

AirCube COM2-TH

**Portable Air Sampler with
electronic flow control**



Environmental and remediation sampling

Industrial hygiene applications

**Emission sampling protocols based on EPA
and CEN regulations**



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Portable Air Sampler with electronic flow control

The era of samplings with long interminable settings can be considered over with the AirCube™ COM2 TH portable sampler. With just a few operations in the user-friendly set-up menu the sampler is immediately ready for a new sampling protocol. Inhalable particles, suspended fibers, toxic gasses and particles in industrial emission: The AirCube™ COM2 TH sampler is the universal solution to all sampling needs. Stop on manual By-Pass or inaccurate and impractical calibrated orifices for high and low flows. You just need to set the desired flow and then let the sampling begin. With the flow range included among 0.3 and 30 liters per minute in a single dynamic scale, the AirCube™ COM2 TH has no competitors on back pressure compensations and accuracy.



- **Lightweight and compact design, weight not over 8,0 kg**
- **Flow range between 0,3 e 30 liters per minute with a unique dynamic range.**
- **No useless adapter for working at low flow rates**
- **Long-lasting battery pack guaranteeing extended sampling sessions depending on back pressure**
- **Single head Viton membrane pump**
- **Built-in Volumetric dry gas meter with electronic encoding system**
- **Comply with norms RoHS-2006 and normative UNI-EN.13137:2013**
- **RS extension to connect with isokinetic controller parameters device**
- **USB device to download data and to update sampler firmware**



The first and only ultra compact The AirCube™ COM2 TH sampler is the true compact in the category with only 24 cm (per side) and 27 cm (height) but with inside the dry gas meter as required by the most common current regulations. It belongs to the second generation of portable successful line of samplers manufactured by AMS Analytica. New for its compactness, lighter in weight, has an exclusive proportional flow control valve for a precise and accurate flow adjustments. Unique in its category, the AirCube™ COM2 TH sampler is powered directly from the AC 220 power, without the use of external power supply, and

by rechargeable batteries (external option). The electronic controller with high-resolution, back light graphic display allows an easy and intuitive data setting and immediate readings during operational sampling phases, real time readings all of the sampling informations. Partial volume sampled and sampling time. Furthermore, still from the display it is possible to follow the the sampling progress graphically distributed on the base of aspiration flow and time. This option allows the verification and validation of the sampling validating the data with the calculation of the standard deviation (RSD%).



- **Immediate flow and session average flow report**
- **instantaneous dry gas meter temperature and average sampling session temperature,**
- **instantaneous environmental temperature and average session sampling temperature,**
- **instantaneous and average atmospheric barometric session sampling pressure**

Technical specifications

- Flow adjustment range 0.3-30 liters/minute
- Maximum operational flow 29 liters/minute (tested with 47 mm glass fiber filter 1800 mm/H2O)
- Maximum back pressure compensation: 2200 mm/H2O
- Controlled electronic back pressure compensation
- Single head membrane aspiration pump
- Pulse attenuator with electronic pressure control
- Automatic flow regulation of the aspiration flow with patented proportional flow control valve
- Sampling time, flow and volume setting directly from the keyboard
- Direct detection and calculation of the average for:
- Dry gas meter temperature
- Environment temperature
- Atmospheric barometric pressure
- Aspiration flow
- Wind speed and direction (when the sensor has been installed)
- Graphic viewing of the sampling progress with calculation of the standard deviation
- Remote control with GSM/GPRS modem (Optional)
- Sequential sampling device (up to 16 filters) for TSP and asbestos application
- Total volume detectable from the integrated dry gas meter
- Set-up of pressure and temperature for standardization

Other specifications

- Weight 8 Kg.
- Dimensions: 245x245x270 mm (LxDxH)
- EC Conformity on Electromagnetic Compatibility 89/336/EEC referred to the EN 50081-1, EN 6111- 6-2, EN 55014-1, EN 61326-1 end EN 60204-1:1997-12 norms regarding electrical safety tests of the device
- 12V DC power with Power Pack Com battery pack (Optional 600/PP014A3COM2)
- Electrical power from the 220V / AC with standard cable



