensor Highly sensitive irradiance measurements

**Gather highly sensitive data on light irradiance with the Chelsea PAR sensor.**

With a depth rating of 1000 m, the PAR sensor can be fitted to profiling systems or oceanographic moorings to get a complete picture of the photic zone.

The long term calibration stability and titanium corrosion-resistant housing make it ideal for long term deployments on vehicles or wider instrumentation systems in all water environments.

**How does it work?**

Light is efficiently collected by a PTFE 2p Scalar Collector, supported by a clear acetal dome, and is directed onto a photodiode via a filter from which a (1+cosΘ)/2 response is obtained. With use of logarithmic amplification, the sensor covers a range of 6 orders of magnitude. The sensors input (7 to 20 Vdc) and output 0 to 5 V range (covering 3000 to 0.002μEm$^{-2}$s$^{-1}$) lends for ease of integration to standard oceanographic data acquisition systems.

## Features

- **High sensitivity**
- **Long term calibration stability**
- **Logarithmic 6 Decade range**
- **Wide angular detection range**
- **1000 m depth rating**
- **Corrosion resistant housing**

## Applications

- **Sea-truthing of satellite data**
- **Oceanographic and environmental studies**
- **Referencing primary productivity measurements**
- **Referencing *in situ* fluorometer measurements**

## Specifications

| | |
|---|---|
| Size | Ø 50 mm x 130 mm |
| Material | PTFE, Acetal and Stainless Steel |
| Weight | 0.85 kg in air/0.5 kg in water |
| Max operating depth | 1000 m |
| Input voltage | 7-20 V |
| Output | 0-5 Vdc |
| Range | 3000 to 0.002μEm$^{-2}$s$^{-1}$ (E=6.023 x $10^{23}$ quanta) |
| Relative spectral | Flat to ±3% from 470-700 nm, down |
| Sensitivity | 8% of 400 nm and 36% at 350 nm |
| Angular detection range | ±130° from normal incidence |
| Operating temperature | -2°C to + 32°C |
| Storage temperature | -40°C to + 70°C |
| Connector | VSG-4-BCL |

*In view of our continual improvements, the designs and specifications of our products may vary from those described.

Chelsea Technologies

Chelsea Technologies Ltd
55 Central Avenue | West Molesey | Surrey KT8 2QZ | United Kingdom
**T** +44 (0)20 8481 9000 | **E** sales@chelsea.co.uk | **W** chelsea.co.uk

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