



# Staplex

## Model TFIA series High Volume Air Samplers

- Indoor or outdoor sampling of ambient airborne particulates
- 0-70 cubic feet per minute (cfm) [0-2 cubic meters per minute (cmm)] flow range
- Spot or continuous monitoring of industrial, nuclear, chemical and biohazards
- Portable and lightweight
- Built-in rotometer for instantaneous flow reading
- Includes 4" (10.16 cm) diameter filter holder assembly
- For use in normal, non-explosive atmospheres
- Complete accessories available for use with Total Suspended Particulate (TSP), PM10 and PM2.5 Systems for U.S. EPA compliance
- Made in U.S.A.

### Standard Models:

**TFIA** 110-125 Volts AC/DC, 50-60 Hz **Best seller!**

**TFIA-F** Includes built-in Flow Adjuster - 110-125 Volts AC/DC, 50-60 Hz

**TFIA-CDT** Includes built-in Electronic Count Down Timer with LCD - 110-125 Volts AC/DC, 50-60 Hz

**TFIA-FCDT** Includes built-in Flow Adjuster and Electronic Count Down Timer with LCD - 110-125 Volts AC/DC, 50-60 Hz

**TFIA-2** 220-240 Volts AC/DC, 50-60 Hz **Best seller!**

**TFIA-2F** Includes built-in Flow Adjuster - 220-240 Volts AC/DC, 50-60 Hz

**TFIA-2CDT** Includes built-in Electronic Count Down Timer with LCD - 220-240 Volts AC/DC, 50-60 Hz

**TFIA-2FCDT** Includes built-in Flow Adjuster and Electronic Count Down Timer with LCD - 220-240 Volts AC/DC, 50-60 Hz

**TFIA-4** 24 Volts DC (35 cfm [1 cmm] maximum flowrate) 16 Amps

**TFIA-4BC** 24 Volts DC with battery cable with clamps, 16 Amps

**When normal currents are not available 24 Volts DC models are ideal for remote field use with 2 of 12 Volt DC automobile batteries in series.** Batteries not included. Ask about Staplex No. TF24B Portable 24VDC Battery Pack [20 minute run time; 6-hour charge time; weight: 19-lbs./8.6 kg], TF24CC Carry Case with Shoulder Strap and TF-24CU (110-125 VAC)/TF-24CU-2 (220-240 VAC) Charger.

Other special models available.

**Dimensions:** 8-1/2" x 7-1/2" x 7-1/2" (21.6 x 19.1 x 19.1 cm); **Carrying weight:** 10 lbs. (4.5 kg)

**Construction:** Sturdy Lightweight Dural Main Housing

### Description

Portable Air Sampler for indoor and outdoor sampling for all types of airborne particulates including environmental pollutants, nuclear and biohazards, industrial, governmental and military tests and studies, mine air hazards, factory dusts, chemical, radiological and toxicological analyses, as well as innumerable other types of research, quality control and testing applications.

### Principle of Operation

Large volumes of air are drawn through a filter by a high-speed rotary motor. Particulate matter in the air collects on various types and sizes of filter papers including Glass Fiber Filter Media.

### Standard Features

Universal motor, Pump, Variable Orifice Flowmeter calibrated 0-70 CFM or 0-2 CMM; 4" (10.16 cm) diameter Filter Holder Assembly, Filter Support Rod and Stainless Steel Mesh Adapter, carrying handle, on/off current toggle switch, 8 foot (38 cm) grounded cordset.

### Analysis of Collected Samples

Filters can be analyzed gravimetrically, by weighing, taring, ashing, spectrography, atomic absorption, comparator, microscopic count, chromatography, atomic colorimetric assay, and gamma ray spectroscopy, x-ray fluorescence and neutron activation etc., to identify pollutants and measure their concentrations.

