



® Knowledge Beyond Measure.

# High Flow Impactor (HFI)

Model 131B



## Ideal for sampling particles at low concentrations

The High Flow Impactor (HFI) Model 131B is a precision, six-stage cascade impactor with a flow rate of 100 L/min, design for sampling and classifying aerosol particles by size. Originally developed for airborne sampling on an aircraft, it has a compact, lightweight, and low-pressure-drop design. It also features multiple-nozzle patterns to allow collected particle samples to be subdivided into four equal parts for chemical composition analysis by different analytical techniques (Figure 1).

The HFI impactor has been flown successfully in several research missions, producing valuable, useful data for atmospheric and climate research. The HFI impactors provide the same sharp cut-size characteristics as our popular Micro-Orifice Uniform-Deposit Impactors (MOUDI™).



Figure 1. High Flow Impactor parts

## Applications

- Atmospheric aerosol sampling for size distribution and compositional analyses
- Work place aerosol analysis
- Industrial hygiene studies

## Features and Benefits

- 100-L/min sampling flow rate
- Six impactor stages with nominal cutpoints at 10, 2.5, 1.4, 1.0, 0.44 and 0.25  $\mu\text{m}$ , plus a final filter
- 75-mm diameter impaction substrates
- Impaction plate deposits in four separate quadrants
- 90-mm final filter
- Impactor is made of anodized aluminum for light weight, durability and nozzle dimensional stability
- Low pressure drop
- Sharp cut-off characteristics
- Low inter-stage losses

## Included Accessories

- Pressure drop gauge
- Vacuum tubing
- Substrate mask
- Spare O-rings



## Specifications

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### Optimized for High Sampling Needs

The High-Flow Impactor has six stages operating at a sampling flow rate of 100 L/min for applications where cascade impactors with traditional 30 L/min flow rate will not provide sufficient mass for analysis. The HFI impactor has stages available with cut-point diameters of 0.25, 0.44, 1.0, 1.4, 2.5 and 10  $\mu\text{m}$ .

Deposits are collected in four 90° quadrants on 75-mm substrates. The substrates can be divided into four equal parts for chemical composition analyses by different techniques (Figure 2).

The impactor is made of anodized aluminum to ensure dimensional stability of the nozzles with no oxidation build-up or corrosion and is light in weight.

Multiple nozzles at each stage provide flow conditions that result in sharp-cut size characteristics (Figure 3) and low pressure drop.



Figure 2. Nozzle pattern for Stage 3

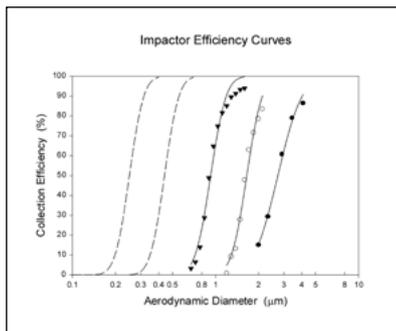


Figure 3. Impactor efficiency curves

### Number of Impactor Stages

6

### Pressure Drop

6.0 kPa (without filter)

### Cut-point Diameters

0.25, 0.44, 1.0, 1.4, 2.5, and 10  $\mu\text{m}$

### Dimensions (D x H)

108 x 280 mm (4.25 in. x 11 in.)

### Weight (total)

2.0 kg (4.4 lb.)

### Vacuum Pump Requirements

115 or 230 VAC, 50-60Hz, 0.42 kW

### To Order

#### HFI Impactor

##### Specify

131B

##### Description

HFI Impactor, 6 Stage

#### Accessories

##### Specify

0130-01-1051

##### Description

Vacuum Pump, 131B, 110V

0130-01-1050

Vacuum Pump, 131B, 220V, EU

0130-01-1052

Vacuum Pump, 131B, 220V, UK

0130-96-0575

Al Foil Substrates, 75 mm, Pkg. 300

0130-01-5010

Glass Fiber Filters, 90 mm, Pkg. 100

0100-01-0100

Silicone Impactor Surface Spray

0100-96-0558

Silicone Lubricating Grease, 5.3 oz.

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