

# SpectroVISC 300 Series

## AUTOMATIC VISCOMETER

Kinematic viscosity measurement of used and new oil



The SpectroVISC 300 Series is a bench-top semi-automatic kinematic temperature bath viscometer optimized for the analysis of used and new lubricants. It conforms to the requirements in ASTM D445, D446, D7279, IP 71 and ISO 3104. It is also the ideal system for used oil analysis laboratories that need to test a wide range of lubricant viscosities.

### A fast, accurate, and cost effective instrument for the determination of kinematic viscosity in used oils and other fluids.

The SpectroVISC 300 Series is a self-contained viscometer system that consists of one or two thermostatic baths with circular heaters and a control column. Each bath contains four patented viscometer tubes together with optical sensors to detect the flow of oil through the tubes. All measuring tubes function independently of each other. The control column has an LCD display that provides the user with information about the system's status and an array of LEDs indicate the current status of each measuring tube. An optional external computer can also be used to control the system for applications where more extensive data handling requirements are necessary.

The user of the SpectroVISC 300 Series has the option to operate in two modes, standard viscosity determinations or measuring tube calibration. In both modes, the user chooses how many determinations have to be made for an average result. Additional parameters such as tube constants, and cleaning cycle are also controlled by the operator.

#### Features

- Compliant with requirements for ASTM D 445, D 7279 and related specifications.
- High throughput – up to 60 samples per hour to ASTM precision.
- Small sample volume – 0.3 to 0.6 ml.
- Low solvent consumption – 2.5 ml per sample.
- Easy to use.
- Automatic flow time measurement.
- Fully automatic cleaning and drying.
- Fast, easy tube replacement, no need to drain bath.
- Single or dual solvent injection system.
- Ultra-precise meniscus detection.
- No PC required for system to operate.
- System is chemically resistant.
- Optional dual measurement capability.



|                     | <b>SpectroVisc 300</b> | <b>SpectroVisc 310</b> |
|---------------------|------------------------|------------------------|
| # of Baths          | 1                      | 2                      |
| Independent Control | 1                      | 2                      |
| # of Tubes          | Up to 4                | Up to 8                |
| Dual Solvent        | Optional               | Optional               |
| Dual Measurement    | Optional               | Optional               |



Patented viscosity tube

## Dual Solvent Injection Option

The standard version of the SpectroVisc is equipped with a single solvent injection system. In some applications, it may be necessary to use an additional solvent to properly clean the viscometer tube, such as when measurements are made at or near room temperature. At these lower temperatures, the solvent that is used to dissolve the sample does not evaporate fast enough, leaving the tube wet with solvent residue inside. An optional dual solvent injection system is available to introduce an additional solvent which does evaporate quickly at the operating bath temperature.

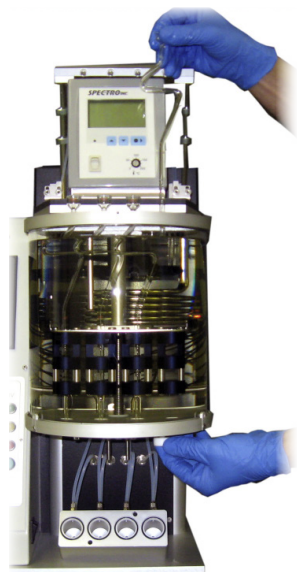
## Dual Measurement Option

The optional dual measurement upgrade improves test repeatability, increases productivity, and reduces solvent consumption. It consists of a special tube and an additional sensor. The tube is fitted with two sequential measurement sections and an additional detector bringing the total of three detectors instead of two. Limits can be set to reject a sample in cases where the measurement differ more than a preset value due to an air bubble, contamination, etc.

## Easy to Change Viscometer Tubes

Sometime changing the tubes is necessary if the viscosity of a sample is outside the range of all the tubes inside the temperature bath. One common problem for viscometers on the market is to drain the bath oil before changing the tube – it is time consuming and there are chances of contaminating the bath oil in the process. With an innovative design, SpectroVisc does not require the user to drain the bath oil to change the tube, and the process only takes a few minutes.

Viscometer tubes can be easily replaced without the need to drain the bath.



## SpectroVisc 300 Series Information

| PART NUMBERS            |   |   |
|-------------------------|---|---|
| SVS1000                 | Single bath single measurement, 230 V, 50-60 Hz. Single solvent injection, tubes and standards not included |   |
| SVS2000                 | Single bath single measurement, 110 V, 50-60 Hz. Single solvent injection, tubes and standards not included |   |
| SVS5000                 | Dual bath single measurement, 230 V, 50-60 Hz. Single solvent injection, tubes and standards not included   |   |
| SVS6000                 | Dual bath single measurement, 110 V, 60 Hz. Single solvent injection, tubes and standards not included      |   |
| SPECIFICATIONS          |   |   |
| Standard Methods        | ASTM D445, D446, D7279, IP 71, ISO 3104   |   |
| Measuring Range         | 0.6 - 3,000 mm <sup>2</sup> /s (cSt)  |   |
| Meniscus Detection      | Optical (new and used oils)   |   |
| Sample Injection        | Manual  |   |
| Solvent Injection       | Automatic (optional dual solvent)   |   |
| Tube Drying             | Automatic   |   |
| Viscometer Tube         | 4 Glass capillary, modified Zeitfuchs Crossarm  |   |
| Display                 | Clear LCD   |   |
| Temperature Range       | 20 - 110°C  |   |
| Temperature Stability   | ± 0.01°C @ 40°C, ± 0.03°C @ 100°C   |   |
| Bath Volume             | 7.5 liters (2 gallons)  |   |
| PC Software             | Included  |   |
| External PC             | Optional  |   |
| Dimensions              | 43.5 x 47.5 x 62.0 cm. (17-1/8 x 18-11/16 x 24-7/16 in)   |   |
| Weight                  | 33 Kg (72.6 lbs), without tubes and bath oil  |   |
| Electrical Requirements | System: 110-230 VAC, 50-60 Hz., 170 W.<br>Thermostat: 1.2 kW@110 VAC; 2.3 kW@230VAC                         |   |
| External Requirements   | Compressed air: 5-6 Bar   |   |
| TUBE SELECTION TABLE    |   |   |
| Part Number             | Nominal Constant (mm <sup>2</sup> /s <sup>2</sup> )   | Measuring Range (mm <sup>2</sup> /s, cSt) |
| SI-VT-01                | 0.01  | 0.5-1.5                                   |
| SI-VT-02                | 0.02  | 1.0-3.0                                   |
| SI-VT-03                | 0.03  | 1.5-4.5                                   |
| SI-VT-05                | 0.05  | 2.5-7.5                                   |
| SI-VT-07                | 0.07  | 3.5-10.5                                  |
| SI-VT-10                | 0.10  | 5.0-15.0                                  |
| SI-VT-20                | 0.2   | 10.0-30.0                                 |
| SI-VT-30                | 0.3   | 15.0-45.0                                 |
| SI-VT-50                | 0.5   | 25-75                                     |
| SI-VT-70                | 0.70  | 35-105                                    |
| SI-VT-100               | 1.00  | 50-150                                    |
| SI-VT-200               | 2.00  | 100-300                                   |
| SI-VT-300               | 3.00  | 150-450                                   |
| SI-VT-500               | 5.00  | 250-750                                   |
| SI-VT-1000              | 10.00   | 500-1500                                  |
| SI-VT-1500              | 15.0  | 750-2250                                  |