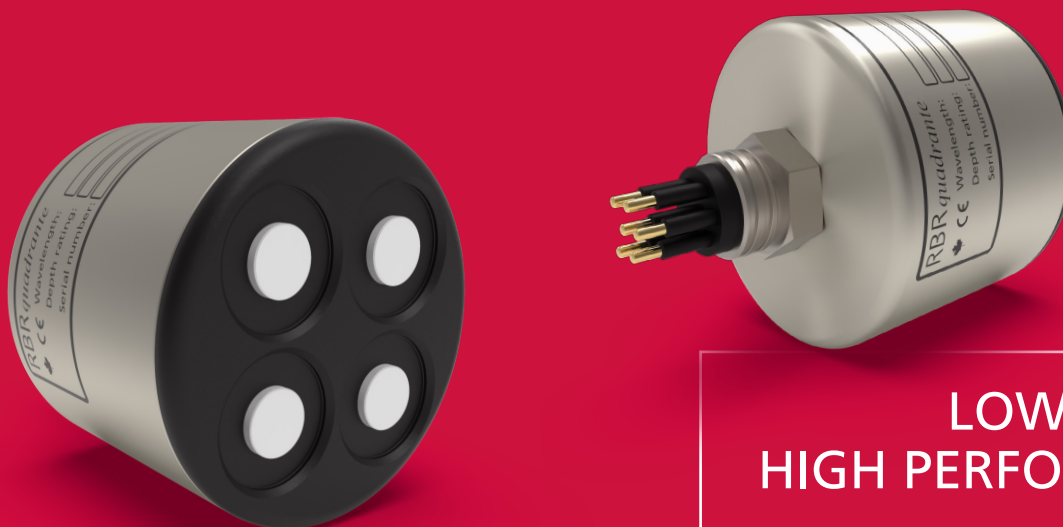


FOUR-CHANNEL RADIOMETER



**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 between 400nm and 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

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Specifications

Physical

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

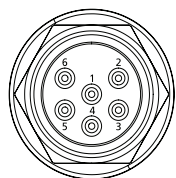
Power

Supply voltage	4.5V to 30V (12V nominal)
Sampling	4mJ per sample (4Hz or slower) 3mA/36mW (8Hz or faster)
Sleep current	10µA

Interface

RS-232 polled or autonomous streaming

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
Absolute calibration ¹	±5%
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 ²	>25dB (typical), OD 2.5

¹ RBR calibrates radiometers with NIST traceable references.

² 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 ² /s (minimum)
Initial offset error ¹	±0.125µmol/m ² /s
Resolution	±0.010µmol/m ² /s

¹ Dark offset is internally temperature-compensated.

Narrow-band wavelength channels

Centre wavelengths (CWL)	413 /445 /475 /488 /508 /532 /560nm
Accuracy	±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)
Full scale range	0-400µW/cm ² /nm (minimum)
Initial offset error ¹	±0.010µW/cm ² /nm
Resolution ²	±0.001µW/cm ² /nm

¹ Dark offset is internally temperature-compensated.

² Resolution is wavelength dependent for narrow-band radiometers.

Instrument integration

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



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