Environment, Hygiene & Health

Emission Monitoring

Industrial Analytical Systems

tecora

A DIVISION OF OMNISENSE TECHNOLOGIES

ENVIRONMENT, HYGIENE & HEALTH CATALOGUE

Environment, Hygiene & Health

Determination of dust at low flow concentration
Manual Sampling System MANISOL

Manual stack sampling is the most common way to test an emission source of particles according to EN13284 and USEPA M17. Tecora offers a fine application for manual stack test, easy to use with state of art equipments, which allow data logging of stack flow pitot tube, stack temperature, optimal nozzle and pump flow calculation to keep the isokinetic condition of the sampling. A flow computer and a data logger with its high storage capability, save time and assure the quality of the sampling execution. Tecora completes its offer with a wide variety of accessories for stack sampling as probes, filter holders and refrigeration systems.

MANISOL includes the following devices:

Flowtest St

Flowtest St allows the operator to calculate the sampling point and to define the sampling time for each point. The instrument executes the measurement and records velocity, temperature and pressure point-by-point. An important feature of Flowtest St is the universality of the thermocouples: infact, it is possible to use J, K or T type. This means that who already has a probe doesn't need to buy another one and can use his own.

Bravo Series

Portable constant flow samplers with wide range of flowrate manually adjusted. Suitable for dust and gas sampling either in stack emission or in ambient. Available in Basic and Plus versions, equipped with membrane or rotary vane pump.

Standard integrated stack sampling probe

Cooling and moisture collecting system with glass impingers which solves the double task of cooling the sampled gas and collecting the moisture for the determination of water vapors content in fumes.

Tecora offers the perfect solution for any emission test

Automatic isokinetic sampling

Automatic stack testing is the most reproducible application to perform samplings according to EN13284 and USEPA M5 for fixed source emissions, EN1948 and USEPA M23 for dioxins and furans, EN13211 for side stream, EN14385 for heavy metals and EN1911 for acids. Tecora automatic isokinetic samplers assure an uncommon sampling quality thanks to excellent isokinetic condition control, accurate measurements and logging of all parameters with frequent updates and quality check-tracing for all sensors, as required by the official methods.

NEW

ISOSTACK G4

G4-1

G4-2

Isostack G4 is available in 2 versions: all in one (G4-1) and split (G4-2), both available with a 4 or 8 m3/h pump, to meet different type of use. The new functionalities of the software allow to manage the sampling in an easy and intuitive manner. New utilities are auto check at starting, leak test in line during sampling, duct's library, log measurement and alarms, automatic re-start in case of flue gas velocity alarm. Isostack G4 uses quality components which grant reliability in time. The advanced autotest function allows to point out anomalies and malfunctioning before starting the sampling. The new pneumatic circuit, the component's arrangement and the removable wide carter frame, make the maintenance operations fast and easy to perform.

Accuracy/Sampling quality (QA/QC)

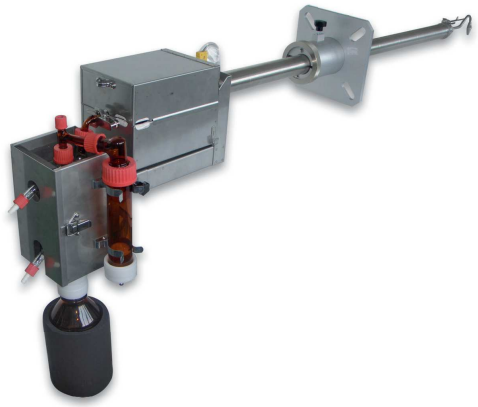
Isostack G4 allows to follow quality control procedures for the automatic isokinetic sampling. Each sensor and measured parameter has a calibration traceability, which is stored on the instrument's memory and is downloadable via USB. Each sensor and acquired width has a calibration curve on 5 points. The autocalibration function allows to verify the calibration of flow and volume measurement elements and eventually to adjust them to an external reference.

Other features of the instrument are: fast isokinetic control at any stack condition; volume measurement with dry gas meter; in-stack temperature and velocity measurement; USB interface to download data; autotest and alarm management; possibility to store up to 256 reports; reduced maintenance.

