

PM Single Filter Samplers 1PMx





1PMx Single Filter Samplers

Description

To complete the PMx sampling family, Dado lab realized the single filter solution dedicated to the determination of PM10/2.5 in accordance to EN12341:2014.



Main Characteristics

The **1PMx** samplers are the single filter version of our new sequential samplers named Giano and Gemini. The **1PMx** are equipped with a compact version of the Giano/Gemini electronic core unit, developed appositely to be suitable for different applications and, also to be reliable and robust.

Realized in accordance to EN12341:2014, the **1PMx** are equipped with a standard 4.5 m³/h pump for the classic PM10/PM2.5/PM1 sampling with EN-LVS or US EPA heads.

The **1PMx** samplers have no DGM, flowrate is directly managed through an orifice meter, allowing faster flow control and also higher accuracy.

The EN-LVS head, realized in accordance to the EN12341:2014, is supplied with PM10 and PM2.5 nozzles kit included.



The filter is directly placed below the sampling head, avoiding any requirement of filter temperature control.

The filter cartridges are realized in POM and support grids can be easily lifted from the bottom to easily and safely transfer the filter.

For the chemical speciation of the PM composition, Dado lab realized a special version of the filter support grid with PTFE layer.

This solution grants no chemical interaction between support and sample and increase the quality and accuracy of micropollutants determination such as for heavy metals, PAH and PCDD/PCDF.



For those last micropollutants, a PUF cartridge module to be installed right below the filter is available.



Like the Giano and Gemini, also the **1PMx** sampler can be equipped with a wind speed/direction sensor to condition the sampling operation.

Data measured by the wind speed and direction sensors are logged along the sampling data in a comprehensive report.



1PMxV8.5

Thanks to the "dgmless" construction, the **1PMx** can be equipped with a 8.5 m³/h pump.

This pump is generally adopted because of its superior pressure drop compensations at high flowrates in applications such as radio isotopes determination.

Technical Characteristics

General

Operation conditions	-20 ÷ 45°C
Stock conditions	-10 ÷ 50°C 95% RH
Display	3.5" Graphic LCD (QVGA)
Data port	USB 2.0
Internal memory	16GB
Power supply	230 Vac ±10% 50/60Hz
Materials	Steel/Aluminum combined structure
Keyboard	Polycarbonate, tactile effect keys
Dimensions (HxWxD)	47x32x32 cm
Weight	1PMx: 16 kg 1PMxV8.5: 17 kg Support stand: 5 kg
Power consumption	0.65A approx 0.150 kW

Integrated measuring sensors

Flowrate

Type	orifice meter
Range	10 ÷ 60 l/min
Resolution	0.1 l/min
Accuracy	± 1%

Ambient Pressure & Pressure Drop

Range	10 ÷ 105 kPa (1050 mBar)
Hysteresis and Linearity	0.25 % F.S
Resolution	0.01 kPa (0.1 mBar)
Accuracy	Better than 1% (± 0.25kPa)

Temperature

Ambient	PT100
Range	-20 ÷ 100°C
Resolution	0.01°C
Uncertainty	≤ 1°C

Weather sensors

Relative Humidity %

Range	0 ÷ 100 %
Accuracy	± 5 % (range 0% to 60% RH)

Wind Speed

Range	0.5 ÷ 80 m/s
Resolution	0.1 m/s
Accuracy	± 1 m/s

Wind Direction

Resolution	8 sectors on compass rose
Accuracy	± 4°

Models, accessories and spare parts



Instruments

102 103 1001 1PMx - single filter sampler (4.5 m³/h pump)

102 103 1011 1PMx HF - single filter sampler (8.5 m³/h pump)

Standard supply:

- Test and Calibration report
- Administration USB key
- Power cable
- User Manual



Accessories

102 101 2001 EN-LVS Sampling head

EN-LVS PMx Sampling Head (PM10+PM2.5) operating at 2.3 m³/h including both PM10 and PM2.5 accelerating nozzles.

102 101 2010 TSP-LVS samplig head

102 101 4000 47mm Filterholder for EN-LVS PMx Head

102 101 4005 Pack of 2 POM cartridges for EN-LVS head filterholder

102 103 2001 1PMx support stand

102 103 2011 PUF cartridge for EN-LVS Head

102 101 2100 Wind Speed/Direction Sensor Interface

102 101 2101 Wind Speed/Direction Sensor

102 101 2060 GSM Modem for SMS remote control



Consumables

110 105 1003 Pack 100 pcs GF filters binderless ø 47 mm Gr. MGA

110 105 2003 Pack 100 pcs GF filters w/ inorg. binder ø 47 mm Gr. GF6

110 106 2003 Pack 50 pcs QF filters binderless ø 47 mm Gr. QFH

110 106 1013 Pack 25 pcs QF filters binderless - high purity ø 47 mm Gr. MK360



112 101 2015 Pack 5 PUF Cartridges GA 3035 uncleaned 50x60 mm ρ 30 kg/m³

112 101 3015 Pack 5 PUF Cartridges SH100 uncleaned 50x60 mm ρ 20 kg/m³

112 101 2115 Pack 5 PUF Cartridges GA 3035 Cleaned 50x60 mm ρ 30 kg/m³

112 101 3115 Pack 5 PUF Cartridges SH100 Cleaned 50x60 mm ρ 20 kg/m³