



# SWiFT CTDplus Turbidity

## Multi-parameter Profiler

Designed from the outset with the intention of a seamless workflow, the SWiFT CTDplus Turbidity profiler provides survey-grade sensor technology coupled with the convenience of **Bluetooth®** connectivity and rechargeable batteries. An integral GNSS module, to geo-locate each profile, completes the package. Data can be easily and quickly downloaded and reviewed wirelessly, via Bluetooth, using Valeport's new Ocean software for Windows and Connect Pathway Edition for iOS and Android and instantly shared, in industry standard data formats through email and cloud services. A USB Cable and Bluetooth adapter are provided.

In addition to the directly measured Conductivity, Temperature and Depth measurements, Salinity, Density and Sound Velocity is calculated using the UNESCO international standard algorithm and Chen and Millero equation. With an operational battery life of up to 5 days and the convenience of charging via USB, SWiFT CTDplus Turbidity is intended for offshore, coastal, harbour and inland environmental and hydrographic survey use to 500m and offers the highest quality CTD profiles in a compact, robust and portable package.

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.

Optionally, there is a deployment cage available to bolt onto the instrument to help get the SWiFT CTDplus Turbidity to depth in fast-flowing currents.

## DATA SHEET

### Product Details



MULTI-PARAMETER  
CTD



SOUND  
SPEED



OPTICAL



OCEAN & CONNECT  
PATHWAY EDITION  
SOFTWARE



USB



Rechargeable  
Battery



GNSS

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### Sensor Specifications

The SWiFT CTDplus Turbidity is fitted with Valeport's conductivity sensor, temperature compensated piezo-resistive pressure transducer and a new fast response thermistor temperature sensor.

#### 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

<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 m/s
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<b>Accuracy</b>	±0.01 m/s
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#### Temperature

<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

<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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#### Calculated Parameters and Accuracy

Calculations based on the UNESCO international standard algorithm and Chen and Millero equation

<b>Sound Velocity</b>	~0.25 m/s
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<b>Salinity</b>	±0.01 PSU
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<b>Density</b>	±0.01 kg/m <sup>3</sup>
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### Physical

<b>Materials</b>	Housing - Titanium Sensor Guard - Acetal Optical window: Sapphire glass Sink weight: Stainless steel Temperature Sensor - Titanium Pressure Sensor - Titanium Conductivity Sensor - Polyurethane coated titanium with ceramic core
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<b>Depth Rating</b>	500m
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<b>Dimensions</b>	ø78mm x Length 350mm
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<b>Weight</b>	2.7kg (in air) / 1.65kg (in water)
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### Communications (set up and data offload)

USB Serial

Bluetooth v4 - low energy

### Electrical

<b>Battery</b>	Internal rechargeable Li-ion battery pack
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<b>Battery life</b>	5 days continuous operation
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<b>Charging</b>	USB Typically, 1 hour fast charge will give 12 hours operation
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### Software

iOS and Android Valeport Connect Pathway Edition for Bluetooth compatible mobile devices – instrument set up, data offload, display and translation to common data formats. Valeport's Ocean PC software, with both USB cable and Bluetooth connectivity, for instrument setup, data extraction, display and translation to common data formats.

Instrument and data time is synchronised to GNSS, UTC.

### Ordering

<b>0660049-50-TU</b>	SWiFT CTDplus Turbidity Profiler Titanium housing rated to 500m
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<b>Supplied with</b>	PC Bluetooth adapter USB interface and charging cable 1.5 A charger Valeport Ocean software Operating manual System transit case
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### Datasheet Reference: SWiFT CTDplus Turbidity | February 2023

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