Tecora offers the perfect solution for any emission test

Environment, Hygiene & Health

Micropollutant sampling based on filter condenser method according to USEPA M23/EN1948-1



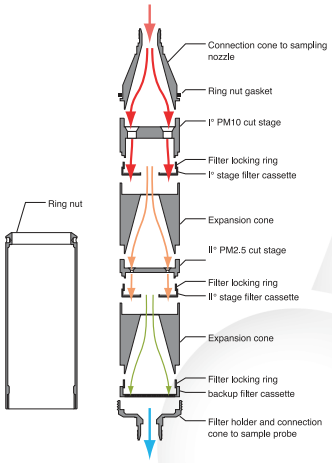
Micropollutants, heavy metals and acids sampling requires experienced operators, application knowledge and excellent equipment to perform it according to standards, quality control and quality assurance procedures. The above mentioned samplings require heated probes, heated box and good reliable engineering solutions, in order to capture the pollutants and make the system easy to handle on stack platform. The sampling line according to EN1948 and USEPA M23 requires efficient condensers and adsorbent traps. For micropollutants capture it is necessary a long term sampling - minimum 6 hours - to collect at least 4 m3 of sample. Isostack G4 and its accessories assure quality sampling, accurate data, logging integrity and a superior supervision of the sampling system.

Heavy metals and Acids sampling according to EN14385 and EN1911

Heavy metals and acids determination requires a sampling line with side stream technique, with an easy to handle heated probe and an heated box with refrigerated impinger bath, to easily handle stack traversing. Standard applicable are: EN 14385 and USEPA M29 for heavy metals; EN13211 for mercury and EN1911 for HCL. Many other standards can be performed in flexible way by Tecora's heated probe.
Heavy metals and acids sampling requires a complex circuit, with a main isokinetic sampling line and a side stream sampling at constant flow. Isostack G4 and its accessories assures quality sampling, accurate data, logging integrity and a superior supervision of the sampling system.

PM10-PM2.5 Speciation according to ISO 23210

MSSI impactor is realized according to ISO 23210 and in compliance with EN 13284 for PM10 and PM2.5 simultaneous determination. The impactor can be supplied with 2 different inlet cones to allow vertical and horizontal sampling, depending on the stream direction into duct.



NEW! A new separation stage, with a PM 4 cut point is now available. It can be placed after the PM10 stage (removing the PM2,5 stage), in order to sample together PM10 and PM4 (thoracic) fraction, increasing MSSI potential.

Tecora offers the perfect solution for any emission test

Cooling devices

Isofrost 2

Cooling device with temperature control and liquid recirculation. Recommended for micropollutants condensing or temperature controlled cooling bath.

Igloo

Stainless inox cooling and condensing device, equipped with an independent refrigerating system, which allows to use it for long time.

Cooling device

Cooling and moisture collecting system with glass impingers which solves the double task of cooling the sampled gas and collecting the moisture for the determination of water vapors content in fumes.

EG Peltier

Cooling and condensing device equipped with a Peltier system that ensures the ideal temperature maintenance (without ice or water) during sampling.

Emission gas sampling

DDS

DDS system assembles in a single case the sampler and the dilution unit and is supplied by an internal rechargeable battery with up to 7 hours autonomy. DDS is equipped with a membrane pump, a precision flowmeter, a temperature indicator and a dry gas meter for both pumps.

DDS/EG Probe

The sampling probe DDS/EG can be used for sampling gaseous compounds with or without using the dynamic dilution system. It is equipped with a heated filterholder and a heated dilution chamber. The probe is supplied with a carrying case containing a power supplier of 220/110-12 V and a battery that allows to work even if there's no power supply.

Easy Gas

Constant flow sampler equipped with a dry gas meter for low flow and a thermometer for temperature measurement. The sampler allows a sampling flow rate from 0.2 to 1.2 l/min and is supplied with a rechargeable battery, which grants up to 10 hours autonomy. Easy Gas integrates a silica gel trap and a protection filter, which avoid pump damages caused by aggressive stack gases or by the accidental suction of the adsorbing solution.

