

TCRTECORA®
POLLUTION CHECK

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Skypost X

SEQUENTIAL STATION for PARTICULATE MATTER



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Made in Italy



OUTDOOR
AIR QUALITY

Skypost X & Skypost X DUO

Sequential Station for Particulate Matter



Business Unit



Application



Compliant with
EN 12341:2023

SKYPOST X is the evolution of the established and long manufactured **SKYPOST PM FX**.

SKYPOST X is an automatic outdoor Sampler for particulate monitoring using 47mm diameter filter membrane.

The sequential filter exchange system of the filter membranes with up to 32 filter holders storage capacity, and the electronic flow rate controller, allow continuous, unattended operations up one month, as well as an easy replacement of the exposed filters without sampling stand-by.

SKYPOST X flow range is 10 to 50 L/min and is suitable for dust sampling with LVS PM10 2.3 m³/h sampling head and LVS PM2.5 2.3 m³/h sampling head, according to EN12341:2023. LVS PM1 2.3 m³/h sampling head is also possible.

The new flow control system is composed by a venturi flow sensor as measure device (accuracy better than 2%) and a pump speed control system to regulate the sampling flow. Adopting this new concept the MTBF has been strongly improved. This means very low maintenance especially with 24/7 running time!

The modularity of the sampling head positioning allows to use the USEPA 40, CFR Part 50 sampling head as well.

The completely straight suction tube with its round shape and the separation of the storage filter zone from internal and radiant source of heat, allow to collect and keep the integrity of the pollutants accumulated.



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A special chassis with a wall cavity with air circulation allows the best thermal insulation, ensuring the best heat distribution on all the internal parts of the sampler, strongly reducing the thermal stress on the filters and the internal components.

The well proven sampled filters cooling system is in full compliance with the requirements of the EN 12341:2023 that impose to not overstep the temperature of 23 °C on the sampled filters surface.

New shape, moving of the center of gravity as down as possible, wheels and handles, total weight of 35 kg (up to now the lightest sampler in the market) is the result of a careful design with the primary objective to produce a sampler as light as possible to improve handling during transport and positioning.

To respect the requirements of max load weight allowed during human working activities a "splitted" version is also available. Is finally possible to load/download the sampler by one person only without the risk of physical damages.

Special materials and precautions have been taken to strongly reduce the noise generated by the internal moving parts. Sound pressure level is < 32 dB(A)

RFID TAG in the single 47 mm filter holder is the last state of the art improvement regarding full traceability of all the data before/during/after the sampling procedures. During weight procedure before sampling is stored the weight of the filter. After the sampling SKYPOST X send all the data to the filter holder regarding volume, flow, temperature and all other parameters still related to this single unit. Before to remove all the sampled filters, SKYPOST X write in all filterholders the min, avg and max temperature during storage. Finally, after the weight procedure another data weight is stored. The process enable to avoid any error or forgetfulness during the "route" of the filter, ensuring the 100% of traceability and full respect of quality procedures.



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A high reliability OPC (optical particle counter) for real time monitoring of PM₁₀, PM_{2.5} and PM₁ is available as an option. With this device is possible to monitor in real time the particulate quantity during sampling and to approximately know in advance what will be the result of the particle load in the filter membrane. The analyzer also measure the particles size distribution (24 classes within the range 0,35-40 μ m)

The sampler can acquire also pollution data from sensor monitoring stations like CO, CO₂, NO, NO_x, VOC'S, O₃ and other pollutants measured outdoor.

Complete weather parameters can be measured and stored with the optional TCR TECORA weather station (wind speed, wind direction, relative humidity, ambient pressure, ambient temperature, relative humidity, UV radiation, rain gauge)

Geolocalization is also possible with the optional GPS device. If installed it store the position of the sampler and, in conjunction with RFID tag add the geographical position on every weighed filter.

