

Soap Film Flowmeters

Primary Standards for Calibrating Sample Pumps

- Primary standards
- Simple to use
- Sample contacts only glass and stainless steel
- Calibration lines encircle the tube for easy reading

Model 311 Laboratory Film Flowmeter Kit

Range: 300 to 3000 ml/min

The SKC 311 Laboratory Film Flowmeter Kit consists of a glass tube with red calibration lines at specified volumes, a squeeze bulb to contain sufficient soap film solution for flow measurement, an adapter to accommodate either vacuum or pressure sources, a stopper and connecting tubing, a tripod stand, film solution, and operating instructions. The 311 Laboratory Film Flowmeter Kit provides quick and accurate flow determinations at specified flow rates.



Principle of Operation

A film flowmeter measures flow rate based on the unchanging properties of the measuring apparatus. The pump to be calibrated pulls air through a volumetric glass tube where a flat soap film bubble is interposed into the flow path. As the airflow causes the film to move up the volume marks, travel time is measured with a stopwatch. The flow rate can be calculated using the travel time and tube volume or looked up on a flow chart.

Model 303 Portable Flowmeter Kit

Range: 5 to 500 ml/min

The SKC 303 Portable Flowmeter Kit contains all the equipment, except a stopwatch, required for calibrating low flow personal sample pumps and detector tube pumps. The complete kit weighs only three pounds (1.4 kg) and includes a 100-ml buret flowmeter, film solution, operating instructions, flow charts, and a removable carry case. Calibration lines for 90, 95, 105, and 110 ml are also on the buret allowing for the calibration of detector tube pumps.



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About Built-in Flowmeters and Rotameters

The ball-type flowmeters and rotameters built into most air samplers are primarily intended to serve as flow indicators and are, therefore, of low accuracy. These flowmeters as well as rotameters must be calibrated against a primary standard such as a soap film flowmeter to verify accuracy. The Portable Field and Laboratory Film Flowmeter Kits are calibrated to a primary standard $\pm 2\%$ of the volumes marked on the flowmeter.

Precision Digital Stopwatch

An accurate timer is required when using a film calibrator. The SKC stopwatch is a rugged, hand-held digital stopwatch with high-precision quartz crystal movement and solid-state circuitry powered by three AA alkaline batteries. The digital readout is to 1/100 second with a total elapsed time of 60 minutes.

Ordering Information

Description	Measuring Range (ml/min)	Cat. No.
Portable Field Flowmeter Kit includes precision glass buret, film solution, operating instructions, flow charts, and carry case	5 to 500	303
Laboratory Film Flowmeter Kit includes precision glass buret, squeeze bulb, film solution, operating instructions, adapter for vacuum or pressure, stopper and connecting tubing, and aluminum tripod stand	300 to 3000	311-1000
Calibrating Accessories		
Film Solution, 1 pint (473 ml)		302-4011
Precision Digital Stopwatch, powered by 3 AA batteries		303-01-1

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