



AutoSDI

Automated Silt Density Index Tester

SDI Testing Made Easy

If you thought performing a silt density index (SDI) test to predict membrane fouling potential was too tedious, costly and time consuming, welcome to AutoSDI from Osmonics!

AutoSDI eliminates the need for stopwatches, graduated cylinders, calculators and tedious labor. In less than twenty minutes you will know 5, 10, and 15 minute SDI results as well as Plugging Factor.

Fouling membranes and compromising water quality can be expensive. With the simple AutoSDI kit and a water source of 65 psi (4.5 bar) and at least 0.8 gpm (3.0 Lpm), membrane particulate fouling can be avoided and system performance optimized

The AutoSDI kit or Silt Density Index Testing System, as shown above, includes the tester, carrying case, 12 VDC Power Supply, pressure gauge, inline prefilter, SDI membrane filters (box of 100), and a user's manual.

What is the Silt Density Index

Silt Density Index (SDI) testing quantifies the amount of particulate contamination in a water source. SDI is widely accepted for estimating the rate at which colloidal and particulate fouling will occur in water purification systems—especially in applications using reverse osmosis (RO) membranes. Water sources often change their water quality and this test often needs to be done weekly or monthly.

The AutoSDI Tester automatically calculates a relative value for the amount of suspended matter in feedwater streams. Measured values reflect the rate at which a 0.45-micron membrane filter will plug with particulate material when feedwater is flowing through it. The ASTM chose the 0.45 micron filter because it is more likely to clog from colloidal matter than from hard particles such as sand or scale. SDI testing is commonly used as an “early alert” to ensure that particulates in feedwater do not plug the micropores in RO membranes.

How is SDI Calculated?

The AutoSDI calculates SDI based upon the decay in flow rate during a 15-minute period across a new 0.45-micron filter installed in the built-in holding fixture. Flow rate measurement accuracy is ensured by automatically maintaining a constant 30 psi (2.07 bar) in the feed stream to the filter.

Flow rates are measured during the collection of 500 mL samples at the start of the test and after 5, 10, and 15 minutes. SDI units (percent decay per minute) represent the degree of plugging that may occur due to the feedwater stream particulate and colloidal levels. The 15-minute SDI (SDI 15) is defined by ASTM D 4189-95 as the interval required for accurate and standardized testing. The 5- and 10-minute SDI values are only estimates of the 15-minute value.

In addition to calculating SDI 15, the measured decay in flow rate is also converted from an SDI value to plugging factor (PF) value, a number between 1 and 100%. 100 percent means the filter is completely plugged. This provides an understandable point of reference for the potential of your RO membranes to plug—the higher the percentage, the faster your membranes may become fouled with particulates.

Features

- In-Field flow calibration
- Built to ASTM D 4189-95
- No special tools or skills required
- Push-button operation
- Turn it on and walk away
- Lightweight and portable
- Rugged carrying case
- Audible alert with silence mode
- Repeatability within 0.2 SDI units
- LCD display
- Results remain on screen until reset
- Continuous flow readout in mL/min
- Global voltage compatibility
- Membrane replacement availability on-line

The Fast, User-Friendly, and Accurate Way of Measuring Silt Density Index

1. Connect Water
2. Insert Filter
3. Press Button
4. Read Results

Product Characteristics

Range, SDI (15 minutes)	0-6.7 SDI units
Range, Plugging Factor	1-100% plugged
Electrical Power Selection	110-120V 60Hz or 220-230V 50 Hz
Water Supply	1/4-inch OD tubing via quick-connect, 0.8 gpm (3.0 Lpm) flow
Water Pressure - psi (bar).....	65-100 (4.5-6.9)
HxWxD - inches (mm).....	6x14x10 (15x36x26)
Weight - lb (kg)	8.0 (3.6)

Ordering Information

AutoSDI Tester Kit 115V	1227464
AutoSDI Tester Kit, 220V	1227473
AutoSDI User's Manual	1227468
SDI Membrane Filters, Box of 100	1215281
SDI Booster Pump Assembly, 115V 0.8 gpm (3.0 Lpm)/65 psi (4.5 bar)	1106581
SDI Booster Pump Assembly, 230 V 0.8 gpm (3.0Lpm)/65 psi (4.5 bar)	1233011

For More Information:

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