



**New Star
Environmental LLC**

"Providing Instrumentation for Air Quality"

1 (770) 998 0296



[Company Profile](#)

[Products](#)

[Downloads](#)

[Training](#)

[Sales Channels](#)

[Contact](#)

Products > Particle Sizing Impactors > Source

[back](#)



In-Stack Mark III Impactor

The Mark III Impactor measures the size distribution of in-stack particulate emissions in addition to total particulate mass concentration.

The Mark III is an in-stack, multi-stage, multi-jet cascade impactor which adapts to commercially available stack sampling systems containing an "EPA-type" probe. This impactor aerodynamically and automatically classifies particles into multiple size ranges and accounts for all their physical properties including size, shape, and density.

Aerodynamically fractionating particles in the stack is important in determining particle behavior after leaving the stack, area of environmental deposition, probable point of respiratory deposition, type of control equipment needed to collect the particles, collection efficiency of existing control equipment and compliance with state and federal regulations.

The In-Stack Impactor consists of a stainless steel housing with nine jet plates separated by stainless steel spacer rings. Special collection substrates (glass fiber, quartz fiber, aluminum foil, etc.) and a final back-up filter are placed on the jet / collection plates to permit lighter tare weights for gravimetric analysis and a variety of collection materials for chemical analysis.

An optional stainless steel preseparator (either impaction chamber or right-angle) is designed to fit directly into the front end of the impactor and should be used whenever sampling in stacks with particles larger than 10-microns.

The Mark III is designed to operate at 0.75 ACFM or less. An optimum flow rate is approximately 0.5 ACFM. Normal sampling periods vary from a few minutes to several hours in heavy and light grain loading situations respectively. Ten milligrams of particulate matter on any one plate represents an approximate upper limit of collection.

Whenever a sample has been collected, the particle sizing has already been completed. To determine the nature of the size distribution, simply perform the required gravimetric and / or chemical analysis.

FEATURES

- Fractionates and collects stack particles into ten aerodynamic size ranges
- Optional preseparator and standard back-up filter holder collect large (> 10-microns) and small (<0.4-microns) particles respectively
- Stainless steel construction withstands 1500°F (without substrate & filter)
- Flow rates from 0.1 to 0.75 ACFM using six standard nozzle sizes
- Compact size fits through standard 3-inch port opening
- Can be placed in any position for accurate collection and sizing

Product ID #:

- [view all](#)

Specifications:

Cut-Points	>10•m in optional preseparator and <0.4•m on standard backup filter holder
Maximum Stack Temperature	Stainless steel case, plates, holder & spacers permit use up to 1500°F (815°C)
Precision	99.5%
Maximum Stack Concentration	Up to 1 grain/SCF; optional preseparator permits sampling in higher grain loadings
Flow Rate	0.1 to 0.75 ACFM; optimum flow rate is ~ 0.5 ACFM
Dimensions	10" (254mm) maximum length (including nozzle) x 2.8" (71mm) diameter