

miniBackScat SII – in situ Fluorometer

Model 1020: Chlorophyll *a* of blue and/or green plus brown algae

The miniBackScat-II 1020 fluorometer is designed for the in situ measurement of the concentration of Chlorophyll *a*. Three excitation spectra are selectable Light emitting diodes of high efficiency and light emission provide the excitation light. The quanta output of the excitation is controlled by reference detectors. The reference circuitry compensates the ageing and temperature dependence of each LED separately. The built-in detector consists of photodiodes, which are selected for high signal to noise ratio.



The miniBackScat SII model 1020 P



The front cap can be turned to select the group of algae to be detected.

Features

- Chlorophyll *a* of blue and/or green plus brown algae, Wide measuring range, high sensitivity, low cross-talk
- Standard analogue output, output linear in concentration
- Compact instrument, small outlines, titanium connector, Maintenance-free for long periods
- Low power consumption, wide voltage range of the power supply, Fast readiness after power-on
- No daylight interference
- Quanta controlled excitation
- Two measuring ranges with automatic and remote control
- Options: titanium housing, integrated turbidity sensor, DOM sensor

Specifications miniBackScat SII model 1020 P

Light sources	: 4 LEDs, peak wavelengths 450 nm, 590 nm, quanta controlled emission
Spectra	: 3 spectra selectable, remote and manual control (turning the front cap) (***)
Detector	: Silicon diodes, detector filter tuned to Chlorophyll <i>a</i> fluorescence, peak wavelength 683 nm
Window	: single window, tempered optical glass
Calibration	: crystalline Chlorophyll <i>a</i> in acetone
Ranges	: 0 – 10 µg/l and 0 – 100 µg/l (*) automatic and remote control
Sensitivities	: 0.02 µg/l, 0.1 µg/l
Signal output	: 0 – 10 V analogue, option: 0 – 5 V (**) linear in concentration, (option: linlog)
Time constant	: 150 ms
Range input/output	: 0..+ 5 V (max. 15 V) in/ 0..+5 V (man. 10 V) out
Readiness	: 3 s after power-on
Power supply	: 12 V (4,5 V to 36 VDC), 40 mA at 12 VDC soft start power on
Size of pressure housing	: diameter 62,5 mm, length 167 mm
Materials	: plastics, glass
Weight in air / water	: 0.7 kg / 0.1 kg
Maximum operating depth	: 400 m (model 1022 Ti: 2500m)
Installed connector	: Micro-Subconn MCBH–8M titanium
(*) Option	: 0 – 20 µg/l and 0 – 200 µg/l

(**) model 1022 provides two separate signal outputs, (***) model 1011 a fixed “all” spectrum

Calibration

The miniBackScat SII fluorometer is tuned to Chlorophyll *a* fluorescence. The green/brown algae readings are calibrated in concentration units of crystalline Chlorophyll *a* in acetone, the blue algae readings are calibrated by means of a standard solution, representing the same quanta efficiency.

Options

The titanium housing of the model 1010 Ti extends the operating depth to 2500 m. A subdivision of the output voltage (linlog) is available, by means of which only one analogue data channel is necessary for the transmission of both measuring ranges. The lower range covers 0 – 5 V and the upper range 5–10 V (option: 0–2.5 V and 2.5V–5V) of the output voltage. Other options: integrated turbidity, DOM, depth.

Accessories

Cuvettes for laboratory use and calibration, underwater cable, display and supply unit, data acquisition and telemetry unit, pressure and other sensors.

Series 1000 miniBackScat in situ fluometers

One channel: 1010 Chlorophyll *a* (green, brown algae), 1011 Chlorophyll *a* (green, brown, blue algae), 1012 Chlorophyll *a* (blue algae), 1014 DOM, 1015 Rhodamine WT, 1016 Sulforhodamine, 1018 Uranine, 1019 DOC, 1020 Chlorophyll *a* (green+brown or blue or all algae)

Two channels: 1021 Chlorophyll *a* and Phycoerythrin, 1022 Chlorophyll *a* green, brown algae and blue algae, 1024 Chlorophyll *a* and background, 1026 Rhodamine B and Uranine.



Alter Kieler Weg 19
D–24245 Klein Barkau, Germany
Fon: +49(0)4302 9659 -15 Fax: -13
info@dr-haardt.de
www.dr-haardt.de