Tech-Note on asbestos sampling

Certainly one of the most discussed topics refer to environmental monitoring of asbestos fibers. Many remediation processes have contact with asbestos in their steps, automatically provide for personal or environmental monitoring to subsequently quantify the airborne fibers. Remediations, constructions sites and excavation in tunnels, all applications where the AirCube COM2TH sampler supports companies involved in this type of activity. For environmental sampling, membranes or pre-loaded cassettes with 25mm diameter can be used. Alternatively, in case of high dust concentrations, due to the various processes, it is also possible to use a larger filter diameter such as 47mm. The support will be positioned on a stand in a suitable predetermined point and connected to a constant flow sampler with flow between 6 and 10 l / min (max 16 l / min according to US-EPA protocol). The sampling time will depend on the duration of the operations and in any case necessary to reach a volume of not less than 3000 liters.



AirCube COM2TH sampling applications

Mainly the AirCube samplers models are divided by flow application range, electronic features and application extensions through dedicated accessories. The diagram below shows the flow characteristics and application expandability, which differences from sampling applications with multi sequential filter device, to those with sequential sampling device with sorbent tubes, dedicated to monitoring applications of toxic gases and vapors, up to get to the connection

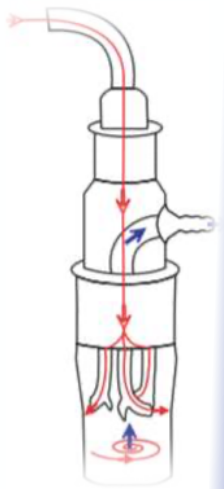
Total dust or asbestos fiber sequential sampling: it is based on 8+8 filter support, programmable directly from sampler. The user can select sampling time or volume depending on application needs. Basically for TSP the standard filter holder is 47 mm and 25 mm for asbestos sampling.



with the IsoFlow Isokinetic parameter portable calculator, to perform emission sampling in compliance with EPA and CEN requirements. Other applications refer to outdoor PM sampling with US EPA style impactors or cyclones for PM10, PM2,5 and PM1 application. Other applications refer to Biological sampling with the Biosampler support and Industrial Emission sampling to comply with CEN and US EPA regulations.

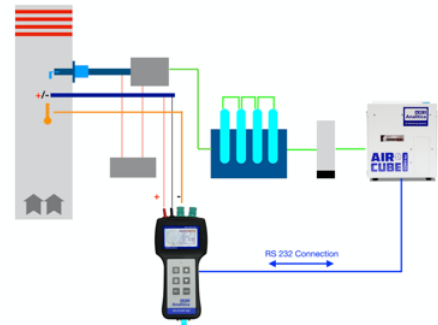
Sorbent tubes sampling device: The AirCube COM2 can be connected to a sorbent tube sequential sampling device. Any GasCheck Basic has 6 sorbent tubes support and the sampler can drive two units, with a total sorbent tubes number of 12. Each sampling support keep the tubes individually sealed between one sample and the other. Ideal for VOC fence line sampling or indoor air quality applications.

Biological sampling: the AirCube COM2 sampler, can be connected to a SKC Biosampler device for long term virus and bacteria collection. Suitable for outdoor and indoor air quality practice. The BioSampler® has been designed for the sampling of biologically inert microorganisms and particles at a flow rate of 12.5 l / min. The device consists of three parts: the inlet section, the nozzle section and the collection container section. As shown in the picture, the environmental aerosol is sampled horizontally in the inlet device, in a similar way to other bubblers. The downward aerosol stream is then divided into three nozzle streams. Each nozzle has a sonic orifice that allows approximately 4.2 l / min of ambient air to pass, if the sample pump establishes a downstream pressure of 0.5 atm or less. Each of the nozzle orifices is directed at an identical angle to the curved inner surface. The aerosol particles are directed at an angle towards the surface and are removed by the combined forces of impact and centrifugal motion. The presence of three angular nozzles establishes a swirling air movement in the collection vessel. The whirling air flow drags the liquid and makes it rotate upwards, in the region where the air flows from the nozzles reaching the internal surface of the vessel. The centrifugal movement of the air flow eliminates the impact effect of the micro organisms, effectively eliminating stress during the sampling period. The BioSampler® can be used with water or liquids of similar viscosities and with non-evaporating fluids with viscosity up to three times that of water.



