Publication 1367 Rev 1508

Personal Environmental Monitor

Choice of Flows for 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 LEED Green Building sampling**

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 µm 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.

SKC Inc. 724-941-9701 **SKC-West** 714-992-2780 **SKC Gulf Coast** 281-859-8050 **SKC South** 434-352-7149
www.skcinc.com

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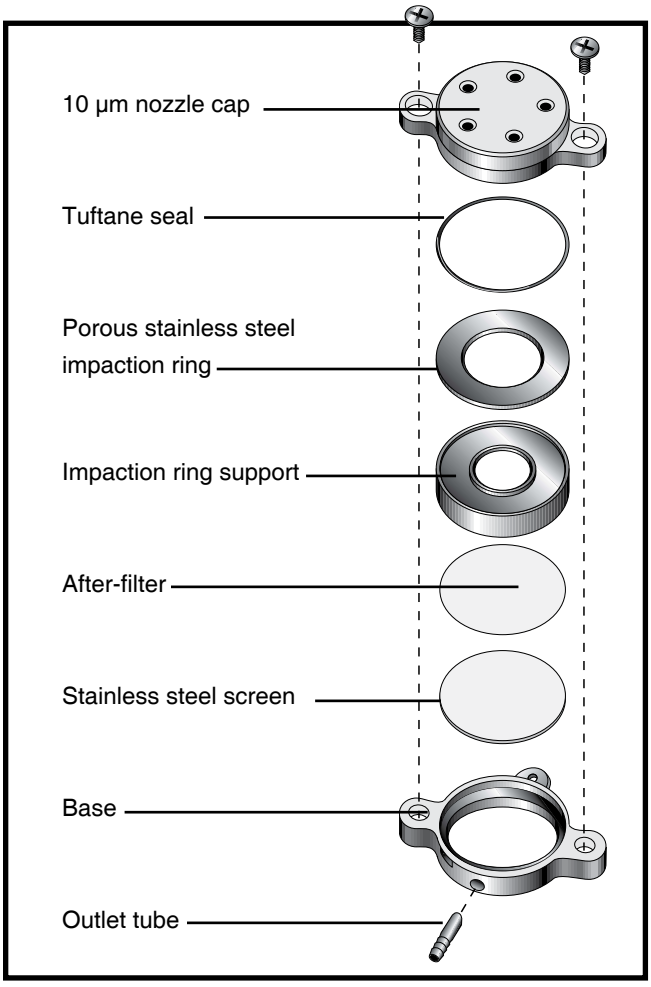

PEM Applications

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

§ *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 Adapter	**761-202**
After-filter, 37 mm, 2 µm PTFE filter* with PMP support ring†, pk/50	**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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