## **Operation**

Proper filter is inserted into appropriate filter holder of air sampler and sampler is then ready for test operations. Initial flowrate is and sampling time is recorded. Flowrate is governed by size and type of filter used. (See Chart A Filters)

The Staplex SH4 4" Diameter Filter Holder Assembly, is equipped with filter support rod to be used as back support for Staplex TFA2133 filters. In addition, when using Staplex TFA41 Filter Paper and Staplex TFAGF41 Glass Fiber Filters, a special 4 " Diameter Stainless Steel Screen is required (included).

## **Calibration:**

The rate of flow is measured by means of an indirect, variable orifice flow meter (pressure indicator gauge). This indicates the pressure drop across an orifice in the housing and is calibrated against a standard orifice on the intake. Flowrate is determined by saturation of filter paper and should be recorded accordingly during sampling test periods. User can calibrate the flow meter in the field using the US EPA prescribed method for calibrating High Volume Air Samplers, using Staplex Model CKHV and CKHV810 Calibration Kits. (see additional data sheet).

## **General:**

Can be used indoors or outdoors, for mobile or fixed position operation either horizontally or vertically. Also available is a convenient Staplex TR-1 Tripod mounting. When required for protracted periods outdoors a special outdoor enclosed shelter in Aluminum (SAM) or Wooden (SWM) is available.

## **Maintenance:**

TFIA series models can be operated continuously when using TFA810 and TFAGF810 8" x10" filters continuously, with filters checked and changed as need, based on particulate saturation. No lubrication of any motor parts is required. Motor brushes should be check after every 600 hours of usage and changed as needed. Changing of brushes is recommended for every 800 - 1,000 hours of usage.

## **Accessories Filters –**

TFA41 Filter Paper 4" dia. (100/box)

TFAGF41 Glass Fiber Filters 4" dia. (100/box)

TFA810 Filter Paper 8"x10" (100/box)

TFAGF810 Glass Fiber Filters 8"x10" (100/box)

TFAQ810 Quartz Filters 8"x10" (25/box) [recommend for PM10 and PM2.5 Sampling]

TFA69 Filter Paper 6"x9" (100/box)

TFAGF69 Glass Fiber Filters 6"x9" (100/box)

TFA2133 Filters, 4" diameter (100/box)

**Filter Holder Assemblies - SH810** 8" x 10" and - **SH69** 6" x 9" Filter Holder Assemblies, as well as additional **SH4**, 4" Diameter Filter Holder Assemblies are available. The larger SH69 and SH810 Filter Holder Assemblies are made of polished Stainless Steel with Dural adapter ring and filter frame. **SH25** Filter Holder Assembly uses cartridge filters and is recommended for short term radioactive iodine grab sampling

All Filter Holders are interchangeable, which is an essential feature when tests require the use of several samples of the same or different type filters during critical tests in which the operator can use several loaded filter holders in order to avoid contamination

**Flow Adjuster/Brush Seater - Models FA-1 and FA-2** - To reduce flow rate from full flow rate to desired flow rate or to "seat" new motor brushes. (see additional data sheet)

**Calibration Kits - Models CKHV and CKHV810** - U.S. EPA prescribed method for accurate calibration of High Volume Air Samplers. U.S. EPA recommends that High Volume Air Samplers be re-calibrated at least once per year (or when major components such as the motor or flowmeter are changed). Model CKHV used with 4" diameter filter holder assembly. Model CKHV810 used with 4" or 8" x 10" filter holder assemblies. (see additional data sheet)

**Tripod Mounting - Model TR-1** - Where normal flat surfaces are not available for conducting air sampling tests. The Staplex® **TR-1** Tripod is recommended for mounting the TFIA series High Volume Air Sampler. The Air Sampler and Tripod can be assembled and placed in any required location in a matter of minutes. Maximum extended height: 60" (152 cm) / Collapsed height: 22.5" (57 cm)

**Aluminum Outdoor Shelter - Model SAM** - U.S. EPA prescribed design for enclosed Outdoor Shelter for continuous sampling with maximum air flow. Protects filter from rain and other weather elements. Designed for use with TSP (Total Suspended Particulate) Systems. [requires SH810 filter holder assembly]

