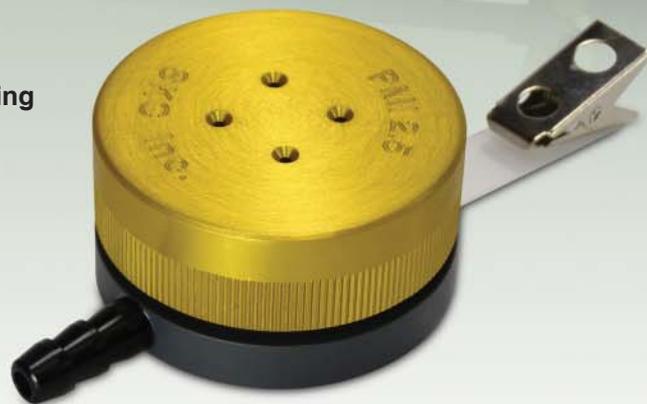


# PMI

## Personal Modular Impactors

Highly Efficient Personal PM10, PM2.5, or PM Coarse Sampling

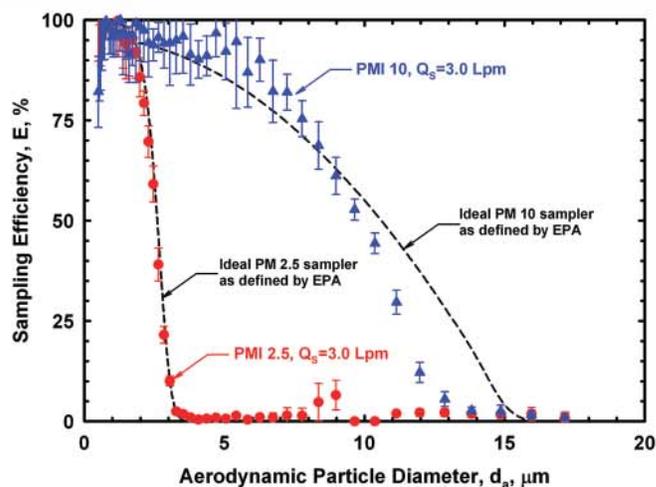
- Closely follows PM2.5 or PM10 as defined by EPA
- Use with any constant flow pump at 3 L/min
- Disposable pre-oiled impaction discs — no cleaning or greasing
  - Reduce particle bounce for high collection efficiency
- Compact and lightweight — only 2.5 ounces (71 grams!)
  - Ideal for personal or micro-environmental sampling
- Convenient modular design for easy operation
  - Removable filter cassette for easy media changes
  - Convenient clip for mounting sampler in the breathing zone
- PMI PM10 model is easily converted with accessory ring to measure PM Coarse



### Description

The patented\* SKC single-stage Personal Modular Impactors (PMIs) are designed for the highly efficient collection of PM10, PM2.5, or PM Coarse<sub>(10-2.5)</sub>. The samplers are easy to use with a removable filter cassette and pre-oiled impaction disc. PMI media changes are as easy as removing the filter cassette and replacing it with one already loaded with a 37-mm final filter. The 25-mm pre-oiled impaction disc mounts directly on top of the filter cassette and reduces particle bounce for high collection efficiency. A 25-mm filter may be used as an alternative impaction substrate for optional gravimetric or chemical analysis of particles. The PMI Coarse model and the Coarse Ring accessory include a second filter cassette to allow collection of particles sized between 2.5  $\mu\text{m}$  and 10  $\mu\text{m}$ .

\* U.S. Patent No. 7,334,453



Collection Efficiency of PMI 2.5 and PMI 10 Samplers



# Personal Modular Impactors (PMIs)

Highly Efficient Personal PM10, PM2.5, or PM Coarse Sampling

## About PMI Coarse<sub>(PM10-2.5)</sub>

When using the PMI Coarse (Figure 2), air is drawn through a PM10 inlet. Particles > 10 µm collect on an oiled impaction disc mounted in the top of the first filter cassette. No filter is loaded inside this cassette. The air proceeds through a PM2.5 impactor (coarse ring). Particles sized between 10 µm and 2.5 µm (10-2.5 µm) collect on a 25-mm filter placed in the impaction substrate position in the top of the second filter cassette. Particles < 2.5 µm collect on the 37-mm final filter inside the second filter cassette. Filters are sent to a laboratory for gravimetric and chemical analyses.

