



Aerosol Photometer

MODEL 3990

Model 3990 is a linear digital aerosol photometer for scattered light with advanced technology and scientific design, and serves as the optimum test instrument for testing the integrity of the high efficiency particulate air (HEPA) filter or conducting leakage test. Considering the low concentration of atmospheric dust in the upstream of the HEPA filter under test, the aerosol generator should be used to replenish and generate dust to meet the test conditions. The aerosol photometer should be used to measure the concentration of suspended particulate matter in the upstream of the HEPA filter, and display the actual mass concentration value in $\mu\text{g/L}$; then conduct the scanning test at a constant speed in the downstream to get the leakage rate of the HEPA filter under test. It is easy for spotting the leaking points and quantifying it, which can be used for reference during repairing. The product is compact in structure and easy to carry, and all operations can be completed via the 5.6 inch color touch screen interface. The noise suppression function can be realized by setting the aerosol sampling time constant, which can make the test data more stable. With the built-in thermal printer, real-time test data printing at the test site can be realized.

Scanning probe and the host can be rapidly connected via a 4m cable and air pipe, which is easy to test the long-distance filter; Not only can be operated with the host in sync, but also can scan the one-dimensional code. Then, the test data will be convenient to statistical analysis by automatic identification so that improving working efficiency.



■ User Interface of Color Touch Screen and Chinese-English

5.6 inch true color touch screen, rich options, reasonable design, easy to control. With testing, setup, zero-point reconstruction, about and other interfaces. The setup part includes the Reagent, Noise Suppression, Alarm Mode and Date&Time and etc.



■ Enhanced Features

Upstream data will be displayed by the $\mu\text{g/L}$. The product owns the function of AKA noise suppression to avoid the effects of unstable aerosol concentration values.

■ Performance Guaranteed

Flow monitoring device and sampling pump with adjustable pulse width are to make sure the instrument operate well under all different or high altitude conditions. With advanced technology and scientific design, meet safety requirements.

■ Scanning Probe

The probe with 4M cable as an extension of the base instrument. Multi-function scanning probe, 1.8 inch true color display screen, which can display and operate in sync with the host. All data can be checked by scanning the one-dimensional code.



■ Data Reporting

The built-in thermal printer is available to report the real-time test data with long-lasting thermal printing papers;

The test data by USB, connected with our computer, can be transmitted and stored and made statistical analysis.





ISO9001, ISO14001 approved
JQA-2790, JQA-EM1628

The high-efficiency filter is put into operation. If there are leaks or gaps due to insufficient installation, the predetermined purification effect will not be achieved. Therefore, the necessary integrity test must be performed on the HEPA filter. Due to the low concentration of atmospheric dust upstream of the tested high-efficiency filter, it is necessary to use an aerosol generator so that conducting dust generation to meet the corresponding testing-conditions. You shall test the concentration of suspended particle matter upstream of the HEPA filter with aerosol generator, and then conduct a uniform-speed scanning test downstream. It does get to know the leakage rate of the tested HEPA filter, which is not only more convenient for the identification and quantification of all leak points, but can be used as a reference for repair accordingly.

SPECIFICATIONS

Model	3990
Flow Range	0.0001~100.0% LED Screen
Concentration Range	0.0001~600µg/L
Accuracy	reading 1% (0.01~100%)
Repeatability	reading 0.5% (0.01~100%)
Flow Control	1cfm (28.3L/min)±10%
Auto- zero	Establish the zero-point
Alarm	Audible, visual and vibration mode alarms when limit values are exceeded
Report Mode	Continuous, Summary, Monitoring
Print Way	Built-in printer
ID Code	One-dimensional code scanning, automatic classification and traceability
Data Output	USB
Reagent	PAO, DOP, Ondina, PEG, Krydol, Corn Oil, Mineral Oil, Paraffin
Certifications	NSF49, IEST, ISO14644, EN61010-1:2010, EN61326-1:2006
Power Supply	AC 100~240V 50/60Hz
Dimensions	300×155×370mm
Weight	10.7kg(Body)
Essential Accessories	host, scanning probe, sampling tube, manual, certification report, power cord, carrying case

Note: In case of changes in products design, specifications, and parameters, the latest data provided by our company shall prevail without prior notice.

Carrying Case



The GTI 3990 is equipped with a carrying protective box, which is convenient for transportation and movement. The internal scientific design, reasonable placement of related components, and durable protection of the GTI 3990.



