



New Star
Environmental Inc
"Providing Instrumentation for Air Quality"

Search | Site Map | Home

1 (770) 998 0296



Company Profile

Products

Downloads

Training

Sales Channels

Contact

Products > Particle Sizing Impactors



8 Stage Personal Impactor



Underside of Stages

Marple Series 290 Personal Cascade Impactor

The Marple Series 290 Personal Cascade Impactor is designed to be personally worn by the worker, establishing accurate aerodynamic particle size distributions from 0.52 to 21.3 microns.

A final filter collects all aerosol analytes. The New Star Marple Personal Samplers come in various configurations - 2-stage, 4-stage, 6-stage and 8-stage.

FEATURES

- A multi-jet, multi-stage personal cascade impactor
- Aerodynamic range of 21.3 to 0.52 microns with final filter
- Lightweight design
- Available in two (2) to eight (8) stage configuration
- Cut points: 21.3 microns and above, 14.8, 9.8, 6.0, 3.5, 1.55, 0.93, 0.52 microns and final filter
- A variety of collection substrates and final filters available

OPERATION

Sampled air enters the inlet cowl and accelerates through six radial slots in the first impactor stage. The cowl eliminates ashes and debris from the sampler. Particles larger than the cut-point of the first stage impact on the pre-cut collection substrate. The air flows through the narrower slots in the second impactor stage and smaller particles impact on the second collection substrate. This process continues to the final filter. The width of the radial slots is constant for each stage but smaller for each succeeding stage. The jet velocity is higher for each succeeding stage, and smaller particles eventually acquire sufficient momentum to impact on the collection substrates. After the last impactor stage, remaining fine particles are collected on the built-in 34mm filter.

PROCEDURE

Prior to sampling, collection substrates and the back-up filter are weighed and placed in the impactor. A commercial-type personal air sampler pump with a flow range from 0.5 to 5 liters will accommodate the New Star Marple Personal Cascade Impactors. The typical flow rate is set at 2 lpm (liters per minute). The impactors personal mounting bracket is attached to the lapel or pocket.

After sampling, the substrates and filters are weighed. Weight increase on each substrate is the mass of the particles for that impactor stage. The total weight of particles on all stages and final filter is added and the percent particle mass in each size range is calculated. Respirable particle mass fraction is determined from the particle size distribution.

APPLICATIONS

- Wood dust
- Coal dust
- Silica dust
- Respirable dust sampling

Downloads



marpleSeries290_brochure.pdf

Product ID #:

- view all

Specifications:

Back-Up Filter	34 mm diameter; PVC filter media, 5 micron pore size and glass fiber
Collection Substrates	34 mm diameter, Mylar, stainless steel, glass fiber, and other filter media
Construction	Precision-Machined aluminum
Outlet Fitting	1/8" NPT with 0.25" (6.3 mm) ID tube
Flow Rate	2 liters per minute (lpm) nominal; 1-5 lpm flow range (1-3 lpm recommended)

- Inhalation toxicology
- Indoor air pollution
- Aerosol research