



# SonTek-SL<sup>TM</sup> Series

SIDE-LOOKING DOPPLER CURRENT METERS



a xylem brand



## Simple. Sleek. Superior.

Inspired by the need for a **SIMPLE** way to measure water velocity and level in open channels, the SonTek-SL (affectionately known as the Side-Looker or "SL") has earned worldwide acceptance as a long-term monitoring solution. Now, with two new (3G) models turbo-charged by our proprietary SmartPulseHD®, the SonTek-SL features accessories, mounting options, software, and a variety of integration formats to ensure it fits your application.

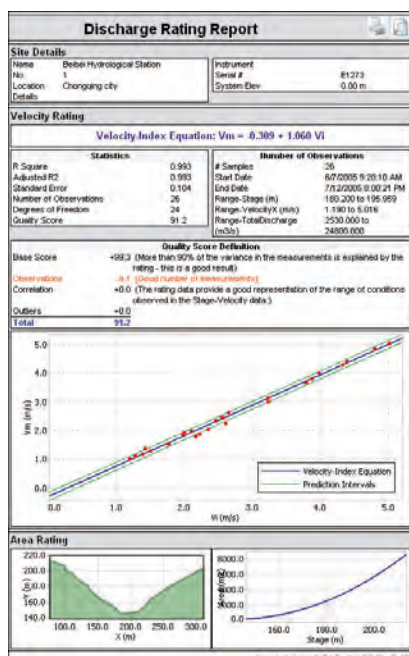
Designed specifically for side mounting on bridges, canal walls, or riverbanks, the SL's **SLEEK**, low-profile housing makes installation easy. With three models to choose from, the SL can be used in channels as small as you can jump across to rivers as wide as the Amazon. Ultra narrow beam widths combined with unmatched side lobe suppression provide the **SUPERIOR** acoustic directivity necessary for achieving maximum horizontal range free of interference from surface or bottom boundaries.

Features	Benefits
Water Velocity and Level	Water velocity, level, flow, and total volume-multiple parameters from one easy-to-use instrument. Acoustic Doppler profile of velocity data and acoustic water level offer the most accurate, reliable measurements.
SmartPulseHD®* (3G models only) *patent pending	An intelligent algorithm that looks at water depth, profiling range, velocity, and turbulence, and then acoustically adapts to those conditions using pulse-coherent, broadband, and incoherent techniques. Best data possible under any condition. High-def cell sizes down to 4 cm.
Compact, Hydrodynamic Design	Incredibly lightweight and easy to transport and mount. Slim shape is easy to maintain, stays clean, increases available sample area, and fits into more places.
Water Velocity Profiling	Customizable, flexible setup options to suit a variety of applications. 3G models offer 128-cells for high-resolution and detailed profiles.
Acoustic-Pressure "Duo" Water Level (3G models only)	Not only redundant sources of water level, the acoustic vertical beam and pressure sensor continually self-check, and pressure data are auto-corrected to keep atmospheric offset negligible.
Wave Spectra Option	Integrated pressure sensor calculates and outputs wave-height and period, in real-time.



- Concrete and Natural Channels
- River Discharge Monitoring
- Ports and Harbors
- Irrigation Canals
- Shallow Streams
- Water Supply
- Hydropower
- Stormwater
- Municipal
- Estuaries

## Smart Software.



Every SonTek-SL comes complete with industry-leading, user-friendly Windows software packages including SonTek's velocity indexing discharge rating software, FlowPack. Print professional reports easily with the confidence that you will produce consistent, robust results.

An entire rating analysis can be completed in a matter of minutes with automatically developed stage-area relationships and selection of the best-fit velocity index equation. Data can be imported from a variety of resources including SonTek instruments and other devices.