#### **Timers -**

**DTM-1 and DTM-2 Digital 7-Day Timer** Turns Air Sampler "ON" and "OFF" at set times, 24 hours a day, 7 days a week. All functions are digital and quartz crystal controlled; includes digital clock with 1/4-in. LED display and 7.2 VDC rechargeable stand-by battery; intuitive programming format. Specify Model DTM-1 for 120 VAC, 60 Hz; Model DTM-2 for 230 VAC (specify 50 or 60 Hz when ordering). (see additional data sheet). ([pdf literature file available](#))

**MT-1 and MT-2 Mechanical 7 Day Timer** Turns Air Sampler "ON" and "OFF" at set times  $\pm$ 15 minutes, 24 hours a day, 7 days a week. Specify Model MLT-1 for 120 VAC, 60 Hz; Model MLT-2 for 230 VAC, 50 Hz

**DTM-4CDT Digital Countdown Timer** Turns Air Sampler "OFF" after preset times. Features LCD display and thumb-wheel setting dials. (range from 99,999 hours to 1 second). Size: 3" x 4-1/4" x 5" (7.6 cm x 10.8 cm x 12.7 cm); Weight: 1.75 lbs. (0.8 kg). Usable for 110-125 VAC, 220-240 VAC and 24 VDC.

**ETI-1 and ETI-2 Elapsed Time Indicator** Shows sampler run time in hours and hundredths (99,999.99 hours). Standard models are non-resettable mechanical models. Specify Model ETI-1 for 120 VAC, 60 Hz.; Model ETI-2 for 220 VAC, 50 Hz. (Re-settable model ETI-1R is also available for 120 VAC.)

**Constant Flow Controllers Models FC-1 and FC-2** - Automatically maintains a constant mass flow through an High Volume Air Sampler regardless of filter loading, atmospheric conditions and line voltage. Specify Model FC-1 for 115 VAC; Model FC-2 for 230 VAC. [requires SH810 filter holder assembly]

Models FC-1ETM and FC-2ETM include built-in non-resettable Elapsed Time Indicator.

Models FC-1MLT and FC-2MLT include built-in Mechanical 7-Day Timer and non-resettable Elapsed Time Indicator. ([see additional data sheet](#)).

**Flow Recorder - Models FR-1 and FR-2** - Provides a permanent record of High Volume Air Sampler performance during a 24-hour period. Specify Model FR-1 for 115 VAC; Model FR-2 for 230 VAC. ([see additional data sheet](#)).

**Annular Kinetic Impactor - Model AKI** is designed for inertial collection especially of radioactive particles ([see additional data sheet](#)).

#### **Carrying Cases -**

**TFIA-CC** Carrying Case for Model TFIA, TFIA-2 or TFIA-4 High Sampler and filters (includes shoulder strap).

**TF-CCK Carrying Case** – for water proof storage and carrying of Model TFIA Air Sampler, SH810 8"x10" Filter Holder, TR-1 Tripod, Filters and other accessories. ([see additional data sheet](#)) ([pdf literature file available](#))

**TSP (Total Suspended Particulate) Air Sampling Systems** - for U.S. EPA environmental ambient air sampling ([see additional data Sheet](#))

**PM10 and PM2.5 Size Selective Inlet and Air Sampling Systems** - for U.S. EPA PM10 and PM2.5 environmental air sampling. Staplex Size Selective Inlets are available separately as Part No. PM10-SSI and PM2.5-SSI for conversion of existing TSP (Total Suspend Particulate) High Volume Air Sampling Systems to PM10 and PM2.5 Systems. ([see additional data sheet](#)). ([pdf literature file available](#))

**High Volume Cascade Impactors, 4, 5 & 6 Stage models** - for particle size separation ([see additional data sheet](#)).

*Ask about Staplex Area and Personal Air Samplers of for asbestos, lead, nuisance dusts and other industrial hygiene air sampling applications.*