CERTITEST® AUTOMATED FILTER TESTERS MODELS 8127 AND 8130

FILTER TESTERS TO COMPLY WITH COMMERCIAL RESPIRATOR STANDARDS AROUND THE GLOBE!

For more than 15 years filter manufacturers around the globe have relied on TSI's CertiTest® Automated Filter Testers (AFTs) for testing particulate respirator filters, disposable filtering face pieces and a wide assortment of filter media. In fact, the Models 8127 and 8130 can be used to comply with the following standards and more:

+ US 42 CFR 84
+ EN 143 and related standards
+ JMOL (Japanese respirator standard)

TSI's Automated Filter Testers Models 8127 and 8130 have proven track records of durability, reliability, and minimal maintenance, meeting the demanding requirements of manufacturing and quality control environments. Whether you are looking for a stand-alone tester to check a few filters per day or need to integrate your tester in an automated, high-volume production line, CertiTest AFTs are up to the challenge. Specially designed aerosol generators and laser photometers enable highly repeatable and reproducible filter-efficiency measurements. In addition, the Models 8127 and 8130 feature a high degree of automation and self-diagnostics that greatly simplifies operation, increases throughput, and improves overall measurement performance. As a result, TSI filter testers are ideally suited for QC testing.

Features and Benefits

+ Compliance with regulations
+ Simple, fast and automated operation
+ Highly consistent test results
+ Designed for manufacturing environments
+ Service and support

UNDERSTANDING, ACCELERATED
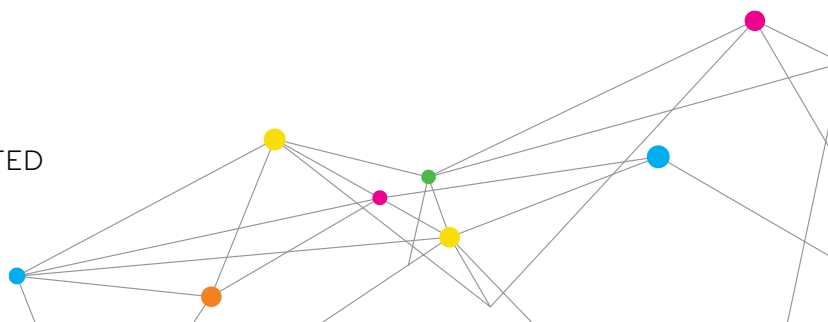
Operation

The operation of Models 8127 and 8130 is simple, fast and highly automated. The operator, or robot, places a filter on the lower half of the filter holder. The test is initiated by pressing the dual start buttons, or by sending a 'START' signal to the tester from a PLC via the external control interface (optional). A pneumatic cylinder quickly lowers the top half of the filter holder and aerosol is passed through the filter. Two light-scattering laser photometers simultaneously measure the upstream and downstream aerosol concentration levels. The particle penetration value is determined from the ratio of these two readings. By using two laser photometers, instead of one, measurement accuracy and throughput is increased.

Highly accurate, electronic pressure transducers determine filter resistance and flow rate. Pressure and photometer readings are taken between every test to determine the zero offsets and background values. The microprocessor automatically compensates for these values when computing test results.

When the test is complete, the filter holder opens automatically. All test data is displayed and available for printer, and serial output. If a PASS level is selected, a PASS or FAIL message is displayed and provided with all outputs.

Accessories

TSI offers a variety of optional accessories to diversify the capability and applicability of Models 8127 and 8130 Automated Filter Testers.

Custom Filter Holders

TSI has an experienced design team and a fully-equipped machine shop to address special requirements from our customers. Over the years, TSI has designed and built more than 100 custom filter holders to accommodate testing filters with different shapes and sizes.

External Control Interface

The External Control Interface Model 800402 enables you to integrate your tester in an automated, high volume production line. This option provides the means to control the filter tester using a PLC.

