



# fastCTDplus Phycocyanin

## Fast response multi-parameter profiler

An evolution of the miniCTD, the fastCTDplus multi-parameter profiler is designed to deliver the highest quality CTD and Phycocyanin observations at fast drop rates.

A conductivity cell designed for optimum flow-through, a fast-response thermistor temperature sensor and 0.01% pressure sensor together with a Fluorometer sensor, all synchronously sampling at up to 32Hz to deliver the highest quality profiles in a lightweight and robust package.

- Multi-parameter profiler
  - CTD, Salinity, Density, Sound Velocity
  - Phycocyanin sensor
  - Up to 32Hz sampling rate
- Optional Bluetooth connectivity
  - Depth rated to 6,000m
  - Dedicated PC software

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**



**OPTICAL**



**SOUND  
SPEED**



**DATALOG  
X2 SOFTWARE**



Bluetooth  
Option

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## Sensors

<b>Phycocyanin* Blue/Green Algae</b>	
<b>Excitation</b>	590nm
<b>Detection</b>	650 nm
<b>Dynamic Range</b>	0-9,000 ppb 2 gain settings: 0-25, 0-9,000 software controlled
<b>Minimum Detection (3x SD in RO water)</b>	<0.08 ppb
<b>Linearity</b>	0.99 R <sup>2</sup>
<b>Response Time</b>	0.03 - 2 sec
<b>Output Rate</b>	0.5 Hz - 32 Hz (free running) software controlled

<b>Conductivity</b>	
<b>Range</b>	0-80 mS/cm
<b>Resolution</b>	0.001 mS/cm
<b>Accuracy</b>	±0.01 mS/cm
<b>Response</b>	30 milliseconds

<b>Temperature</b>	
<b>Range</b>	-5 °C - +35 °C
<b>Resolution</b>	0.001 °C
<b>Accuracy</b>	±0.01 °C
<b>Response</b>	50 milliseconds (T1)

<b>Pressure</b>	
<b>Range</b>	10, 20, 30, 50, 100, 200, 300, 400 & 600 bar
<b>Resolution</b>	0.001% full scale
<b>Accuracy</b>	±0.01% full scale
<b>Response</b>	1 millisecond

<b>Electrical</b>	
<b>Internal</b>	1 x D Cell 1.5V Alkaline or 3.6V Lithium
<b>External</b>	if fitted with a connector 9-28V DC isolated
<b>Power</b>	<250mW
<b>Connector</b>	SubConn MCBH10F (if fitted)

<b>Physical</b>	
<b>Materials</b>	Titanium housing Sapphire glass optical window
<b>Depth Rating</b>	6,000m
<b>Instrument Size</b>	ø54mm x 510mm
<b>Weight in air</b>	2.6kg / 4.9kg including frame
<b>Weight in water</b>	1.5kg

## Sampling Modes

<b>Continuous</b>	Regular and synchronous data collection from all sensors up to 32Hz.
<b>Profile</b>	Data is logged as the instrument descends (or rises), by a user defined pressure difference, through the water column.
<b>Rapid</b>	Once the instrument is set to run mode no data is logged until a programmed trigger depth is reached (e.g. 2 meters below the surface).  Completely programmable, the device can be set to record down casts data only, for example, when the probe stops descending and rises by a defined amount logging is stopped.

<b>Communications</b>	
The instrument is designed to operate autonomously. Setup and data extraction can be performed using a SubConn connector or via an optional Bluetooth connection with a PC. Multiple profiles can be recorded in the instrument by switching it on then off using the connector switch plug or magnetic switch key for Bluetooth operation. The instrument can also operate in real time or cabled comms.	
Bluetooth auto-pairing and discovery make connecting to the instrument simple and robust.	

<b>Direct Reading</b>	
<b>RS232</b>	Up to 200m of cable
<b>Baud Rate</b>	38400 to 460800
<b>Bluetooth</b>	8 data bits, 1 stop bit, no parity, no flow control

<b>Memory</b>	
Solid state non-volatile Flash memory	
<b>Capacity</b>	10 million lines of data (equivalent to 5,000 profiles to 1,000m with a 1m profile resolution)

<b>Software</b>	
Supplied with DataLog X2 Windows based software, for instrument setup, control, data extraction and display	

<b>Ordering</b>	
<b>Titanium Housing</b>	
<b>0660036T1-PC-XX</b>	fastCTDplus Phycocyanin Profiler 6,000m with connector
<b>0660036T1-PC-BT-XX</b>	fastCTDplus Phycocyanin Profiler 2,000m with Bluetooth

<b>Where</b>	
<b>XX</b>	Pressure sensor options 10, 20, 30, 50, 100, 200, 300, 400 & 600 Bar

\* Calibrated against Fluorescein/Rhodamine solution

## Datasheet Reference: fastCTDplus Phycocyanin | April 2020

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