Respirable particles area sampling: The sampling methods, dedicated to the respirable fraction, among the various sampling procedures, also provide for area or fixed location sampling. The filter holder must be mounted on a support, approximately at the height of the human head (150-160 cm from the floor), away from obstacles, air discharges or strong air currents. Area sampling for respirable dust can be used to determine the levels of particle contamination in the work environment. However, be careful not to compare the data between the area preselectors with the personal ones, as those at a fixed location can provide lower concentration data. The samplers of the AirCube - AMS Analytica line lend themselves well to this type of application, guaranteeing excellent performance in flow constancy and in the compensation of pressure drops.

Emission monitoring: the AirCube COM2 is the perfect choice for emission sampling control. It can be combined with the isokinetic IsoFlow calculator, IsoFlow, for real time sampling applications, based on EN-13284:2017 and EPA M5 and M17. The AirCube sampler combined with the isokinetic calculator, can perfectly perform any emission sampling protocol with "in-stack filter" or "out-stack filter". Further application works for Dioxins, Metals, Inorganic Acids, Mercury, Sulphur Dioxides.



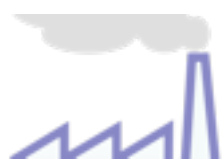
Emission sampling protocol based on US EPA M5 and CEN out-stack application With AirCube COM2-TH sampler and IsoFlow 202 Pro calculator



PM10 and PM2,5 portable sampling kit with US EPA style impactor: The PM10 and PM2,5 US EPA sampling inlet is a part of a new field portable sampling system combined with a constant flow rate AirCube Sampler. The PM inlet are manufactured in fully compliance with US EPA CFR 40 requirements based on available in the reference method. Fully manufactured in anodized aluminum for outdoor applications and available optionally with the ambient temperature sensor. System is easy to locate and a real quick sampling set-up on field. The sampler can also detect the ambient pressure and ambient temperature, for a complete field sampling protocols.

Sampler technical features

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|---|---|
| Sampling flow range | 0,3 - 30 liters per minute |
| Max flow rate available | 30 liters per minute with glass fiber filter GF1 47 mm |
| Max back pressure compensation | 2200 mm/H ₂ O |
| Back pressure control | Electronic flow control on a full flow range |
| Aspirating pump | Single head with pulsation dampener |
| Flow adjustment | Electronic with a patented flow control valve |
| Flow control | With dry gas meter with digital encoder |
| Flow accuracy | 2% |
| Additional flow control with mass flow (Opz.) | Mass Flow sensor with 1% accuracy |
| Sampling set-up | Standard electronic keypad |
| Sampling parameter | Available on a plasma display |
| Dry gas emperature sensor accuracy | +/- 0,1°C |
| Ambient temperature sensor accuracy | +/- 0,1°C |
| Barometric sensor accuracy | +/- 0,1 mBar |
| Remote control | With GSM module (upon request) |
| Wind velocity and direction sensor | External sensor available upon request |
| Data ports output | USB e RS232 |
| Electronic connections | With isokinetic calculator IsoFlow 202 Pro to comply with ISO 9096 ed ISO 16911 EPA 1 and 2 |
| Power supply | 220V-AC and with external battery pack |
| Weight | 8 Kg |
| Dimensions | 245x245x260 mm (LxPxH) (245x245x400mm with battery pack installed) |