Tecora offers the perfect solution for any emission test

Environment, Hygiene & Health

Particulate matter sampling

To check air quality in urban area or in the country side, it is necessary to monitor PM10, PM2.5, PAH and Heavy Metals, according to recent European directives.

ECHO HI VOL

For PAH: ISO12884, ISO 16632 and EN15549[1]
For PCDD/F: ISO12884 and EN15549[1]

[1] In compliance, except for the flowrate at 500 lpm

SKYPOST PM and ECHO PM

For PM and Heavy Metals: EN 12341/14907, ISO 16632

TÜV Approved

Air sampling

The reference method to sample gas are tubes or impingers, as established by the official standard OSHA and NIOSH. Tubes and impingers require low flow to allow enough contact time between species and adsorbent.
This application is mainly used for inorganic compounds sampling (SO2, NOx, HCL, HBr, NH3, HF, etc).

Bravo Series

Portable constant flow samplers with wide range of flowrate manually adjusted.
Suitable for dust and gas sampling either in stack emission or in ambient. Available in Basic and Plus versions, equipped with membrane or rotary vane pump.

Bravo Asbesto + C.A.Th.I.A.

The pump Bravo can work at 7 l/min and can be used in combination with the filter-holder model C.A.Th.I.A., equipped with the thoracic selector. This system is dedicated to sampling asbesto's fibers, in compliance with the French norm NF X43-050. Bravo Asbesto is available with other working range to comply with other European norms regarding asbesto's sampling.

Delta Mk2

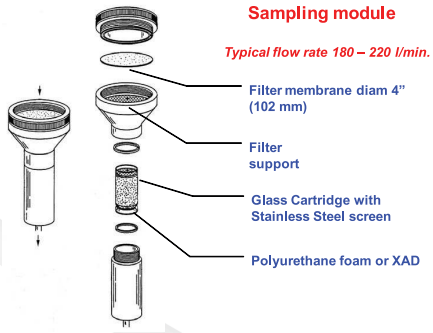
As requested by the official methods, Delta MK2 integrates a dry gas meter (DGM), which allows a double control (flow and volume) on effettive sampling performance: this grants the accuracy of the output data.

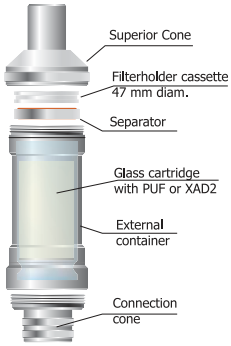
Air quality sampling solutions

High Volume Samplers for PM10 and PM2.5

Echo Hi Vol

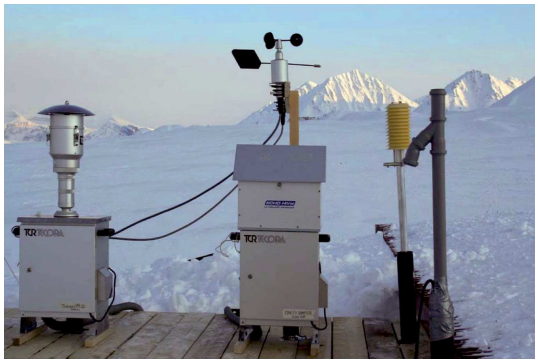
Echo High Vol is the smallest footprint and lightest sampler in the market. It works with an electronic flow control at standard and actual condition, with flowrate range between 100 and 600 l/min. Echo Hi Vol can be used to sample TSP on a membrane filterholder diam. 150 mm or to sample PCDD/F and PAH in gas and particulate phase through a sampling module with a membrane filterholder diam. 102 mm and a PUF or XAD-2 glass cartridge, in accordance with ISO 12884, ISO 16362 and USEPA T09 methods.





PM Hi Vol

High volume PM10 and PM2.5 sampling heads with a flowrate of 12 m³/h, according to the official methods, UNI EN 12884 and USEPA T09, for the determination of PCDD/F and PAH, both in particulate and in gas phase.
The HVS sampling inlet can be installed at any time to Echo PUF or Echo Hi vol, combined with PUF cartridge module.
PM10 and PM2.5 impactors at 30 m³/h are available.