Applications

- Biological safety cabinet
- HEPA filter validation
- Nuclear Energy and Fuels
- Pharmaceutical industry and electronics industry
- Medical operating room and clean room
- Food processing and scientific experiments



Features & Benefits

- 5.6inch true color touch display screen & interface in English
- Built-in thermal printer with long-term thermal printing paper and real-time printing
- The scanning probe has a one-dimensional code scanning function, and the data is automatically classified and traceable
- The scanning probe synchronous display and operation with the host, equipped with long cables and sampling tubes
- With aerosol noise suppression function, the test data is more stable
- Advanced technology, scientific design, compact structure and easy to carry

Easier Maintenance

The annual NIST traceable calibration service is carried out by GTI or a partner certified by the GTI service system training, and can also be carried out by an authoritative certification one.

Calibration includes setting zero-point reconstruction and calibration, confirmation of flow rate and voltage, necessary cleaning and maintenance of optical system, replacement of zero count filter, etc. Routine preventive maintenance includes cleaning and inspection of internal sampling pipe fittings, zero-point reconstruction and other checks and confirmations.

Service&Training&Maintenance@GTI

- Product calibration, maintenance, fault repair
- Excellent after-sales service by partners certified by GTI service system training
- Attentive service, complete parts production, timely repair

DISTRIBUTOR



Aerosol Generator

MODEL 3990-01

The Model 3990-01 of Laskin-Nozzle aerosol generator is portable, reliable and yet rugged. After the aerosol solution is injected, clean compressed air of 20 psi (0.14 Mpa) is introduced and when the flow is 810 cfm (1370 m³/h), the output concentration will be 100 ug/L through adjusting 1 to 6 pics of Laskin-Nozzle.

After the high-efficiency particulate air (HEPA) filter is put into operation, if there is any leakage point or leakage due to insufficient installation, the predetermined purification effect will not be achieved, and the high-efficiency particulate air filter must be tested for leakage. Due to the low concentration of air dust in the upstream of the tested high-efficiency particulate air filter, it is necessary to supplement the dust with an aerosol generator to meet the test conditions. Using aerosol concentration test instruments, such as aerosol photometer, to test the concentration of suspended particles in the upstream of the high-efficiency particulate air filter and conduct uniform scanning test in the downstream, so as to know the leakage rate of the tested high-efficiency particulate air filter, judge whether it leaks and determine the leakage point for repair reference.



■ Applications

- Testing leakage rate for HEPA filter
- Nuclear facilities and fuel
- Pharmaceutical industries and electronic industries
- Medical operating rooms and clean rooms
- Biosafety cabinets and clean benches
- Food processing and scientific experiments

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■ Key Features & Benefits

- Adjustable aerosol concentration output to meet different application requirements
- Air flow rates from 50 to 8100 cfm for a wide variety of testing requirements
- Optional reagents: PAO, DOP...
- No need for power supply, only compressed air supply is required to work
- Stainless steel portable housing, pressure resistant design, 3-inch standard sanitary flange outlet
- Large-capacity cavity to ensure long-term dust generation

Laskin-Nozzle Aerosol Generator 3990-01



ISO9001, ISO14001 approved
JQA-2790, JQA-EM1628

Ideal Portable Solution

The 3990-01 of Laskin-Nozzle aerosol generators is durable, portable, and reliable, which can generate 10~100ug/L polydisperse suspended particles. It is your ideal one that is used to test within local FFU and biological safety cabinets, clean benches and other tests in clean rooms. It can also be used in air conditioning and ventilation systems. Due to the limitation of the flow range, there are usually multiple dust source introduction points to implement segmented dust generation. If it is necessary to generate dust in the air-conditioning and ventilation system for all terminal high-efficiency filters, it is recommended to use the aerosol generator 3990-02 with a larger flow range and thermal principle.

SPECIFICATIONS

Model	3990-01
Flow Range	50~8100 cfm(1,415~229,230L/min)
Concentration Range	100 µg/L @ 810 cfm 10 µg/L @ 8100 cfm
Reagents	PAO, DOP, Polydisperse (cold)
Air Source	3~18cfm (85~510L/min)@20psi (0.14MPa)
Generator Type	1~6 Laskin-Nozzles
Dimensions	280×270×250mm
Weight	8.4 kg
Power Source	no need
Essential Accessories	Host, Hose Adapter Kit, Operating Manual
Optional Accessory	Carrying Case

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If the external air source pressure is greater than 20psi (0.14Mpa), the output concentration will increase, if it is lower than 20psi (0.14Mpa), the output concentration will decrease.
If testing the concentration of polydisperse suspended particulate matter upstream of the high-efficiency filter, it is recommended to open 2 or more Laskin-Nozzles.