Ordering Informations

| | |
|------------------|---|
| 600/A30002C-TH | Air Cube Com-2TH portable sampling pump |
| 600/PP014A3COM2 | Power Pack Cube Com2 (battery charger not included) |
| 600/A24VISKPP | PowerPack battery charger with cable and power cord (COM2-TH) |
| 600/EV001P | TSP sequential samplig device 8 positions (Require sampler) |
| 600/EV0005 | TSP protection shield |
| 600/PFEV | 47 mm filter holder with filter support cassette EV version |
| 600/AFPUF1001GSM | GSM/GPRS module (no card supplied) |
| 600/STE001AFK_2T | Outdoor Temperature support shield with probe |



Emission Sampling Controls

Integrate real time isokinetic sampler AirCube COM2-Iso

Isokinetic real time sampler in compliance with ISO-9096 EN-13284, EN-16911, EPA 5 and EPA 17 regulations, with a real time flow control of ducts parameters, for fast and accurate isokinetic sampling. Available with 2 cubic meters diaphragm pump, the AirCube COM2-Iso can calculate sampling conditions, traverse points calculations, flow rates and volumes, all in real time, without any manual adjustment. All data are available at display and it can perform the step by step procedure requested from EPA Method 1 and 2 connecting with standard or heated sampling probe.

- **Alli-in-one integrated isokinetic sampler**
- **No external tools needed**
- **Direct flow rate duct readings as per Temperature and Pressures**
- **Authomatic isokinetic conditions readings**

Technical features

The electronic with high resolution backlit plasma display, allow the user to easily set up the parameters and display them in real-time during sampling stages, as per: instantaneous and average flow, volume and temperature of sampling period, instantaneous and average environmental temperature and barometric pressure of the period, partial sample volume and sampling time. Traverse points selection, nozzles selection, PM10 201A sampling condition. Moreover, the device displays on screen the development of the sampling through a time and suction flow based diagram. This option allows the user to check the proper execution of the sampling, validating the data through standard deviation calculation.

The AirCube COM2-Iso is the first sampler capable to work with standard AC power and with battery pack. Low flow capabilities with a patented flow control valve, allow the user to perform a real gas and vapors sampling at very low flow rates without using any adapter.

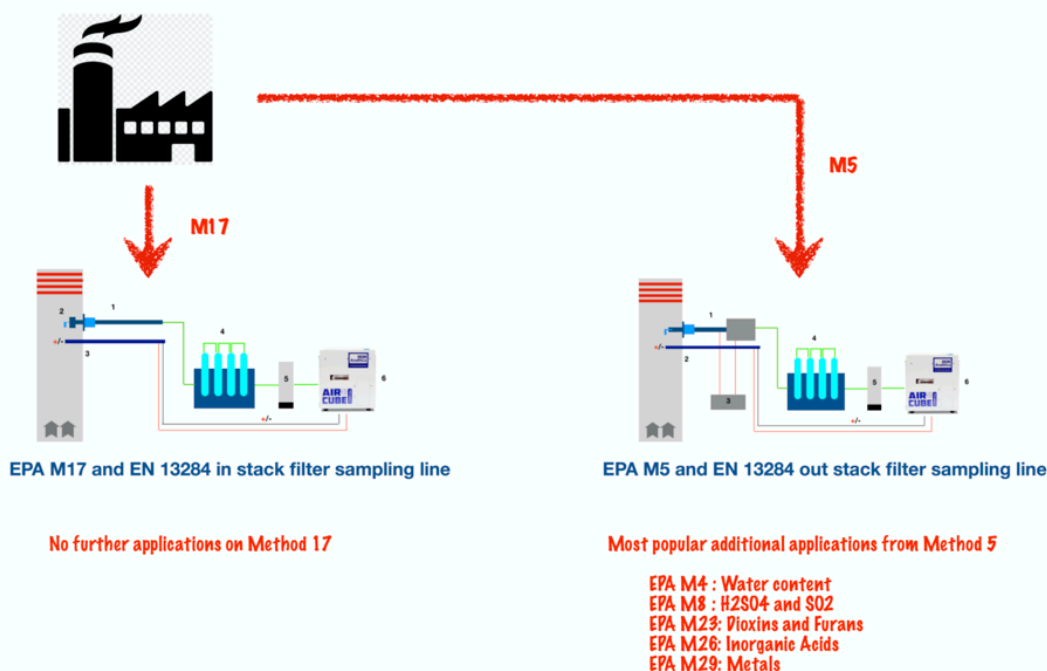
Compact and lightweight, The AirCube COM2-Iso sampler, integrate the sampling performance with an ultimate step by step protocols for traverse points and graphic correct probe positioning.



