

Low-volume sampler to collect PM₁₀ or PM_{2,5} or PM₁ particulate matter

Type: LVS 3.1 / MVS 6.1

These low-volume sampler units are reference devices used to collect particulates from outdoor air in compliance with EN 12341:2014 (PM₁₀ and PM_{2,5})

Simple operation; menu-based control using function keys and jog dial

Large, illuminated graphic display

Operating modes: TIME, PERIOD and QUANTITY

Displays for pressure, temperature, moisture / humidity

RS232C interface

Flow control
(EN 12341:2014 and IDEAL / relative humidity)

Simple software updates thanks to Flash RAM

Automatic recognition of the sampling systems

These low-volume sampler units were engineered for the collection of particulates in outdoor air in 1976/77 and have been continuously refined since that time. A large number and variety of units has been in service for years now. These devices use a vacuum pump to draw the particulate-laden air into a sampling head. The particulates are then sorted by size in an upstream impactor. The particulates are then deposited on filter paper. The air throughput is monitored with a measuring orifice inserted between the filter and the vacuum pump and is regulated to accuracy of better than 2%.

Type LVS 3.1 is classified as a reference unit as per the EN 12341 and EN 14907 European guidelines. The air throughput volume when collecting PM₁₀ or PM_{2,5} fractions amounts to 2.3 m³/h. The device is equipped with a 4 m³ rotary vane vacuum pump. Maximum vacuum at the filter is 300 mbar. When operating at maximum throughput the device, in its functional aspects, is identical with the predecessor model, GS 050/3-N, which is described on Page 7 of VDI Guideline 2463. It also replaces models GS 050/3-C, GS 050/3-G, GS 050-3D, LVS 3 and LVS 3D. Maximum air throughput when using a glass fiber filter is 3.5 m³/h.

Type MVS 6.1 is fitted with a 6 m³ rotary vane vacuum pump and is otherwise identical to the LVS 3.1 version. The unit can be run at maximum throughput of approx. 5.5 m³/h and is thus suited particularly for the measurement of dioxins and other low-volatility organic compounds. It, too, is a reference unit as per European standard EN 12341:2014 and should be used whenever special filter material is to be employed (e.g. cellulose nitrate or teflon filter). The maximum vacuum at the filter is 500 mbar.

Low-volume sampler LVS 3.1

VDI 2463 pages 7 und 8
EN 12341:2014 (Reference device PM_{2,5} / PM₁₀)
VDI 2267 (heavy metal)

VDI 2465 pages 1 und 2
VDI 3498 (Dioxin and Furan)
VDI 3492 (Total dust and Asbestos)

Low-volume sampler MVS 6.1

VDI 3875 (PAK)
VDI 4301 (PCP/Lindan)