*For 3G models, SonTek-SL "SmartPage" streamlines set-up and data review with one-window operation.*

*FlowPack velocity indexing discharge rating software.*





## SonTek-SL500: Long-Range Option for Rivers, Ports and Harbors

A reliable classic, the SL500 delivers data mid-channel, yet is mounted pier or shore-side for quick access and maintenance, without the use of divers or boats. It is lightweight and easier to mount than comparable systems, yet delivers horizontal ranges up to 120m (400ft). Ideal for:



- Large rivers, estuaries, and large water delivery canals
- Bridge and pier-side monitoring of tides and currents for port safety, vessel navigation, and weather stations
- Offshore platforms

## SonTek-SL1500 (3G): Mid-Range Option with Wide Array of Use NEW!

A slimmed-down design and SmartPulseHD® makes the SL1500 (3G) the most versatile system available. Collect high-quality data in a horizontal profile, range of 0.2m to 20m (0.7 to 66ft). Get the highest-resolution and data quality possible - even as conditions change - courtesy of SmartPulseHD intelligence applied specifically for side-looking operation. Ideal for:



- Rivers, streams, water delivery canals, irrigation canals and laterals
- Unrivaled performance in very slow (even no flow) and reversing conditions
- Hydropower, stormwater, and municipal sites that require easy access and cannot interfere with plant operations

## SonTek-SL3000 (3G): Great Things Come in Small Packages NEW!

The industry's smallest, most lightweight and affordable side-looking Doppler profiler. The SL3000 (3G) is capable of small sample volumes and narrow channel dimensions as small as 0.5m (1.6ft). Get the highest resolution possible of any side-looking Doppler profiler with cell sizes of 4cm. No matter how tight the space, expect to collect precise data close to riverbanks, walls, and other structures. Ideal for:



- Small streams, small water delivery canals, irrigation turnouts and ditches
- Unrivaled performance in very slow (even no flow) and reversing conditions
- Hydropower, stormwater, and municipal sites that require easy access and cannot interfere with plant operations

## Accessories

Useful options and accessories make the SonTek-SL a complete, turn-key solution!



Canal Mount for installation in open channels.



WaterLOG Storm 3 wireless telemetry. Real-time data monitoring.



Easy-to-use Argonaut Flow Display for viewing SL500 data and system status.



Easy-to-use SonTek Flow Display for viewing SL (3G) data and system status.



SPF1500 protects against fluctuations in power and communications over long cable lengths.