Comply with EPA Methods 1, 2, 5 and 17 - EN-16911 and ISO 9096

Direct real time control on isokinetic parameters with automatic flow adjustment

Emission sampling protocol based on US EPA application



Ordering informations on real time isokinetic sampler COM2-Iso

| | |
|-----------------|--|
| 600/A30002C-ISO | Air Cube Com2-ISO Automatic Isokinetic Sampler |
|-----------------|--|

Isokinetic sampler technical features

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|---|
| Duct flow rate management in compliance with ISO-CEN 16911 and EPA 2 regulations |
| PM10 and PM2,5 flow rate calculation in compliance with US-EPA 201A and EN-23210 regulations |
| Stack traverse points calculation in compliance with ISO-CEN 16911 and EPA 1 regulations |
| Manual and automatic nozzle set-up calculation |
| Isokinetic real time protocol in compliance with ISO-9096, EN-13284 and EPA regulations |
| Automatic calculation of turbulence effect (SWIRL) with three axis transducer (optional), angle and flow real-time calculation, no manual data input required |
| Automatic calculation of the turbulence effect factor in the proximity of the wall internal surfaces (EPA 2H) |
| Pre set regulation step by step protocols for European and US EPA regulation |
| Setting of the side-stream flow value in the event of derivated sampling |
| Low flow capabilities up to 400 ml minute for gas and vapors sampling applications |
| 2 m ³ single diaphragm aspirating pump with dampener attenuator |
| Aspirating flow range between 0,4 and 30 liters per minute |
| 2 temperature connection for stack and impinger temperature |
| Electronic flow control with a mass flow sensor with 1% of accuracy |
| Volumetric dry gas meter with temperature detection with 0,1°C resolution reading |
| Barometric atmospheric pressure sensor measurement range 500-1100 mbar (RES. 0,05 mbar) |
| Automatic back pressure compensation on setted flow rate |
| Static pressure sensor: - Measurement range (FS): +/- 1000 mm/H2O - Resolution: 0,1 mm/H2O - Precision: - 0.9% on scale (FS) 0..100 mmH2O with reading lower than 010 mmH2O - 0.8% on scale (FS) 0..300 mmH2O with reading lower than 030 mmH2O - 0.8% on scale (FS) 0..700 mmH2O with reading lower than 070 mmH2O |
| Differential pressure sensor: - Measurement range (FS): 0-100 mm/H2O - Resolution: 0,01 mm/H2O - Precision: - 1% on scale (FS) 0..20 mmH2O with reading lower than 010 mmH2O - 0.5% on scale (FS) 0..50 mmH2O with reading lower than 030 mmH2O - 0.3% on scale (FS) 0..100 mmH2O with reading lower than 070 mmH2O |
| Thermocouple input measuring range depending on probe type and instr. setting (K, J, S) |
| Environmental operating range • Temperature -10°C % +50°C • Relative humidity 95% non-condensing |
| Available interfaces RS232C 9600/38400 baud, 1 stop, no parity and USB host |
| Dimensions 26x26x26 cm (WxDxH) - Weight 8 Kg |
| Power 220 V-AC and Battery pack (option) |



AMS Analitica Air Sampling Solutions