Example of Echo Hi Vol sampler assembled with the roof adapter for PM10 sampling head (Svalbard Island - International Research Center)

Environment, Hygiene & Health

Low Volume Samplers for PM10 and PM2.5

Echo PM

Automatic outdoor station for atmospheric particulate matter sampling in a wide range of electronic volumetric flow control for EN and USEPA sampling heads. Available for single filter or 2 lines sequential sampling. Designed in compliance with ISO EN 12341 norm for PM10 and PM2.5 sampling.

TÜV Approved

Skypost PM HV

Automatic outdoor station for continuous atmospheric particulate monitoring on 47 mm diameter filter membrane, according to sampling method EN12341. The sequential substitution system of the filtering membrane with 16 membrane capacity, in addition with the electronic flowrate controller, allow continuous, unattended operations, as well as an easy replacement of the exposed filters, without interrupting the sampling. The sampling probe ventilation system guarantees a differential pressure between the filter and the sample inlet of maximum 5° C, in accordance with EN14907.

Skypost PM HV can work even in extreme ambient conditions...

TÜV Approved

Charlie HV

Electronically controlled flowrate sampler for particulate matter and gas pollution detection. The instrument is certified by Tuv in accordance with EN 12341. Charlie HV works at a flowrate between 10 and 50 l/min and is suitable for dust sampling with LVS PM sampling head at 2.3 m3/h, according to EN 12341. Charlie HV can be combined with Sentinel PM module.

Sentinel PM + Charlie HV: a modular system for station and mobile labs

SENTINEL PM module, combined with the sequential sampler Charlie HV, allows the automatic and sequential collection of the atmospheric particulate matter on 47 mm diameter filtering membrane, contained in an appropriate filterholder cassette. The sequential substitution system of the filtering membrane with 16 membrane capacity allows continuous, unattended operations, as well as an easy replacement of the exposed filters, without interrupting the sampling.

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Air quality sampling solutions

Multifunction calibrator

FLOWCAL *Air*

Flowcal Air is more than a simple flow calibrator: it allows to perform all necessary controls to verify the calibration of some parameters, which are normally measured by sampler, like flowrate, pressure and temperature. This characteristic makes Flowcal Air unique to test the accuracy of an instrument and to follow a quality system procedure. Flowcal Air generates a calibration report, containing the following data: cell in use, calibration expiration date, ambient conditions during verification test, deviation, etc. To download the report, simply insert and copy file onto the USB key supplied with the instrument.

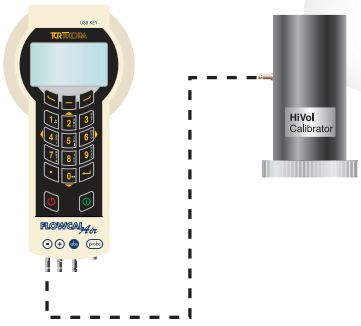
Sensor and measurement calibrations have been performed with high accuracy and care. Each sensor is calibrated through an accurate procedure and is traceable to standards.

Flowcell Air - Flowcal Air can be used with Flowcell Air. These cells are calibrated individually: each one saves on its microchip all the information for the calibration traceability. Three cells are available: **Hi Flow cell**, with range 150 – 600 l/min; **Mid Flow cell**, with range 10 – 50 l/min and **Low Flow cell**, with range below 10 l/min.

Flowcal Air HiDP - It is possible to use Flowcal Air with calibrated measurement orifices, like US EPA calibrators for high flows. Introducing in Flowcal the manufacturer's calibration constants, it is possible to transform the old orifice into an electronic range measurement. The range will be shown at standard and actual conditions, so it won't be necessary anymore using the U tubes and calculate the measurement flow each time.

Other features of Flowcal Air: power supply with alkaline or rechargeable batteries, replaceable by customer, battery autonomy up to 90 hours, internal memory capability up to 256 reports.