External Adapter

The External Adapter Model 8107 allows users to test tubular, rectangular or other irregular shaped filter cartridges that have its own housing.
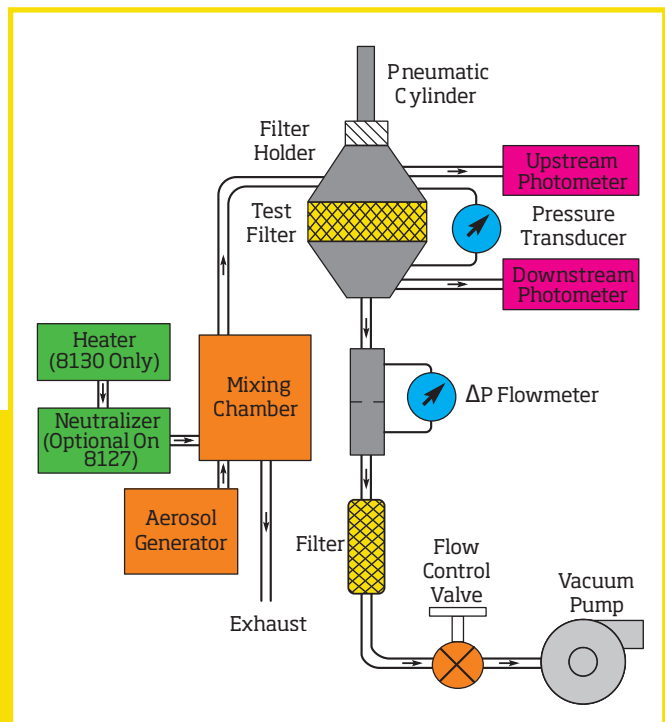
Features	Benefits					
	Meets Requirements	Repeatability and Reproducibility	Reliability	Ease of Use	Low Operating Cost	High Throughput
Compliance with Regulations						
42 CFR part 84 certification testing*	+					
EN 143 and related standards testing*	+					
Quality control testing	+	+	+			
Simple, Fast and Automated Operation						
User-friendly, menu driven touch panel display				+		+
Dual photometers for increased accuracy and speed		+	+	+		+
Self-check diagnostics		+	+	+	+	+
External control interface for automation (optional)					+	+
Unattended operation for prolonged loading tests				+	+	
Store and recall multiple test protocols				+		+
Highly Consistent Test Results						
Produces stable aerosol (oil or salt**) of known size distribution	+	+	+			
Measures penetration down to 0.001% (efficiencies up to 99.999%)	+	+				
Suitable for statistical process control		+				
Designed for Manufacturing Environments						
Able to test more than 5 filters per minute				+		+
Operates with minimal maintenance			+	+	+	
Can be integrated with automated production lines						+
Service and Support						
Installation and startup and on-site service*			+	+		
Customized filter holders				+		

 * Consult your TSI representative for more details.
** Salt aerosol generation is only available with the Model 8130.

Specifications – Aerosol Generation				
Tester Model	**8127 & 8130**	**8130**	**8127 & 8130 EN Version**	**8130 EN Version**
Aerosol Type	DOP (or other oils)*	NaCl *	Paraffin Oil**	NaCl **
Count Median Diameter	0.20 µm	0.075 µm	0.16 µm	0.06 µm
Mass Mean Diameter	0.33 µm	0.26 µm	0.4 µm	0.18 µm
Geometric Standard Deviation	< 1.6	< 1.86	~ 2	~ 1.9
Concentration	50 – 200 mg/m³	12 – 20 mg/m³	20 ± 5 mg/m³	8 ± 4 mg/m³