Main Features

- Fully compliant with EN 12341:2023; EPA 40 CFR 50 appendix L, EPA 40 CFR 50 appendix J;
- Up to 32 filter load and storage;
- Weather proof IP55;
- Sound pressure level < 32 dB(A) operating temperature from -30°C up to 50°C;
- Operating humidity 0:100 % rH;
- Sampled filters temperature control system in order to regulate the temperature below 23°C with external temperature up to 50°C (EN 12341:2023 requirement);
- Sampling probe ventilation system in order to ensure a differential temperature between filter holder and outdoor temperature < 5 °C (EN 12341:2023 requirement);
- Automatic digital flow control with venturi type sensor;
- Volumetric flow rate measured by venturi device with an accuracy <2%;
- Measuring sensors for:
 - Atmospheric pressure;
 - Pressure drop on filter;
 - Ambient temperature;
 - Relative humidity (optional);
 - Outdoor CO₂ (optional);
 - Outdoor pollutants such as NO_x, SO₂, O₃, VOC'S (optional, other on request);
- Ultrasonic wind speed/direction and other meteorological sensors (optional);
- Real time PM₁₀, PM_{2.5}, PM₁ and 24 dimensional classes (optional);
- Data download and control by: USB, Ethernet, RS485, RS232;
- Pump maintenance > 16.000 Hours;
- Filter 47 mm - Free area of sampling 40 mm.



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New Data Management System

- Continuous sampling data storage of all parameters in the internal memory;
- Min., max and average values of all the measured data;
- Alarm management;
- Data download via USB, wifi app, bluetooth
- Data export into TXT format file (imported from excel and other spreadsheet program)
- MODEM for data download and sampler control. For any alarm an email or sms is sent to the end user in order to verify the reason and act accordingly.

Main Applications

- | | |
|--|---|
| ✓ Total Suspended Particulate Matter | ✓ PM ₁₀ and / or PM _{2.5} according to EN 12341:2023 |
| ✓ PM1 | ✓ Benzo[a]pyrene in ambiente air according to EN15549 |
| ✓ Heavy Metals according to EN14902 | ✓ PAH, Dioxin, PCB sampling |

Designed for Field Sampling

Skypost PM FX is a standalone sampler built into a weatherproof cabinet designed to run outdoor in the most hars conditions.

A test made by an ISO17025 certified lab showed its ability to work with external temperature form -30°C to 50°C.

Filter X-Cooler Technology

FilterX - Cooler is the cooling system for sampled filters storage of SKYPOST X, designed according to EN 12341:2023 requirements.

FilterX - Cooler, technology thanks to its smart temperature control gives an optimal protection of sampled filters avoiding their exposition to heat and to water condensation.





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Technical Features

| | |
|---------------|---------------------------------|
| Flow Range | 5-50 l/min |
| Power Supply | 230 Vac (24Vdc Battery Version) |
| Sampling Line | 1 - 999999 min - cycle sampling |
| Weight | 35 KG |
| Dimension | 900 x 520 x 235 mm |

Codes

| Versions | All-in-One | Table |
|--|-----------------|-----------------|
| Skypost X | AA99-014-9960SP | AA99-114-9960SP |
| Skypost X DUO | AA99-014-9961SP | AA99-114-9961SP |
| Filter Magazine (qty 2 - up to 32 filters) | AA99-010-9921SP | AA99-110-9921SP |
| Router for remote control - mobile APP included | AA99-010-9922SP | AA99-110-9922SP |
| Real time PM sensor - OPC 24 class size distribution | AA99-014-1014SP | AA99-114-1014SP |
| Humidity sensor | AA99-014-1018SP | AA99-114-1018SP |
| CO ₂ sensor | AA99-014-1017SP | AA99-114-1017SP |
| Sonic wind speed and direction sensor | AA99-014-1015SP | AA99-114-1015SP |

Skypost Family

All-in-One Version



Rack Version



*Also available in Rack version.

Table Version



Skypost X Skypost X **DUO** ALL IN ONE

Skypost X **DUO** TABLE Skypost X

*Also available in the version single channel





Headquarter

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*Engaged for a
better future!*