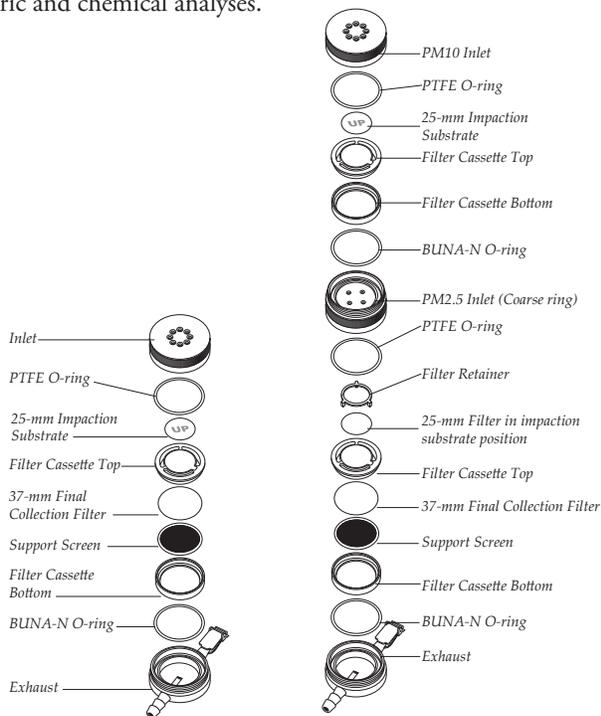


Figure 1. PMI 2.5 exploded

Figure 2. PMI Coarse exploded

## Partner AirChek® XR5000 Pump with PMI

The PMI Samplers may be used with any constant flow sample pump capable of maintaining a constant 3 L/min flow rate. However, partnering a PMI Sampler with an AirChek XR5000 Sample Pump creates a highly efficient sampling system. The compact, lightweight XR5000 pump is ideal for personal sampling.



### References:

Haynes, E.N., et al., "Assessment of personal exposure to manganese in children living near a ferromanganese refinery," *Science of the Total Environment*, Vol. 427-428, 2012, pp. 19-25

Wang, Z., et al., "Evaluation of Real-time Instruments Used to Monitor PM in a Green Building," *American Association for Aerosol Research (AAAR) Annual Conference Abstracts, Session 3AE.3, 2012*

## Performance Profile

<b>Flow Rate:</b>	3 L/min for all models
<b>50% Cut-point:</b>	10 µm or 2.5 µm (model dependent)
<b>Material:</b>	<b>Inlet:</b> Precision-tooled aluminum <b>Exhaust:</b> PVC <b>Filter Cassette:</b> Delrin® with stainless steel support screen <b>O-rings:</b> Inlet - PTFE Exhaust - BUNA-N
<b>Final Collection Filter:</b>	37-mm filter, select based on application
<b>Impaction Substrate:</b>	25-mm pre-oiled, disposable porous plastic disc to reduce particle bounce or 25-mm filter for optional chemical analysis
<b>Analyses:</b>	Gravimetric and chemical
<b>Dimensions (without clip):</b>	<b>Diameter:</b> 2 in (5.1 cm) <b>Height:</b> 1 in (2.6 cm) <b>Weight:</b> 2.5 oz (70.9 gm)
<b>Tubing:</b>	1/4-in ID

## Ordering Information

Description	Cat. No.
<b>Personal Modular Impactor (PMI)</b> includes impactor and filter cassette with support screen, <i>requires impaction substrate and collection media sold separately; see below</i>	
<b>PM2.5 (gold)</b>	<b>225-352</b>
<b>PM10 (silver)</b>	<b>225-350</b>
<b>PM Coarse</b> includes 2 filter cassettes and filter retainer	<b>225-351</b>
<b>Recommended Collection Filters</b>	
<b>Quartz Filters</b> , 37 mm, Tissuquartz™, 432 µm thick, pk/25	<b>225-1822</b>
<b>PTFE Filters</b> ,† 37 mm, 2.0-µm pore size, with PMP support ring, pk/50	<b>225-1709</b>
<b>PTFE Filters</b> ,‡ 37 mm, 1.0-µm pore size, pk/150	<b>225-3705</b>
<b>Recommended Impaction Substrate, required for sampling</b>	
<b>Pre-oiled Porous Plastic Discs</b> ,‡ 25 mm, ready to use, disposable	
pk/25	<b>225-355</b>
pk/50	<b>225-355A</b>
<b>Accessories</b>	
<b>PM Coarse Ring</b> includes filter cassette, adapts a PMI 10 to a PMI Coarse	<b>225-3512</b>
<b>Replacement Filter Cassette</b>	<b>225-356</b>
<b>PMI Cassette Opener</b>	<b>225-357</b>
<b>Forceps</b> , stainless steel, non-serrated flat tips	<b>225-8371</b>
<b>Filter-Keepers</b> , 37 mm, for filter transport	pk/100 <b>225-8303</b> pk/10 <b>225-8303A</b>
<b>PMI Calibration Adapter</b>	<b>225-358</b>
<b>Filter Retainer</b> , secures filter in impaction substrate position on top of cassette	<b>225-354</b>

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

‡ A 25-mm filter may be used as an alternative impaction substrate for optional chemical analysis.

### SKC Limited Warranty and Return Policy

SKC products are subject to the SKC Limited Warranty and Return Policy, which provides SKC's sole liability and the buyer's exclusive remedy. To view the complete SKC Limited Warranty and Return Policy, go to <http://www.skcinc.com/warranty>.

