

## PAR AND NARROW-BAND RADIOMETERS



LOW POWER,  
HIGH PERFORMANCE

The RBRcoda<sup>3</sup> PAR and RBRcoda<sup>3</sup> rad optical radiometers feature a wide dynamic range, optimized cosine response, and excellent low-light detection, making them ideal for both moored and profiling applications. The sensors are easy to integrate into any RBR multi-parameter instrument, or connect directly via RS-232.

### FEATURES



Low power  
consumption



High  
accuracy



Wide  
dynamic range



Depths up to  
2000m



RS-232  
output



Compact and  
lightweight

### Realtime streaming sensor configurations:

- ▶ RBRcoda<sup>3</sup> PAR      photosynthetically active radiation, uniform response between 400nm and 700nm, depths up to 1000m
- ▶ RBRcoda<sup>3</sup> PAR|deep      photosynthetically active radiation, uniform response between 400nm and 700nm, depths up to 2000m
- ▶ RBRcoda<sup>3</sup> rad      narrow-band radiation, variety of narrow-band channels, depths up to 1000m
- ▶ RBRcoda<sup>3</sup> rad|deep      narrow-band radiation, variety of narrow-band channels, depths up to 2000m

The RBRcoda<sup>3</sup> PAR sensor provides uniform response to light in the PAR spectral range, while the RBRcoda<sup>3</sup> rad is available in a variety of wavebands.

## PAR AND NARROW-BAND RADIOMETERS

### LOW POWER, HIGH PERFORMANCE

#### Specifications

##### Physical

Connector	MCBH-6-MP
Diffuser	Acrylic
Housing	Plastic or titanium
Diameter	~25mm
Length	~270mm (with connector)
Depth rating	1000m (plastic), 2000m (Ti)
Weight	170g in air, 40g in water (plastic) 330g in air, 200g in water (Ti)
Sampling rate	Up to 16Hz

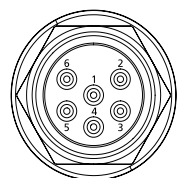
##### Power

Supply voltage	6V to 18V (12V nominal)
Sampling	77 mJ/sample (1Hz or slower) 15mA/180mW (2Hz or faster)

##### Interface

RS-232 polled or autonomous streaming
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##### MCBH-6-MP connector pinout



- ▶ Pin 1 - Ground
- ▶ Pin 2 - Power
- ▶ Pin 3 - Serial data from sensor
- ▶ Pin 4 - Serial data to sensor
- ▶ Pin 5 - N/C
- ▶ Pin 6 - N/C

##### Optical radiometry

Dynamic range	>5.5 decades
Initial accuracy <sup>1</sup>	±2%
Linearity	±1%
Operating temperature range	-5°C to 35°C
Cosine response error (water)	±5% at 0-60°C, ±10% at 61-82°C
Azimuth error (water)	±1.5% at 45°C
Out-of-band rejection <sup>2</sup>	>25dB (typical), OD 2.5

<sup>1</sup> RBR calibrates radiometers with NIST traceable references.

<sup>2</sup> Out-of-band rejection is wavelength-dependent for narrow-band radiometers.

##### Photosynthetically active radiation

Wavelength range	400nm to 700nm
Full scale range	0-5000µmol/m <sup>2</sup> /s (minimum)
Resolution	±0.010µmol/m <sup>2</sup> /s

##### Narrow-band wavelength channels

Centre wavelengths (CWL) <sup>3</sup>	380 / 413 / 445 / 475 / 488 / 508 / 532 / 560nm
Full width at half-maximum	10nm (25nm for CWL 475nm)
Full scale range	0-400µW/cm <sup>2</sup> /nm (minimum)
Resolution <sup>4</sup>	±0.001µW/cm <sup>2</sup> /nm

<sup>3</sup> Other CWL options within the 300-1100nm range are available upon request. Contact RBR for more information.

<sup>4</sup> Resolution is wavelength-dependent for narrow-band radiometers.

*Note: Dark offset is internally temperature-compensated.*

##### Sensor pack variants

Sensor pack variants of RBRcoda<sup>3</sup> PAR and RBRcoda<sup>3</sup> rad are available to integrate with RBR standard instruments.



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