

CBRN DEFENSE

Biodetection



Leverage Three Measurements for Biological Threat Detection

Features and Benefits

- Fast response time
- Three concurrent measurements of individual airborne particles provide low false alarm rates
- Solid-state laser diode offers ruggedness and long life
- Sheath air flow system keeps optics clean, minimizing maintenance

Fluorescence Aerosol Particle Sensor (FLAPS)[™] III System

Model 3317

TSI's Model 3317 Fluorescence Aerosol Particle Sensor (FLAPS) III System provides three real-time measurements of individual airborne particles. These correlated, single particle measurements give the FLAPS III exceptional discrimination and interference rejection for biological threat detection applications.

Applications

- Trigger device for Point biological detection systems
- Referee system for test sites
- Fixed site, reconnaissance vehicles, and ship board applications



TRUST. SCIENCE. INNOVATION.

Specifications

Model 3317 Ultraviolet Aerodynamic Particle Sizer Sensor

Particle Size Range
0.8 to 10 µm

Fluorescence Intensity

Short Visible Band Up to 32 channels

Long Visible Band Up to 32 channels

Scattered Light Intensity Up to 32 channels

Particle Types

Airborne solids and nonvolatile liquids

Max. Particle Concentration

1,000 particles/cm³ for <10% coincidence

Flow Rates (Volumetric)

Aerosol Sample 1.0 L/min

Sheath Air 4.0 L/min

Total Flow 5.0 L/min

Laser Source

Laser diode, 405 nm at 30 mW, CW

Laser Classification

Class I per 21 CFR 1040.10b(5)

Temperature Range

Storage -28 to 50°C (-18 to 122°F) continuous
-28 to 70°C (-18 to 158°F) up to 1 week

Operating Temperature

0 to 45°C (32 to 113°F)

Operating Humidity

5 to 95% Noncondensing

Physical Attributes

Dimensions (LWH) 254 × 381 × 178 mm (10 × 15 × 7 in.)

Weight 10.5 kg (23.1 lbs)

Power 22 to 28 VDC, 50 W typical

Communications

10/100 Base-T Ethernet; RS-232 serial (3)

Particle Concentration Options

Consult factory

Environmental Enclosure Options

Consult factory

Alarm Algorithm Options

Consult Factory

Specifications subject to change without notice. TSI and the TSI logo are registered trademarks of TSI Incorporated. Model 3317 is protected by U.S. patent numbers 5,701,012; 5,895,922; 6,831,279. This instrument is produced by TSI Incorporated under license from the Canadian Department of National Defence.

TSI Incorporated - 500 Cardigan Road, Shoreview, MN 55126-3996 USA

USA	Tel: +1 800 874 2811	E-mail: info@tsi.com	Website: www.tsi.com
UK	Tel: +44 149 4 459200	E-mail: tsiuk@tsi.com	Website: www.tsiinc.co.uk
France	Tel: +33 491 95 21 90	E-mail: tsifrance@tsi.com	Website: www.tsiinc.fr
Germany	Tel: +49 241 523030	E-mail: tsigmbh@tsi.com	Website: www.tsiinc.de



Exceptional Discrimination and Interference Rejection for Biological Threat Detection

The FLAPS III measures, for each airborne particle between 0.8 µm and 10 µm, the scattered light intensity and the fluorescence emissions in two wavelength regions. These simultaneous single-particle measurements enable end-users to distinguish biological threat agents from inanimate materials in real time.

Fluorescence and scattered-light signals are excited using a 405 nm laser diode which provides high reliability and stability and supports long service intervals. Fluorescence emissions are measured in two distinct wavelength bands by two highly-sensitive photomultiplier tubes. Real-time data analysis using advanced alarm algorithm techniques provides exceptional discrimination and interference rejection for biological threat detection.

FLAPS III Technology

The FLAPS III technology was designed and developed for rapid detection of biological agents. The FLAPS III is designed to operate with a particle concentrator that enhances the sensitivity and reduces the response time for biological threat detection. During independent testing, the FLAPS III has been shown to be an extremely effective "trigger" for detecting airborne particles with biological agent profiles. Within an integrated biological agent warning system, the FLAPS III serves as the fast-responding sensor to initiate sample collection and identification processes to confirm or reject a biological threat condition. The FLAPS III technology evolved from TSI's Ultraviolet Aerodynamic Particle Sizer technology currently deployed in the US Army's Biological Integrated Detection System (BIDS) Program and TSI's FLAPS II technology currently used by the Canadian Department of National defence and other biological threat detection programs worldwide.



TRUST. SCIENCE. INNOVATION.

Contact TSI or visit our website www.tsi.com for more detailed specifications.