



BIOSPHERICAL INSTRUMENTS

C-PrOPS

Compact Propulsion Option Profiling System



C-PrOPS™ (Compact-Propulsion Option for Profiling Systems) is a next-generation upgrade to our C-OPS free-fall profiler using state-of-the-art digital thrusters, allowing **3-dimensional position control** and tunable descent rates to put you in control of every deployment.

Engineered for high precision environments—such as nearshore zones and confined waters. C-PrOPS™ delivers stable, accurate profiling for oceanographic and water quality research.

Single Operator Deployable ROV for Quick and Easy Deployments

Fast Sampling Rates for Rapid Environmental Awareness during Maritime Operations and Near-Shore Missions

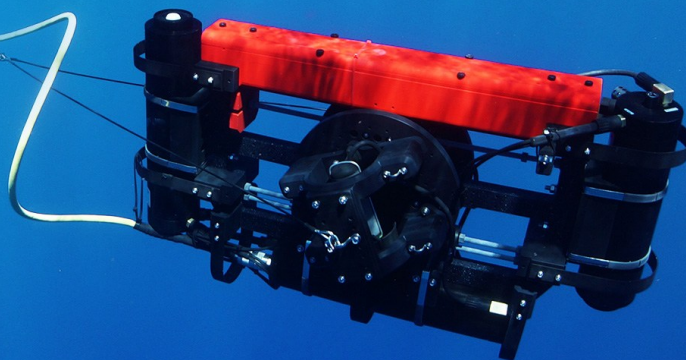
19 Channel Waveband Radiometers to Meet Any Environmental Surveying or Defense Applications

Depth and Temperature Sensing for complete system awareness and more precise data products.

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

San Diego, California

C-PrOPS Specifications



Microradiometer Specifications

Detectors: Si (13 mm²) - High reliability silicon photodiode designed for precision radiometry

Photocurrent-to-Voltage Conversion: Electrometer amplifier with three gain stages—1, 200, and 40,000.

ADC: 24-bit bipolar: 4–125 Hz data rates. **Dynamic Range:** 9 decades

Linearity: Typically, errors are < 1% compared to a reference system electrometer.

3 Stage Gain Ratio: Pre-programmed into each Microradiometer

Speed: ADC sample rate is programmable from 4–125 Hz, and is normally set to 125 Hz, with averaging over the sampling period performed internally by the microradiometer.

Response Time: Exponential change with a time constant of < 0.01 s. Time required for gain change is < 0.1 s.

Electronic Sensitivity: ADC resolution is 0.5 μ V with a current resolution of < 10E-15A. The saturation current is 160 μ A. The 3-gain signal-range is 1.6 x 10E11, defined as the saturation signal divided by minimum resolvable signal.

Noise: Nominal Si detector : 15–20 fA of noise at a data rate of 5 Hz.

Optical Sensitivity: Spectral range and front end optics dependent. It is expressed as Noise Equivalent Signals at 5 Hz for radiance (μ W cm⁻² nm⁻¹ sr⁻¹) and irradiance (μ W cm⁻² nm⁻¹):

<u>Channel</u>	<u>NER</u>	<u>NEI</u>
320 nm	2.9×10^{-6}	9.0×10^{-5}
395 nm	5.0×10^{-6}	6.9×10^{-5}
490 nm	1.8×10^{-6}	2.3×10^{-5}
683 nm	9.9×10^{-7}	1.1×10^{-5}
780 nm	6.8×10^{-7}	8.0×10^{-6}

Physical Specifications

In water Instrument:

Dimensions: 28 in x 13.5 in x 16 in

Weight 26.5 lb

Full Surface Reference:

Dimensions: 13.5 in x 11 in x 16 in

Weight 15.5 lb

Radiometer:

Dimensions: 2.75 in diameter

Wavelength Selection: 305nm—805nm

Filters with maximum long-term stability

Free Fall Decent Rate

Adjustable: <5 cm/s to 35 cm/s

Thruster Decent Rate: Variable with Thruster Control

Depth Rating: up to 300 m (connector dependent)

Temperature Range: -10 to 50°C

Electronic Specifications

Power Requirement: AC Power

100-240V, 50-60Hz <700W

Individual Thruster Draw: <1A

Wireless Range: 23 m

System Speed:

Single Radiometer: 30 Hz

3 Radiometer System: 15 Hz

Data Rate: 115,200 baud

Accessories

Radiometrically Matching Surface Reference

BioSHADE Shadowband

BioGPS

Custom Cable Lengths up to 125m