Low volume system calibration



Flowcal Air HiDP with USEPA calibrator

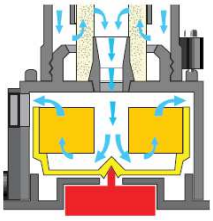
Flowcell Air

Air quality sampling solutions

Environment, Hygiene & Health

Personal Dust Sampler CIP10

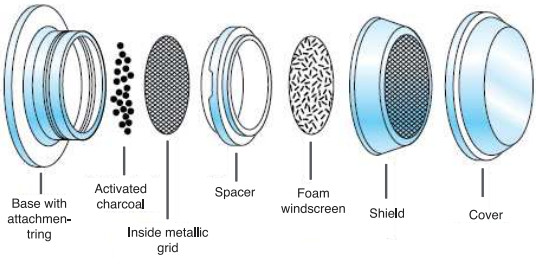
Developed by INERIS (French National Institute for Research and Safety), the individual dust sampler CIP10 is a stand alone unit dedicated to the collection of dust like crystalline silica and wood fiber, in order to evaluate the concentration of dust inhaled from worker during his work time.
The sampling principle is based on the rotation of a foam, whose cells lead to an aspiration flow rate of 10 l/min, similar to the human respiratory flow rate.
CIP10 has a modular architecture with 4 interchangeable selectors for particulate fractions.



The polyurethane foam creates the flowrate and collects the dust

VOC passive sampler GABIE

The G.A.B.I.E. (Gas Adsorbent Badge for Individual Exposure) badge was developed by INERIS (French National Institute for Research and Safety) and allows the collection of different gases and organic vapours (up to 175), in order to determine the Average Exposure Values (TWA). The volatile organic compounds (VOC) present in the atmosphare are captured by diffusion and trapped on an activated charcoal located on the bottom of the badge. At the end of collection the badge must be send immediatily to the laboratory, who performs the desorption of the desired pollutants using a solvent and the analysis of the obtained solution.



NEW

Personal Sampler AYRON

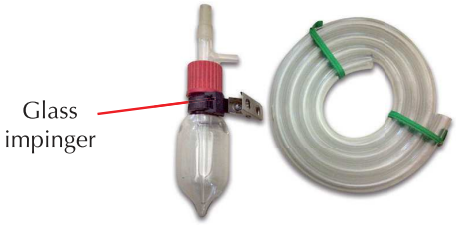
AYRON is the new personal sampler developed by Tecora. It allows to set the range from 20 to 5000 cc/min. The flowrate is continuously controlled and measured. Furthermore, the instrument has an integrated low flow by-pass, so it is not necessary to use an external calibrator to set low flow rates.
The pump grants an high pressure drop compensation, while the Li-ion batteries allow to spare money and time, with more than 8 hrs duration and low cost battery replacement.
AYRON has a very simple user's interface: with only 6 keys, it is possible to manage all the functions.
The instrument has an internal memory that can store up to 125 sampling reports, downloadable by USB flash memory.

Tecora is able to provide all the necessary accessory to perform different indoor applications

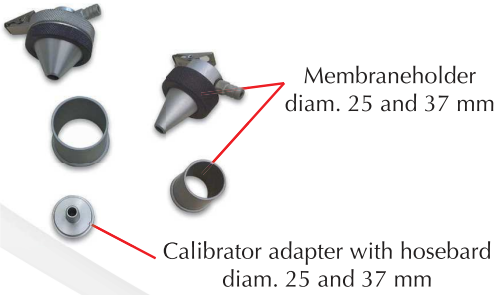
Examples:

Gas sampling with tubes

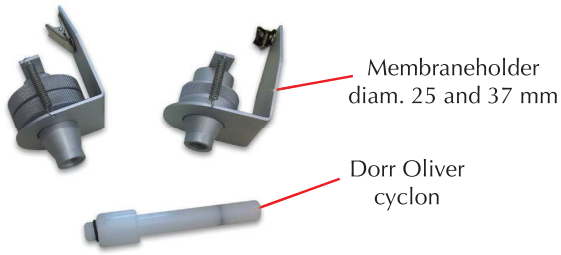
Gas sampling with impingers



Total Dust - Asbestos



Respirable fraction



Inhalable fraction

Respirable fraction

Sampling tubes to sample different compounds. All tubes are located into plastic boxes, which allow an easy and safety transportation

Membranes and thimbles available in different materials and porosities

Tecora's main offices are located nearby Paris and Milan.

We can also rely on a worldwide network of trained distributors, which assure technical support and calibration service.

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