Aerosol particle size and geometric standard deviation determined using the TSI Model 3936 Scanning Mobility Particle Sizer™ (SMPS™) Spectrometers
 * Values shown are typical using standard setting for oil (DOP or Emery 3004) and 2% salt.
** Values shown are typical using EN settings for Paraffin oil and 2% salt.
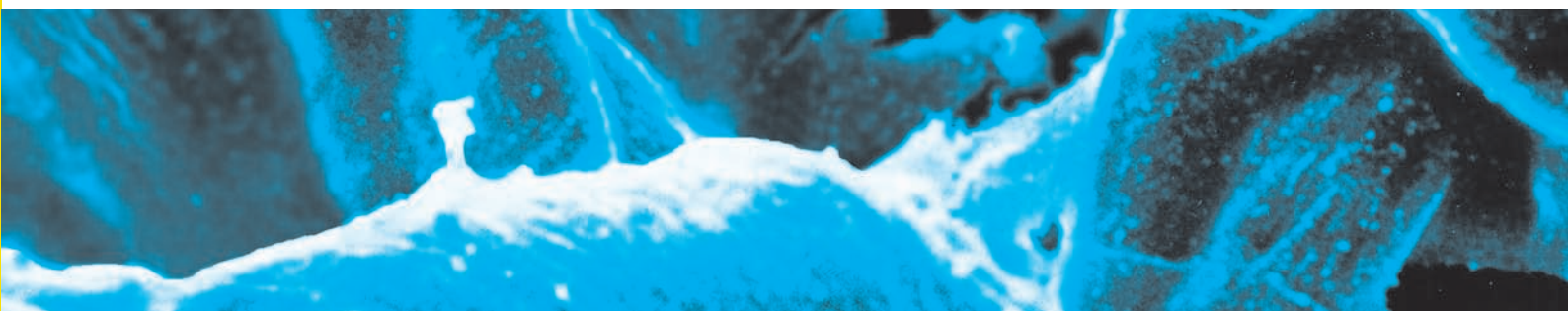
SPECIFICATIONS

CERTITEST® AUTOMATED FILTER TESTERS
MODELS 8127 AND 8130

Aerosol detection

Technique — Light-scattering, laser photometer

Dynamic Range — $1.0\ \mu g/m^3$ to $>200\ mg/m^3$

Aerosol Flow

Technique — Orifice with electronic pressure transducer

Flow Rate Through Media — Adjustable from 15 to 100 L/min

Accuracy — 2% of full scale

Pressure measurement

Technique — Electronic pressure transducer

Range — 0 to 150 mm H_2O (0 to 1470 pascals)

Accuracy — 2% of full scale

Efficiencies

Operating Range — Measures particle penetrations to 0.001% or efficiencies to 99.999%

Automation and data management

Dedicated, internal microprocessor

Outputs

240-character, touch-panel display, thermal printer, and RS-232 communications port

Built-in Internal Pump

Included

Filter Holder for Flat Sheet Media

Included

Utility Requirements

Power — 115 VAC, 60 Hz, 5.5 A continuous or 230 VAC, 50 Hz, 2.8 A continuous

Compressed Air — 80 psig, 7 scfm (550 kPa, 198 std. L/min)

Dimensions (L x W x H) — 69 cm × 71 cm × 147 cm (27 in. × 28 in. × 58 in.)

Weight

168 kg (369 lb)

TO ORDER

Automated Filter Testing

Specify	Description
8127[†]	Automated Filter Tester with Oil Aerosol Generator (115V, 60 Hz)
8127-1[†]	Automated Filter Tester with Oil Aerosol Generator (230V, 50Hz)
8130[†]	Automated Filter Tester with Salt and Oil Aerosol Generators (115V, 60 Hz)
8130-1[†]	Automated Filter Tester with Salt and Oil Aerosol Generators (230V, 50Hz)

[†] For a filter tester compliance with EN 143 standard, please add –EN to the part number

Each model includes a touch panel display, dual laser photometers, built-in vacuum pump, pneumatically operated filter holder for flat sheet media, along with the following standard accessories: thermal printer, test media sheets, gravimetric filter holder.

Accessories

Specify	Description
8118A**	Impactor Salt Generator
1081414R **	Oil Aerosol Generator
8119	Respirator Leak Tester Kit
8134-xx	Custom Filter Holders
8113-27	Neutralizer (optional for Model 8127)
800402	External Control Option for Robotics Applications
1035497	Spare Parts Kit for Model 8127
1081840	Spare Parts Kit for Model 8130

**To order a generator that is compliant with the EN 143 standard, please add –EN to the part number

Service and Support

(contact your TSI representative for more details)
+ Field Installation and Training (subject to location)
+ Service Contracts
+ Field Service

Specifications are subject to change without notice.

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