



Model 5400

DYNAMIC SCALE DEPOSITION LOOP

The Model 5400 Dynamic Scale Deposition Loop fully automated system includes hardware and software to measure and evaluate the performance of scale inhibitors under high pressure and high temperature conditions.

The system consists of a test section of tubing placed within a convection oven providing temperature uniformity. Samples are pumped through the tubing at known rates while measuring the differential pressure across the test section. Scale formation inside the test section is indicated by an increase in differential pressure. Once the pressure reaches an adjustable threshold value, the test is complete, and an automated clean-up phase automatically begins.

Prior to the test section, two lengths of coiled tubing inside the oven are used to pre-heat the samples to the pre-determined test temperature. A manual set-point back pressure regulator is used to create the sample pressure inside the test section during pumping. Fluids are transported through the tubing using three HPLC pumps for anion, cation and scale dissolver. Provisions exist for system flushing through the pumps using water.

The software is designed for ease of use, with features to collect all required data during the test cycle. The software provides the operator with control over flow rate, test time, fluid selection and temperature of each individual test. All data and test parameters are stored in a test-specific .CSV file for analysis.



FEATURES

- ✓ Forced Air Convection Oven
- ✓ Removable Sample and Pre-heat Tube Assembly
- ✓ Hastelloy C276 Sample Tubing and Fittings Inside Oven
- ✓ HPLC Sample Injection Pumps
- ✓ High reliability dP transmitter (C276)
- ✓ Sample Injection Scheduling with Automatic Loop Cleanup
- ✓ Microsoft Windows Based Control and Data Acquisition

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Specifications:

Pumping system:

HPLC Pumps (3), 316SS wetted components,
optional HC276 wetted components

Maximum Pressure: 5800 PSI (400 bar)

Flow Rate: 9.99 mL/min maximum (each pump)

Back Pressure Regulator,
316SS: 0 – 5800 PSI (400 bar),
optional HC276 wetted parts

Pressurized sample bottles

Safety relief valve

Convection Oven:

Temperature Range: 572°F / 300°C maximum

Test Section Lengths - 3-ft and 10-ft, Interchangeable

CE and NRTL Compliant oven and HPLC pumps

Power Requirements:

230 VAC (CE compliant oven) or

115 VAC (NRTL compliant oven), 50/60 Hz

Computer: 115/230 VAC 50/60 Hz, <1A

Dimensions (w x d x h): 56-inch x 23-inch x 25-inch (not including computer)

* Manufacturer's specifications subject to change without notice



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