

**A Buyers Guide
to Portable,
Automated
Silt Density Index
Measurement Tools.**

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Introduction

Osmonics® recent re-introduction of AutoSDI® creates for the first time, a choice in portable, automated, silt density index measurement tools. The purpose of this document is to help prospective users understand the features of each device and how they compare.

Please note that the author of this document is the designer of the simpleSDI™ meter. However, I have been very careful in preparing this document to ensure that it is an accurate and honest analysis of the two meters. Any errors will be corrected in subsequent revisions of this document.

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Features Comparison

Auto SDI®	simpleSDI™
In-Field flow calibration	In-Field flow calibration. simpleSDI™ offers an inexpensive flow control kit to make field calibration easier by automatically setting the calibration flow rate.
No tools required. For the most part this is true. However, the pressure regulator used in AutoSDI® often requires a screwdriver, pliers or wrench to adjust.	No tools required. Enough said.
Push-button operation. AutoSDI®'s push button operation is actually a step backwards in convenience. The push button opens the solenoid valve and starts the test. Setting up the meter requires multiple starts and stops in order to flush, install the filter and adjust the test pressure.	Push button and one valve operation. With simpleSDI™, setup, flushing, calibration and shutdown are made much easier by using a valve to control the water flow. Starting a test is a push-button-open valve operation. The test begins automatically when flow is detected.
Turn it on and walk away With either meter, best results are obtained if you monitor and adjust the pressure during the first 5 minutes of the test when the rate of plugging is highest. If you don't monitor AutoSDI, especially on high SDI waters, you'll return to find an error message instead of a meaningful result.	Turn it on and walk away With either meter, best results are obtained if you monitor and adjust the pressure during the first 5 minutes of the test when the rate of plugging is highest. Whether you monitor the meter or not, simpleSDI will return meaningful results, even on high SDI waters.
Lightweight and portable AutoSDI®'s portability is limited by the requirement that it must be plugged into a 110 or 220VAC for operation. Finding a source of power on many RO skids can be challenging.	Lightweight and fully portable. simpleSDI™ is battery powered for total portability. Tests can be conducted anywhere at any time without the hassle of finding an electrical connection.
Rugged carrying case The AutoSDI® carrying case is in-fact relatively flimsy. Constructed of .050" ABS, the case flexes readily and is somewhat brittle.	Rugged carrying case The simpleSDI™ case is truly rugged. Molded from durable polyethylene it features a wall thickness of .200" to .240". The case is virtually crush-proof. It easily stands up to the rigors of field use.

Features based on Osmonics® literature P/N 1201696 Rev B

The following features are the same for both meters.

- Built to ASTM D 4189-95
- Audible alert with silence mode
- Repeatability within 0.2 SDI units.
- LCD display
- Results remain on-screen until reset.

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Mechanical-Electrical Construction

Electrical Construction/ Servicability	Poorly Sealed, Non-Serviceable Electronics The electronics are housed behind the overlay in the top half of the unit. The flimsy plastic of the case coupled with the large area to be sealed caused numerous failures from water intrusion in the original AutoSDI unit. The electronics cannot be repaired or replaced in the field.	Sealed/Modular Easily Serviceable Electronics The electronics are housed in a dedicated, sealed enclosure with an external sealed watertight connector. If necessary, the electronics assembly can be replaced in less than a minute.
Mechanical Construction/ Servicability	Unitized-Non Serviceable Construction The hydraulic components are located below the panel in the base of the unit. Removing the panel is very difficult. Below the panel some of the components are secured with adhesives instead of fasteners. Field repairs are very difficult.	Modular, Easily-Serviceable Construction The hydraulic components are located below the panel in the base of the unit. The panel is easily removable. All of the components are secured with reusable fasteners making it easy to remove and replacement components as necessary.

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Specifications Comparison

- Continuous flow readout in mL/min
- Global Voltage compatibility

Specification	AutoSDI®	simpleSDI™
Range, SDI	0-6.7 SDI ₁₅ (500 ml test only) <i>Only the SDI₁₅ value is displayed at the end of the test. On high SDI waters AutoSDI® often displays an error message instead of a useful result.</i>	0-6.7 SDI ₁₅ 100 and 500 ml tests 0-10 SDI ₁₀ 100 and 500 ml tests 0-20 SDI ₅ 100 and 500 ml tests <i>simpleSDI performs SDI₅, SDI₁₀, and SDI₁₅ tests on 100 and 500ml samples and displays the values for all 6 tests at the end of testing. simpleSDI delivers meaningful measurements on even the highest SDI waters.</i>
Range, Plugging Factor	1-100% plugged	1-100% plugged <i>simpleSDI does not display the plugging factor since it's simply the value obtained by multiplying the SDI value by the duration of the test. The plugging factor as a value is not generally used.</i>
Electrical Power Selection	110-120V 60 Hz 220-230 V 50 Hz	110-120V 60 Hz 220-230 V 50 Hz
Water Supply	1/4-inch OD tubing via quick connect fitting.	1/4-inch OD tubing via quick connect fitting.
Water Pressure – psi	65-100 <i>AutoSDI's high inlet water pressure requirement severely limits it's usability.</i>	35-100 <i>simpleSDI operates successfully on lower pressure – reducing the need for a booster pump.</i>
Dimensions HxWxD - inches (mm)	6x14x10	5x10.75x9.75 (127x273x248)
Weight - lb (kg)	8	7 (3.2)

Pricing Comparison

Description	AutoSDI®	simpleSDI

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