Flexible Solution

It can produce polydisperse suspended particles that meet industry standards, and the concentration output can be adjusted according to actual needs to meet various application requirements. The 3990-01 can perfectly cooperate with the aerosol photometer 3990 to test the leakage rate of the HEPA filter, which is convenient for the identification and quantification of the leak point. The reference concentration range for repair can be 10~100ug/L, but different flows have been specific.

Rugged Design

The 3990-01 Laskin-Nozzle type aerosol generator features a stainless-steel shell, which will not deform the shell due to excessive pressure and is easy to clean. Large-capacity chamber, equipped with stainless steel spout connector, just need to adjust to the appropriate pressure to work.

Hose Adapter Kit

An optional hose adapter kit (hose not included), used to introduce aerosol remotely, connects easily to the standard outlet collar.



Heavy Duty Case

Due to the heavy weight of the generator, a portable heavy-duty case is sometimes required when moving or transporting. Internal scientific design, reasonable placement of related components



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- Product calibration, maintenance, fault repair
- Excellent after-sales service by partners certified by GTI service system training
- Attentive service, complete parts production, timely repair

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Thermal Aerosol Generator

MODEL 3990-02

3990-02 is a thermal and high capacity aerosol generator. It has an inner heating element can quickly transform the liquid aerosol reagent into a vapor state, which is sent out by inert gas (N_2 , Co_2) and other gases, and the vapor is rapidly cooled at the outlet to generate scattered aerosol. That will take less than two minutes. Generating the widest aerosol concentration range available, the 3990-02 will be used from cabinets to the most demanding clean room installation.

After the high-efficiency particulate air (HEPA) filter is put into operation, if there is any leakage point or leakage due to insufficient installation, the predetermined purification effect will not be achieved, and the high-efficiency particulate air filter must be tested for leakage. Due to the low concentration of air dust in the upstream of the tested high-efficiency particulate air filter, it is necessary to supplement the dust with an aerosol generator to meet the test conditions. Using aerosol concentration test instruments, such as aerosol photometer, to test the concentration of suspended particles in the upstream of the high-efficiency particulate air filter and conduct uniform scanning test in the downstream, so as to know the leakage rate of the tested high-efficiency particulate air filter, judge whether it leaks and determine the leakage point for repair reference.



■ Applications

- Testing leakage rate for HEPA filter
- Nuclear facilities and fuel
- Pharmaceutical industries and electronic industries
- Medical operating rooms and clean rooms
- Biosafety cabinets and clean benches
- Food processing and scientific experiments

■ Key Features & Benefits

- 2.4 inch true color display screen, which can monitor the inner gas circuit pressure and heating zone temperature in real time;
- Flow Range: 500~70,000 cfm
- Instant heating system, the heating time shall be less than two minutes
- The oil storage space has been increased by 60% compared with similar products to keep generating dust constantly
- The mechanical liquid level gauge displays the oil quantity, making it more intuitive to observe the liquid level
- Kinds of reagents for option: PAO, DOP...
- Applicable to different air conditioning flow rates

Thermal Aerosol Generator 3990-02



ISO9001, ISO14001 approved
JQA-2790, JQA-EM1628

Ideal Portable Solution

3990-02 can output high-concentration aerosols of 500~70,000cfm, and the heating time is less than 2 minutes. It is widely used in the filter leakage test of small air purification units to large clean room air conditioning purification systems. It is recommended to use Laskin-Nozzle aerosol generator 3990-01 or 3990-03 for testing of FFU inside the clean room, biological safety cabinet, clean bench. etc.

SPECIFICATIONS

Model	3990-02
Generation	Thermal vapor
Flow Range	833~119,000m ³ /h (500~70,000cfm)
Concentration Range	100mg/m ³ @11,900 m ³ /h (100µg/l@7,000cfm) 10mg/m ³ @119,000 m ³ /h (100µg/l@70,000cfm)
Warm-Up and Cool-Down Time	less than two minutes.
Particle Distribution	Meets ANSI/ASME N509/510
Aerosol Reagents	PAO-4DOS/DESH, Ondina DOP/DEHP mineral oil
Internal Capacity	1.8L
Power Source	220VAC 50Hz 8A
Input Pressure	345kPa (50PSI)
Dimensions	430×140×360mm
Weight	11kg

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Flexible Solution

It can produce polydisperse suspended particles that meet industry standards, and the concentration output can be adjusted according to actual needs to meet various application requirements. The 3990-02 can perfectly cooperate with the aerosol photometer 3990 to test the leakage rate of the HEPA filter, which is convenient for the identification and quantification of the leak point. The reference concentration range for repair can be 10~100ug/L, but different flows have been specific.

