



# SWiFTplus Turbidity

## Multi-parameter profiler

Valeport's SWiFTplus Multi-Parameter Profiler with a Turbidity sensor combines survey-grade sound speed, temperature and pressure sensor technology with Turbidity observations. The package is completed with the convenience of Bluetooth connectivity, rechargeable battery and an integral GPS module to geo-locate each profile.

- Multi-Parameter Profiler
  - CTD, Sound Speed, Salinity, Density
  - Up to 32Hz sampling rate
  - Dual Optical Backscatter (OBS) and Nephelometer Turbidity Sensor
- Bluetooth and USB connectivity
- Integral GPS receiver for geo-location of profile and time synchronisation
- Rechargeable Lithium-ion Battery
- Dedicated PC software and iOS portable device App

Valeport's Turbidity technology is essentially two sensors in one. The first is a "classic" nephelometer, using a 90° beam angle for turbidity levels between 0 and 2,000 NTU. The second sensor uses Optical Backscatter (OBS) for turbidity levels up to 10,000 NTU. The sensors output data separately and simultaneously at a programmable rate. This means that there is no need to switch ranges as conditions vary. Intelligent sampling and the use of a 24-bit ADC eliminates the need to switch gain.

## DATA SHEET

### Product Details



**MULTI-PARAMETER  
CTD**



**SOUND  
SPEED**



**OPTICAL**



**CONNECT  
SOFTWARE**



Bluetooth



USB



Rechargeable  
Battery



GPS

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## Sensor Specification

### Turbidity

<b>Linear Range</b>	Nephelometer: 0 to >1,000 NTU - linear response <sup>1</sup> OBS: 0 to >4,000 NTU - linear response <sup>1&amp;2</sup> <sup>1</sup> depending on suspended material <sup>2</sup> >4,000 NTU has a non-linear monotonic response that allows derivation of higher values using look-up tables/secondary calibration
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<b>Linearity</b>	0.99 R <sup>2</sup>
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<b>Minimum Detection Level</b>	0.03 NTU (Nephelometer)
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### Conductivity#

<b>Range</b>	0 - 80 mS/cm
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<b>Resolution</b>	0.001 mS/cm
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<b>Accuracy</b>	±0.05 mS/cm
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### Temperature (Platinum Resistance Thermometer)

<b>Range</b>	-5°C – +35°C
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<b>Resolution</b>	0.001°C
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<b>Accuracy</b>	±0.01°C
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### Pressure (Temperature compensated piezo-resistive pressure transducer)

<b>Range</b>	50 Bar
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<b>Resolution</b>	0.001% FS
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<b>Accuracy</b>	±0.01% FS
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### Sound Velocity (Digital time of flight sensor)

<b>Range</b>	1375 – 1900 m/s
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<b>Resolution</b>	0.001 m/s
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<b>Accuracy</b>	±0.02 m/s
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### Salinity#

<b>Range</b>	0 - 42 PSU
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<b>Resolution</b>	0.001 PSU
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<b>Accuracy</b>	±0.05 PSU
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### Density

<b>Range</b>	990 - 1035 kg/m <sup>3</sup>
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<b>Resolution</b>	0.001 kg/m <sup>3</sup>
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<b>Accuracy</b>	±0.05 kg/m <sup>3</sup>
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#Calculated Accuracies. Calculations based on Valeport's proprietary DASH formula.

## Physical dimensions

<b>Materials</b>	Housing: Titanium
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	Sinker weight: Stainless steel
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	Optical window: Sapphire glass
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<b>Depth rating</b>	500m
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<b>Dimensions</b>	Ø78mm x Length 307mm (with sinker weight)
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<b>Weight</b>	2.7kg (in air) / 1.7kg (in water) including optional sinker weight
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## Communications (set-up and data offload)

Bluetooth v4 - low energy

USB Serial

## Electrical

<b>Battery</b>	Internal rechargeable Li-ion battery pack
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<b>Charging</b>	USB - Supplied mains AC adapter
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## 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

<b>0660047-50-Tu</b>	SWIFTplus profiler with Turbidity sensor - 500m rated
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Supplied with:  
· Deployment weight  
· PC Bluetooth adapter  
· USB interface and charging cable and charger  
· Valeport Connect PC software \ iOS App  
· Transit Case



## Datasheet Reference: SWIFTplus Turbidity | April 2020

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