



Hyperion

Phycocyanin Fluorometer

(Cyanobacteria | Freshwater Blue-Green Algae)

Valeport's Hyperion 2 Fluorometer instruments deliver high performance measurements of Chlorophyll a, Phycocyanin (freshwater Blue-Green algae), Crude Oil, Fluorescein (Uranine), or Rhodamine in a compact and robust package ideal as a standalone sensor (with external power and logger e.g. EnviroLOG) for ROV and AUV integration or used with as part of a multi-sensor array.

Offered as standard in a 6,000m depth rated, titanium housing the Hyperion Fluorometer has a wide range (9-28V DC) isolated power supply, data output up to 32Hz and RS232, RS485 with ASCII and Modbus communication protocols.

Hyperion 2 offers an industry leading dynamic range with no adjustment of gain settings required. The detection range for the Phycocyanin Fluorometer is from 0 to 9,000 ppm.

Hyperion Fluorometers can be supplied in a ruggedised form that includes acetal protection rings, a shaped anti-snap connector cover and a kevlar weave protected cable for operation in borehole applications.

Cyanobacteria (or blue-green algae) are photosynthetic bacteria that occur naturally in surface waters. Under certain conditions of light, temperature and nutrient levels cyanobacteria can multiply rapidly, forming a bloom. Some Cyanobacteria produce toxins which pose health risks for humans and animals. The EU Bathing Waters Directive therefore requires monitoring for these blue-green algae blooms.

Testing for the actual toxins is possible by means of laboratory analysis of water samples, but this can be costly and time-consuming. However, cyanobacteria contain a fluorescent pigment called Phycocyanin, which can be detected in real time using a Valeport Hyperion fluorometer. The Hyperion uses narrow bandpass filters on both excitation and emission wavelengths to ensure that the response is specific to Phycocyanin and not affected by false positive results from normal Chlorophyll a fluorescence.

DATA SHEET

Product Details



OPTICAL



DATALOG X2
& ENVIROLOG
SOFTWARE

Phycocyanin*	
Excitation	590 nm
Detection	650 nm
Dynamic Range: gain setting is software controlled	0-9 000 ppb 2 gain settings: 0-45, 0-9 000
Minimum Detection (3x SD in RO water)	0.08 ppb
Linearity	0.99 R2
Response Time	0.03 - 2 sec
Output Rate	0.5 Hz - 32 Hz (free running) software controlled

* Calibrated against Phycocyanin in water\Phosphate buffer solution.

Communications

The instrument will operate in real time, with set up performed by direct communications with a PC before and after deployment.

RS232	Up to 200m cable Direct to serial port via USB adapter
Baud Rate	2400 - 115200
Protocol	8 data bits, 1 stop bit, No parity, No flow control

Electrical

External	9 – 28V DC Isolated
Power	<600mW
Connector	SubConn MCBH6F

Software

Valeport supply DataLog x2 Windows software for instrument setup, data download and display

Physical

Materials	Titanium with Sapphire glass window
Depth Rating	6,000m
Dimensions	40mmØ x 179.5mm (including connector)
Weight	0.50 kg (in air) 0.26 kg (in water)
Operating Temp	-5°C - 35°C (the sensor is damaged above 60°C)

Ordering

0901001 - PC	Phycocyanin
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Supplied with:
 · 1x Hyperion Instrument
 · 1x 0.5m pig tail
 · Manual and transit case
 · DataLog x2 Software

Datasheet Reference: Hyperion Fluorometer | April 2020

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