Rugged Design

The 3990-02 features a stainless-steel shell, which will not be deformed due to excessive pressure and is easy to clean. Large-capacity cavity, only need to adjust to the appropriate temperature and pressure to work.

Hose Adapter Kit

An optional hose adapter kit (hose not included), used to introduce aerosol remotely, connects easily to the standard outlet collar.



2.4 inch LED

Real-time monitoring and display of internal gas path pressure and heating zone temperature, clear and accurate.



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Aerosol Generator

MODEL 3990-03

Model 3990-03 is a portable and rugged aerosol generator with Laskin-Nozzle and a built-in compressor that does not require any other air supply. After the aerosol solution is injected, it can work when powered on. When adjusting pressure is 20 psi(0.14Mpa) and the flow range is within 50~2000cfm(85-3400m³/h),the aerosol concentration will up to 10~100ug/L.

Model 3990-03 aerosol generator will be used for bio-safety cabinets, laminar flow hoods, negative pressure filter units, filter modules or movable cleaning units because of its flow range ≤ 2000 cfm(3400m³/h).

After the high-efficiency particulate air filter is put into operation, if there is any leakage point or leakage due to insufficient installation, the predetermined purification effect will not be achieved, and the high-efficiency particulate air filter must be tested for leakage. Considering the low concentration of air dust in the upstream of the tested high-efficiency particulate air filter, it is necessary to supplement the dust with an aerosol generator to meet the test conditions. Using aerosol concentration test instruments, such as aerosol photometer, to test the concentration of suspended particles in the upstream of the high-efficiency particulate air filter and conduct uniform scanning test in the downstream, so as to know the leakage rate of the tested high-efficiency particulate air filter, judge whether it leaks and determine the leakage point for repair reference.



■ Applications

- Testing leakage rate for HEPA filter
- Nuclear facilities and fuel
- Pharmaceutical industries and electronic industries
- Medical operating rooms and clean rooms
- Biosafety cabinets and clean benches
- Food processing and scientific experiments

■ Key Features&Benefits

- Built-in compressor,no external air required
- Aerosol concentration from 10~100ug/L to meet various requirements
- Air flow rates from 50~2000 cfm to test a wide variety of filter systems
- Kinds of reagents for option:PAO,DOP...
- Stainless steel portable housing, pressure resistant design
- Large-capacity cavity to ensure long-term dust generation

Laskin-Nozzle Aerosol Generator

3990-03



ISO9001, ISO14001 approved
JQA-2790, JQA-EM1628

Ideal Portable Solution

The 3990-03 Laskin-Nozzle type aerosol generator has a built-in compressor and can work without other air sources. Rugged, portable and reliable. 10~100ug/L polydisperse suspended particles can occur. It is the best dust generating equipment for biological safety cabinet, laminar flow, negative pressure filter unit, filter module or movable clean unit. If it is necessary to generate dust in the air-conditioning ventilation system for all or local high-efficiency filters, it is recommended to use the aerosol generator 3990-02 with a larger flow range.

SPECIFICATIONS

Model	3990-03
Flow Range	50~2000 cfm (85~3,400m ³ /h)
Concentration Range	100µg / L @ 200 cfm 10µg / L @ 2000 cfm
Reagents	PAO, DOP, Polydisperse (cold)
Air Source	Built-in Compressor
Generator Type	2 or 6 Laskin-Nozzles
Dimensions	380×270×260mm
Weight	18.5 kg
Power Source	AC 100~240V 50/60Hz
Essential Accessories	Host, Hose Adapter Kit, Operating Manual
Optional Accessory	Carrying Case

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Performance Guaranteed

The 3990-03 has a calibrated pressure gauge to monitor the pressure adjustment value in real time, only 20psi (0.14Mpa), which meets the electrical safety requirements. It can perfectly cooperate with the aerosol photometer 3990 to test the leakage rate of the high efficiency filter. It is convenient for the identification and quantification of leakage points for repair reference. The concentration range is able to achieve 10~100ug/L, but the flow rate is different due to differing models.

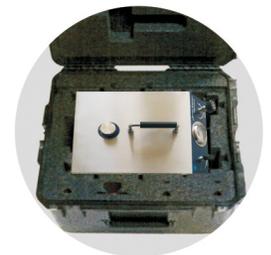
Easier Operation

3990-03 will not happen deformation caused by excessive pressure and is easy to clean due to stainless steel shell. Equipped with oil-viewing window and oil mist discharge port, the stainless steel spout connector allows the polydisperse suspended particles lead to the test end at a remote location and ensure not to leak.



Heavy Duty Case

Due to the heavy weight of the generator, a portable heavy-duty case is sometimes required when moving or transporting. Internal scientific design, reasonable placement of related components



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