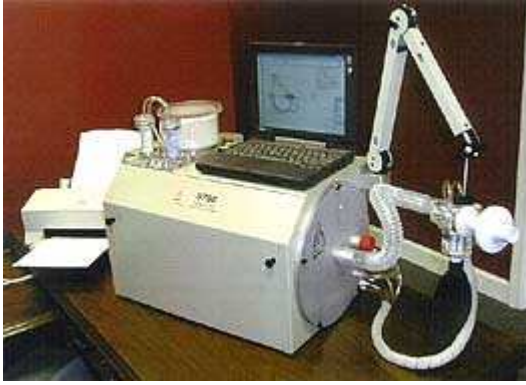


# S780 Pulmonary Function Lab



During the past few years, the dramatic increase in airway related lung disease has correspondingly led to increased pulmonary function testing.

There are many known medical conditions in which early lung function studies may help both in the control of the condition and in the diagnosis. This is especially applicable to industry where experience has shown exposure to occupational airborne pollutants or elsewhere where an irritation or allergen may be known to cause disturbances in lung functions.

The measurements obtained from pulmonary function testing form part of the various findings obtained by the physician in the diagnosis and control of chest diseases. For many applications, the results of lung function tests are interpreted on the basis of several different types of measurements.



Therefore accuracy and repeatability are paramount necessities of pulmonary function analyzers.

## **S780 is the industry's most accurate.**

The S780 was developed to be the most stable platform for pulmonary function measurements available. A dry rolling seal spirometer, regarded as the standard for pulmonary analysis is coupled with an exclusive optical shaft digital encoder. The digital signal is up to 5 times more accurate than other's analog technology. Every 10 ml. volume change is sampled regardless of time ... especially critical during the first 0.5 second of high flow during testing. The digital volume sensor ensures **guaranteed lifetime volume accuracy without calibration adjustment.**

## **The industry's most comprehensive quality assurance**

The quality assurance program **eliminates the S780 as a source of testing error.** This exclusive feature checks 17 major subsystems, **automatically**, within 30 minutes. Not only are specification deviations pinpointed, but an extensive diagnosis is rendered with suggested trouble shooting guidelines given to correct any problems. This QA program is so simple to use that the operator need only know the concentration of carbon monoxide and helium of the calibration gases.

Though the frequency with which the complete QA program it is utilized is at the operator's discretion, there is also a "Quick Test" sequence included to verify items that may change during the day. This "quick" sequence also includes system leak checks, also gives the operator a printout of daily performance, is performed in 5 minutes, and can be completed during the initial instrument warm-up.

## Operator friendly program allows easier, faster testing

The instrument is driven by a "Windows? 95/98" applications program, which allows more attention to be focused upon the care and coaching of the patient.

All test data is retained and may be manipulated with a data base management system using a dBase III compatible file format.



Ergonomic patient valve

All data is displayed in real time and may be printed. Standard and customized reporting formats are available.

## Small enhancements allow greater patient comfort

For instance, a unique pneumatic patient balloon valve design is clear, quiet, and mounted upon an easily positioned support arm. **There is no electrical interface,** and an extremely small deadspace is obtained.

Both the dry rolling seal assembly and the patient valve can be completely immersed for cleaning.

## The S780 makes a difficult procedure easier on everyone involved

Easier on the technician. Software speeds throughput minimizes necessity of retesting. Quality assurance verifies instrument conditions.

Easier on the physician. An array of formats, retention of all data and an easily manipulated data base that preserves all information.

Easier on the patient. Ergonomically designed to facilitate any patient condition. Small hardware silhouette and quiet operation lessens apprehension.

Easier on the biomed. Modular designed circuitry and self diagnostics enables quick accessible for pinpointing trouble, allows easy, accessible replacement to minimize downtime. Toll free 800-557-4376 for immediate assistance and product support.

Easier on the administrator. Research quality results, consistently, at a price of standard, automated, PC operated pulmonary function testing systems.

## SPECIFICATIONS:

The pulmonary function test system will perform all normal spirometry functions plus diffusion capacity and lung volume analysis.

The system shall incorporate such features as: optical shaft digital encoding, lifetime guarantee of accuracy 0.5% without adjustment, an integral quality assurance program able to automatically validate the system's performance parameters in less than 30 minutes, real time graphic displays, optional 8 1/2" x 11" direct linked chart reports. The mouthpiece is pneumatically operated without any possible patient electrical interface. The spirometer seal assembly and patient valve are completely removable for cleaning.

### Spirometer

<b>Type:</b>	10 liter dry rolling seal
<b>Maximum flow:</b>	greater than 16 liters/second
<b>Accuracy:</b>	0.5% guaranteed over life of spirometer without adjustment
<b>Resolution:</b>	10 ml
<b>Resistance:</b>	less than 1cm water/liter/second at 12 liters/second

**Sample method:** digital encoder sampling every 10 ml regardless of flow rate  
**Sample rate:** 1600 hz at 16 liters/second; 2500 hz maximum  
**Sample resolution:** 1 microsecond  
**Patient valve system:** fast response balloon valve for patient>spirometer, patient>atmosphere, patient>Dlco sample. Completely immerse for sterilization.  
**Temperature Accuracy:** 0.5 degrees C over range 15 degrees C to 35 degrees C  
**BTPS correction:** automatic  
**Gases required:** 100% Oxygen, 100% He, DLco mix (3000 ppm CO, 10% He, 20% Oxygen, N2)

**Meets or exceeds NIOSH, ATS, ACCP, OSHA standards.**

**Full one year system warranty**

### **Helium analyzer**

**Thermal Conductivity:** direct measure, 90% response in 5 sec.  
**Resolution:** nominally 0.005% Helium  
**Drift:** long term - 0.08%, short term - 0.04%  
**Linearity:** 0.5% (0-10%)

### **Carbon monoxide analyzer**

**Type:** infrared, 100 ms response at sensor  
**CO Linearization:** 0.5% by linear model based on automatic CO sampling  
**Accuracy:** 1.0% of full scale  
**Noise:** 5 ppm rms  
**Drift:** 50 ppm/hr

### **Optional Chart mechanism** microprocessor controlled, direct linkage

**Chart speeds:** .25, .5, 1, 10, 20, 30 mm/second  
**Chart form size:** 8.5 x 11 inches  
**Electrical:** 115 volts AC, 60 hz, 200 watts (3 amps max)  
**Shipping Weight:** 67 lbs (spirometer)  
**Dimensions:** 22"1 x 25"W x 17"H (spirometer)

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