



SWiFTplus Phycocyanin

Multi-parameter profiler

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



MULTI-PARAMETER CTD



SOUND SPEED



OPTICAL



CONNECT SOFTWARE



Bluetooth



USB



Rechargeable
Battery



GPS

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Valeport's Hyperion Fluorometer sensor range, when combined with SWiFT, delivers high performance measurements of Phycocyanin in a compact & robust package.

Sensor Specification

Phycocyanin*

| | |
|---|---|
| Excitation | 590 nm |
| Detection | 650 nm |
| Dynamic Range | 0-9,000 ppb 2 gain settings: 0-50, 0-9,000 software controlled |
| Minimum Detection (3x SD in RO water) | <0.08 ppb |
| Linearity | 0.99 R ² |
| Response Time | 0.03 to 2 sec |
| Output Rate | 0.5 Hz to 32 Hz (free running) software controlled |

Conductivity#

| | |
|-------------------|--------------|
| Range | 0 - 80 mS/cm |
| Resolution | 0.001 mS/cm |
| Accuracy | ±0.05 mS/cm |

Temperature (Platinum Resistance Thermometer)

| | |
|-------------------|--------------|
| Range | -5°C – +35°C |
| Resolution | 0.001°C |
| Accuracy | ±0.01°C |

Pressure (Temperature compensated piezo-resistive pressure transducer)

| | |
|-------------------|-----------|
| Range | 50 Bar |
| Resolution | 0.001% FS |
| Accuracy | ±0.01% FS |

Sound Velocity (Digital time of flight sensor)

| | |
|-------------------|-----------------|
| Range | 1375 – 1900 m/s |
| Resolution | 0.001 m/s |
| Accuracy | ±0.02 m/s |

Salinity#

| | |
|-------------------|------------|
| Range | 0 - 42 PSU |
| Resolution | 0.001 PSU |
| Accuracy | ±0.05 PSU |

Density

| | |
|-------------------|------------------------------|
| Range | 990 - 1035 kg/m ³ |
| Resolution | 0.001 kg/m ³ |
| Accuracy | ±0.05 kg/m ³ |

*Calibrated against Phycocyanin in water/Phosphate buffer solution.

#Calculated Accuracies. Calculations based on Valeport's proprietary DASH formula.

Physical dimensions

| | |
|---------------------|--|
| Materials | Housing: Titanium Sinkers weight: Stainless steel Optical window: Sapphire glass |
| Depth rating | 500m |
| Dimensions | Ø78mm x Length 307mm (with sinker weight) |
| Weight | 2.7kg (in air) / 1.7kg (in water) including optional sinker weight |

Communications (set-up and data offload)

| |
|---------------------------|
| Bluetooth v4 - low energy |
| USB Serial |

Electrical

| | |
|-----------------|---|
| Battery | Internal rechargeable Li-ion battery pack |
| Charging | USB - Supplied mains AC adapter |

Software

- Connect iOS for Bluetooth compatible mobile devices:
 - instrument set-up, data offload and data display
- Connect PC for both USB and Bluetooth connectivity:
 - instrument set-up, data offload and data display
- Both will export data in common file formats that are compatible with industry standard Hydrographic software packages
- Android App to follow

Ordering

| | |
|----------------------|---|
| 0660047-50-FP | SWiFTplus profiler with Phycocyanin sensor 500m rated |
|----------------------|---|

- Supplied with:
- Deployment weight
 - PC Bluetooth adapter
 - USB interface and charging cable and charger
 - Valeport Connect PC software \ iOS App
 - Transit Case



Multi-parameter profiler measuring CTD, SVP, Phycocyanin, Salinity & Density

Bluetooth & USB connectivity

Datasheet Reference: Phycocyanin | April 2020

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