# SonTek-SL SPECIFICATIONS

	SL3000 (3G)	SL1500 (3G)	SL500
Sampling Range <sup>1</sup>	0.1 to 5m (0.3 to 17 ft)	0.2 to 20m (0.7 to 66 ft)	1.5 to 120m (5 to 400 ft)
Minimum Channel Width	0.5m (1.6 ft)	1.0m (3.3 ft)	6.5m (21 ft)
<b>Acoustics</b>			
-Horizontal Beam Width <sup>2</sup>	1.4°	1.4°	1.4°
-Vertical Beam Width <sup>2</sup>	1.4°	2.9°	3.8°
-Side Lobe Suppression <sup>3</sup>	>60dB	>60dB	>60dB
Multi-cell Velocity Profiling	Up to 128 cells	Up to 128 cells	Up to 10 cells
SmartPulseHD®	Yes	Yes	n/a
SonTek Compass/Tilt	Tilt	Tilt	Compass/Tilt
Internal Nonvolatile Memory	4GB	4GB	4MB
<b>Water Velocity</b>			
-Range	±7 m/s (23 ft/s)	±7 m/s (23 ft/s)	±6 m/s (20 ft/s)
-Resolution	0.0001 m/s (0.0003 ft/s)	0.0001 m/s (0.0003 ft/s)	0.001 m/s (0.003 ft/s)
-Accuracy	±1% of measured velocity; ±0.005 m/s (0.015 ft/s)	±1% of measured velocity; ±0.005 m/s (0.015 ft/s)	±1% of measured velocity; ±0.005 m/s (0.015 ft/s)
<b>Water Level</b>			
-Vertical Beam Range	0.1 to 5.0 m (0.3 to 17 ft)	0.15 to 10 m (0.5 to 33 ft)	0.2 to 18.0 m (0.7 to 59 ft)
-Vertical Beam Accuracy	(depth < 3 m): ±0.3 cm (0.01 ft) (depth ≥ 3 m): ±0.1%	(depth < 3 m): ±0.3 cm (0.01 ft) (depth ≥ 3 m): ±0.1%	(depth < 6 m): ±0.6 cm (0.02 ft) (depth ≥ 6 m): ±0.1%
-Pressure Sensor Range	30 m	30 m	20 m
-Pressure Sensor Accuracy (FS)	0.10% FS	0.10% FS	0.25% FS
-Wave Height Spectra	Optional	Optional	Optional
<b>Power</b>			
-Input	9-15 VDC	9-15 VDC	7-15 VDC
-Consumption <sup>4</sup>	0.8	1.0 W	0.7 – 1.0 W
<b>Physical</b>			
-Weight in Air	0.45 kg (1.0 lb)	0.90 kg (2.0 lb)	6 kg (13.2 lb)
-Weight in Water	0.15 kg (0.3 lb)	0.20 kg (0.5 lb)	1.1 kg (2.5 lb)
-Pressure Rating (Max Depth)	30 m (98 ft)	30 m (98 ft)	30 m (98 ft)
-Mounting Plate Dimensions	25 x 17 x 1 cm (10" x 6.7" x 0.4")	25 x 17 x 1 cm (10" x 6.7" x 0.4")	35.5 x 22.9 x 1.5 cm (14" x 9" x 0.6")
-Operating Temperature	-5° to 60°C (23°F to 140°F)	-5° to 60°C (23°F to 140°F)	-5° to 60°C (23°F to 140°F)
-Storage Temperature	-10° to 70°C (14°F to 148°F)	-10° to 70°C (14°F to 148°F)	-10° to 70°C (14°F to 148°F)
<b>Communications</b>			
-Standard Protocols	RS232/SDI-12/Modbus	RS232/SDI-12/Modbus	RS232/SDI-12
-Software	SonTek-SL: Intelligent Flow	SonTek-SL: Intelligent Flow	ViewArgonaut
-Modbus Interface Module	n/a	n/a	Required for Modbus
-Analog Output Option	Integrated on Flow Display	Integrated on Flow Display	Separate AO module
-Flow Display Type	SonTek Flow Display	SonTek Flow Display	Argonaut®
<b>Temperature Sensor</b>			
-Resolution	±0.01° C	±0.01° C	±0.01° C
-Accuracy	±0.2° C	±0.2° C	±0.1° C

## Water Velocity

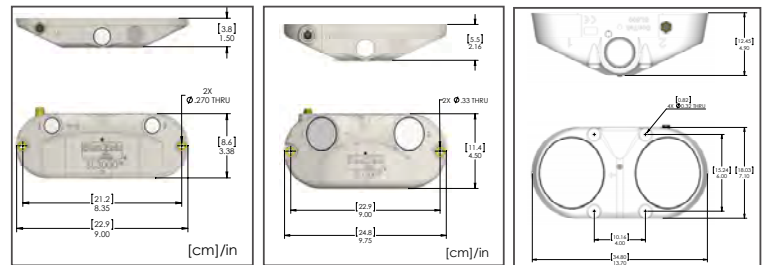
- Transducer: Two-beam horizontal, 25° slant angle for 2D water velocity

## Standard Features

- Vertical acoustic beam plus pressure sensor for water level
- "Multicell" velocity profiling
- "Independent" velocity measurement cell. This cell can be different in size from the multicells and located anywhere within the instrument's sampling range. This cell is used for flow calculations or other specialized functions
- Flow computation and output, including total volume
- FlowPack Velocity-Index Discharge Rating software package

## Optional

- External battery pack for autonomous operation (500WH)



1 Actual Maximum range depends on environmental conditions

2 Beam width reported at half power level (-3dB)

3 Side lobe suppression improves the aspect ratio of the instrument enabling greater measurement range in shallower water.

4 Power consumption will be higher if Flow Display is enabled



Founded in 1992 and advancing environmental science globally, SonTek manufactures acoustic Doppler instrumentation for water velocity measurement in oceans, rivers, lakes, harbors, canals, estuaries, industrial pipes and laboratories. SonTek's sophisticated and proprietary technology serves as the foundation for some of the industry's most trusted flow data collection systems. SonTek is headquartered in San Diego, California, and is a division of Xylem Inc.

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