



® Knowledge Beyond Measure.

# Certitest™ Automated Filter Tester

Model 3160



## Determines penetration vs. particle size of filters and filter media.

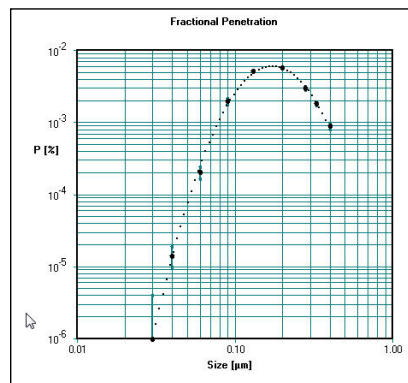
The Automated Filter Tester 3160 is the most advanced system available for challenging filters and filter media with submicrometer aerosols. It can be used to test both low- and high-efficiency filters and filter media, up to 99.999999% efficient (eight 9's), or penetrations down to 0.000001%.

The model 3160 uses a bank of atomizers and the TSI® Electrostatic Classifier to challenge a filter or filter media with known-size, monodisperse particles. Two Condensation Particle Counters (CPCs) simultaneously count the upstream and downstream particles and computer software calculates the penetration value. Filters can be sequentially challenged with up to 11 different monodisperse particle sizes in the range from 15 to 800 nm. The penetration value for each particle size is calculated. At the end of a test, the 3160 generates a curve of penetration vs. particle size and produces a summary of test results, including the most penetrating particle size (MPPS). Test results can be automatically saved in a Microsoft Access® data base and exported into Microsoft Excel®.

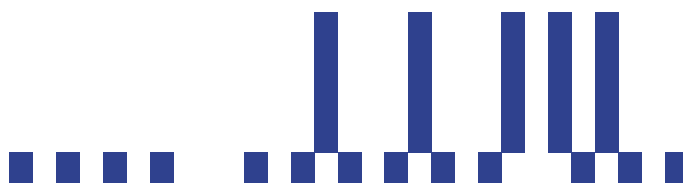
The model 3160 complies with EN 1822 parts 3 and 5, and ISO 294 63 parts 3 and 5. It provides the most complete information on filter penetration available from any filter tester. You'll find it invaluable for product development and quality control.

## Features and Benefits

- Determines most penetrating particle size (MPPS)
- EN 1822 parts 3 and 5
- ISO 29463 parts 3 and 5
- Simple automated operation
- Highly consistent test results
- Service and support



MPPS and fractional penetration results measured with Automated Filter Tester 3160



## Specifications

# Certitest™ Automated Filter Tester Model 3160

### Aerosol generation

Aerosol types	Salt (NaCl), DOP and other oils (consult TSI®)
Size range	Selectable from 0.015 to 0.800 µm using electrostatic classifier Geometric standard deviation <1.3

### Aerosol detection

Technique	Condensation particle counter (CPC)
Dynamic range	<0.01 to 10 <sup>6</sup> particles/cm <sup>3</sup>

### Aerosol flow

Technique	TSI thermal mass flowmeter
Range	Adjustable from 5 to 100 L/min
Accuracy	±2% of reading

### Pressure measurement

Technique	Electronic pressure transducer
Range	0 to 150 mm H <sub>2</sub> O (0 to 1470 Pa)
Accuracy	2% of full scale

### Efficiencies

Operating range	Measures particle penetrations down to 0.000001% or efficiencies up to 99.999999% (eight 9's)
-----------------	---

### Automation and Data Management

Laptop computer with custom software supplied

### Outputs

Full report in both graphical and tabular form on laptop that can be printed using the supplied software. Other options, include saving the data to Microsoft Access® or exporting it to Microsoft Excel®

### Built-in Internal Pump

Included

### Filter Holder for Flat Sheets Media

Included

Specifications are subject to change without notice.

Certitest, TSI and the TSI logo are registered trademarks of TSI Incorporated in the United States and may be protected under other country's trademark registrations.

Microsoft Access and Microsoft Excel are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.



**Knowledge Beyond Measure.**

TSI Incorporated - Visit our website [www.tsi.com](http://www.tsi.com) for more information.

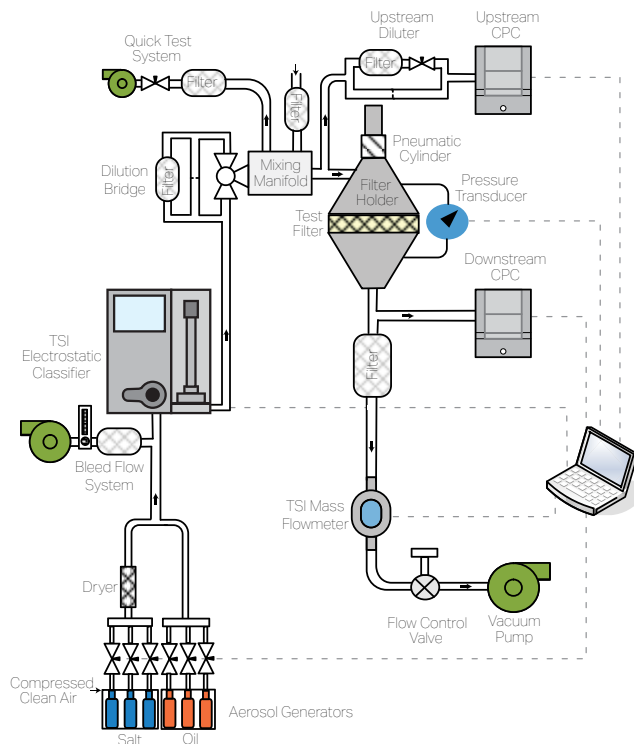
<b>USA</b>	Tel: +1 800 874 2811	<b>India</b>	Tel: +91 80 67877200
<b>UK</b>	Tel: +44 149 4 459200	<b>China</b>	Tel: +86 10 8219 7688
<b>France</b>	Tel: +33 1 41 19 21 99	<b>Singapore</b>	Tel: +65 6595 6388
<b>Germany</b>	Tel: +49 241 523030		

### Utility Requirements

Power	115 VAC, 60 Hz, 10 A or 230 VAC, 50 Hz, 5 A
Pneumatics	7 m <sup>3</sup> /hr at 415 kPa (4 scfm at 60 psi)
Dimensions (HWD)	183 cm × 122 cm × 81 cm (72 in. × 48 in. × 32 in.)

### Weight

410 kg (900 lbs)



## To Order

### Automated Filter Testing

Specify	Description
3160	Automated Filter Tester (115V, 60 Hz)
3160-1	Automated Filter Tester (230V, 50 Hz)

### Accessories

Specify	Description
8134-xx	Custom filter holders for model 3160
813010	Standard test media, 50 sheets
8107	External adapter for filter cartridges

### Service and Support

- Field Installation and Training (subject to location)
- Service Contracts
- Field Service

Contact your TSI® representative for more details