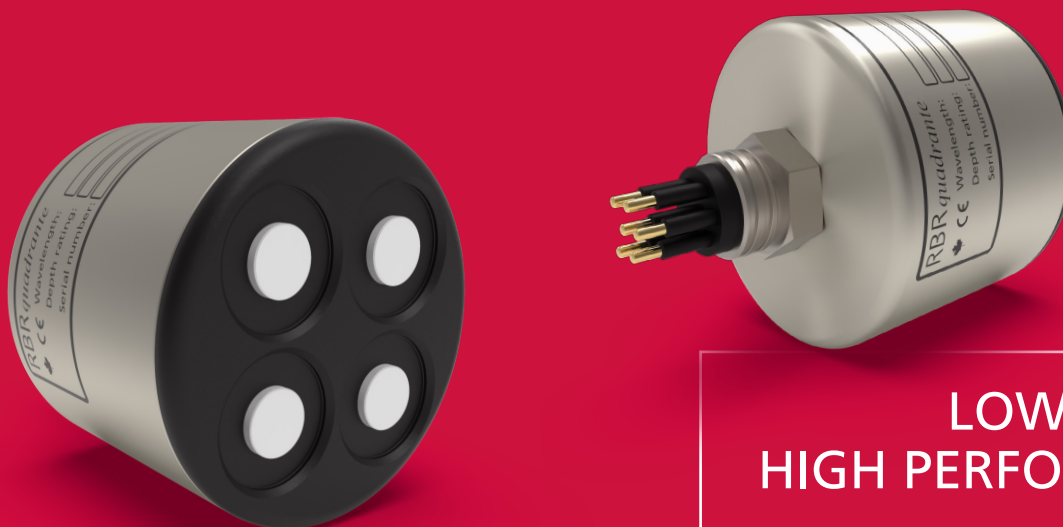


## FOUR-CHANNEL RADIOMETER



**LOW POWER,  
HIGH PERFORMANCE**

The RBR*quadrante* is a multi-spectral radiometer with four channels, capable of measuring multiple wavebands simultaneously, including PAR. It features a high dynamic range, optimized cosine response, and excellent low-light detection, while power consumption and depth rating have been tailored for use in a wide variety of applications.

### FEATURES



Low power  
consumption



High  
accuracy



High  
dynamic range



Depths up to  
2000m



RS-232  
output



Compact and  
lightweight

The following channels are available in the RBR*quadrante*:

- ▶ PAR (photosynthetically active radiation), uniform response over 400-700nm
- ▶ 10nm and 25nm wide channels from 413nm to 560nm

The RBR*quadrante* supports measurement of four wavebands within the same sensor package. Tolerant of a wide-ranging power supply, data are streamed via RS-232 on the MCBH-6-MP connector. The size makes this sensor compatible with existing vehicle payload bays.

## FOUR-CHANNEL RADIOMETER

### LOW POWER, HIGH PERFORMANCE

#### Specifications

##### Physical

Connector	MCBH-6-MP
Depth rating	2000m
Housing	Titanium
Diameter	63mm
Length	57mm, 93mm (with connector)
Weight	400g (in air), 210g (in water)
Sampling rate	up to 32Hz

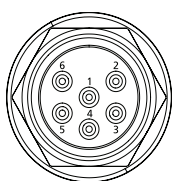
##### Power

Supply voltage	4.5V to 30V (12V nominal)
Sampling	3mJ/sample (1Hz)
Power consumption	3mA at 12V
Sleep current	10µA at 12V

##### 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

##### Radiometer

Initial offset error <sup>1</sup>	±0.0025% full scale
Resolution <sup>2</sup>	±0.0002% full scale
Dynamic range	>5.5 decades
Absolute calibration <sup>3</sup>	±5%
Linearity	±1%
Time constant	<5ms
Operating temperature range	-5°C to 35°C
Gain temperature dependence	±0.15%/°C
Cosine response error (water)	±5% at 0-60°, ±10% at 61-82°
Azimuth error (water)	±1.5% at 45°
Out-of-band rejection <sup>2</sup>	>25dB (typical), OD 2.5

##### Photosynthetically active radiation

Wavelength range	400 to 700 nm
Full scale range	0-5000µmol/m²/s (minimum)
Initial offset error <sup>1</sup>	±0.125µmol/m²/s
Resolution	±0.010µmol/m²/s

##### Narrow-band wavelength channels

Centre wavelengths (CWL)	413 /445 /475 /488 /508 /532 /560nm
Accuracy (for CWL)	±3nm (for all CWLs except 475nm) ±5nm (for CWL 475nm only)
Full width at half-maximum (FWHM)	10nm (for all CWLs except 475nm) 25nm (for CWL 475nm only)
Accuracy (for FWHM)	±3nm
Full scale range	0-400µW/cm²/nm (minimum)
Initial offset error <sup>1</sup>	±0.010µW/cm²/nm
Resolution <sup>2</sup>	±0.001µW/cm²/nm

<sup>1</sup> Dark offset is internally temperature-compensated.

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

<sup>3</sup> RBR calibrates radiometers with NIST traceable references.

##### Instrument integration

The RBRquadrante can be easily added to any RBR instrument alongside the CTD and other sensors.

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