

## RAMSES

40SXXX010



### Spectral imaging radiometer to measure radiance or irradiance in UV, VIS and UV/VIS

RAMSES radiometers are spectral imaging radiometers to measure radiance, irradiance, or scalar irradiance in the UV, VIS and UV/VIS ranges. Thanks to their ultra small size and weight as well as very low power consumption, they are especially suitable for hand-held and autonomous applica-

tions. RAMSES radiometers combine precision hyperspectral light measurements with a maximum of flexibility. The modular system increases cost-effectiveness, while the many accessories and special solutions enable a wide range of applications such as installation on ships, handheld usage or autonomous measurements in remote places, like the Arctic or Antarctic.

### Benefits

- Extremely low power consumption
- Environmentally robust
- World market leader

### Applications

- Water quality
- Field measurements
- Satellite validation
- Biology
- Photosynthesis
- Colour measurements
- Climate research

	ACC-UV	ACC-VIS	ARC-VIS	ASC-VIS
	UV A / UV B irradiance	UV/VIS irradiance	UV/VIS radiance	UV/VIS scalar irradiance
<b>Wavelength range*</b>	280 - 500 nm	320 - 950 nm		
<b>Detector*</b>	256 Channel silicon photo diode array			
<b>Pixel dispersion*</b>	2.2 nm/pixel	3.3 nm/pixel		
<b>WL accuracy*</b>	0.2 nm	0.3 nm		
<b>Usable channels</b>	100	190		
<b>Typical saturation (IT: 4 ms)**</b>	20 W m <sup>-2</sup> nm <sup>-1</sup> (at 300 nm) 17 W m <sup>-2</sup> nm <sup>-1</sup> (at 360 nm) 18 W m <sup>-2</sup> nm <sup>-1</sup> (at 500 nm)	10 W m <sup>-2</sup> nm <sup>-1</sup> (at 400 nm) 8 W m <sup>-2</sup> nm <sup>-1</sup> (at 500 nm) 14 W m <sup>-2</sup> nm <sup>-1</sup> (at 700 nm)	1 W m <sup>-2</sup> nm <sup>-1</sup> sr <sup>-1</sup> (at 500 nm)	20 W m <sup>-2</sup> nm <sup>-1</sup> (at 400 nm) 12 W m <sup>-2</sup> nm <sup>-1</sup> (at 500 nm) 15 W m <sup>-2</sup> nm <sup>-1</sup> (at 700 nm)
<b>Typical NEI (IT: 8 s)**</b>	0.85 μW m <sup>-2</sup> nm <sup>-1</sup> (at 300 nm) 0.75 μW m <sup>-2</sup> nm <sup>-1</sup> (at 360 nm) 0.80 μW m <sup>-2</sup> nm <sup>-1</sup> (at 500 nm)	0.4 μW m <sup>-2</sup> nm <sup>-1</sup> (at 400 nm) 0.4 μW m <sup>-2</sup> nm <sup>-1</sup> (at 500 nm) 0.6 μW m <sup>-2</sup> nm <sup>-1</sup> (at 700 nm)	0.25 μW m <sup>-2</sup> nm <sup>-1</sup> sr <sup>-1</sup>	0.8 μW m <sup>-2</sup> nm <sup>-1</sup> (at 400 nm) 0.6 μW m <sup>-2</sup> nm <sup>-1</sup> (at 500 nm) 0.8 μW m <sup>-2</sup> nm <sup>-1</sup> (at 700 nm)
<b>Collector type</b>	cosine response		FOV: 7° in air	Spherical, 2 Pi
<b>Accuracy</b>	Better than 6-10 % ***		Better than 6 % ***	Better than 5 % ***
<b>Integration time</b>	4 ms - 8 s			

\*) Specifications of Carl ZEISS AG, Germany

\*\*) IT: integration time

\*\*\*) Depends on wavelength range

## Technical Specifications

<b>Measurement technology</b>	detector	High-end miniature spectrometer
		256 Channels
<b>Measurement principle</b>		Radiance or irradiance
<b>Parameter</b>		See parameter list
<b>Measuring range</b>		See parameter list
<b>Measurement accuracy</b>		See parameter list
<b>Data logger</b>		-
<b>T100 response time</b>		≤ 10 s (burst mode)
<b>Measurement interval</b>		≤ 8 s (burst mode)
<b>Housing material</b>		Stainless steel (1.4571/1.4404) or titanium (3.7035)
<b>Dimensions (L x Ø)</b>		260 mm (ACC) / 245 mm (ASC) / 300 mm (ARC) x 48 mm
<b>Weight</b>	stainless steel	0.9 kg
	titanium	0.7 kg
<b>Interface</b>	digital	RS-232 (TriOS)
<b>Power consumption</b>		≤ 0.85 W
<b>Power supply</b>		8-12 VDC (± 3 %)
<b>Maintenance effort</b>		Typically ≥ 0.5 h/month
<b>Calibration/maintenance interval</b>		24 months
<b>System compatibility</b>		RS-232 (TriOS protocol)
<b>Guarantee</b>		1 year (EU: 2 years)
<b>INSTALLATION</b>		
<b>Max. pressure</b>	with SubConn	30 bar
<b>Protection type</b>		IP68
<b>Sample temperature</b>		+2...+40 °C
<b>Ambient temperature</b>		+2...+40 °C
<b>Storage temperature</b>		-20...+80 °C
<b>Inflow velocity</b>		0.1-10 m/s



Frame 1



Frame 2



Frame 3