

Personal Environmental Monitor

For Measurement of PM10 and PM2.5 in Indoor Air*



- **Lightweight**
 - Will not hamper worker
- **Small and unobtrusive**
 - Can be connected to a personal sampling pump and worn in the breathing zone
- **Referenced in EPA Method IP-10A**
 - For particles in indoor air
- **Suitable for ACGIH thoracic TLVs**
 - Including sulfuric acid and cotton dust as thoracic particulate matter with 10- μ m PEM

Sample Time:	Varies
Sample Rate:	2, 4, or 10 L/min
Sample Pump:	Universal XR, AirChek Series, or Leland Legacy
Sample Media:	37-mm PTFE filters*
Tubing:	3/16-inch ID

The Personal Environmental Monitor (PEM) is a small, lightweight, personal sampling device consisting of a single-stage impactor and an after-filter. Aerosol particles are sampled through the single-stage impactor to remove particles above the 50% cut-point of either 2.5 or 10 μ m in aerodynamic diameter. These large particles are collected on a greased ring and are discarded after sampling. Particles smaller than the 50% cut-point pass through the impactor and are collected on a 37-mm after-filter. To determine personal exposure, the filter may be analyzed gravimetrically for particle mass and chemically for specific chemical compounds. A personal air sampling pump provides the necessary airflow through the PEM. Use the PEM for air pollution studies, indoor air quality assessments, and personal sampling for industrial hygiene applications (not an EPA reference method for ambient air).

* The PEM was developed for indoor air sampling. While it is not an EPA-certified instrument for ambient PM10 and PM2.5 sampling for the National Ambient Air Quality Standard (NAAQS), outdoor use can be effective if there is no excessive wind velocity or rain present at the time of sampling.

The PEM consists of three major parts: cap, impaction ring assembly, and base with after-filter.

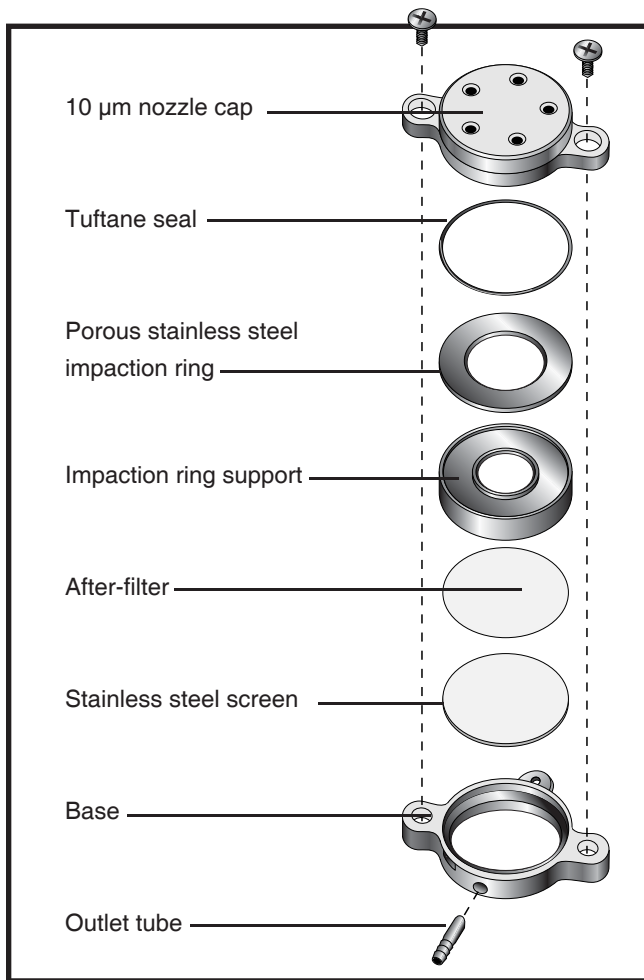
- The cap contains the round nozzles where the air enters the sampler.
- The impaction ring assembly serves as an impaction surface and as a clamping ring for the after-filter.
- The base supports the after-filter.

The PEM operates on the principal of inertial separation of airborne particles using an impactor. Particle-laden air is accelerated into the sampler through the round nozzles located in a circle around the outer edge of the cover. The exiting airstreams impinge upon an impaction ring. Due to inertia, the larger particles cross the airstreams, impact, and are retained on the ring. The smaller particles are carried along the airstreams flowing around the ring and are collected on the after-filter. Oil must be applied to the impaction ring to keep particles from bouncing off this surface. Any type of oil can be used including olive oil, machine oil, vegetable oil, and silicone grease.



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PEM Applications

Use the PEM for air pollution studies, indoor air quality assessments, and personal sampling for industrial hygiene applications (not an EPA reference method for ambient air). The PEM is referenced in EPA Method IP-10A and the SKC IP-10A Method Update[§].

[§] Visit www.skcinc.com.

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Ordering Information

Personal Environmental Monitors for PM2.5 and PM10 Sampling

Cut-point		Flow Rate	Cat. No.
2.5 µm		2 L/min	761-203
		4 L/min	761-203A
		10 L/min	761-203B
10 µm		2 L/min	761-200
		4 L/min	761-200A
		10 L/min	761-200B

Accessories

Description	Cat. No.
Calibration Cap	761-202
After-filter, 37 mm, 2 µm PTFE filter* with PMP support ring [†]	225-1709

* Back pressure on PTFE filters can vary within the same lot.

[†] Maximum operating temperature is 464 F (240 C) based on PMP support ring.



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SKC Gulf Coast 281-859-8050

SKC South 434-352-7149

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