



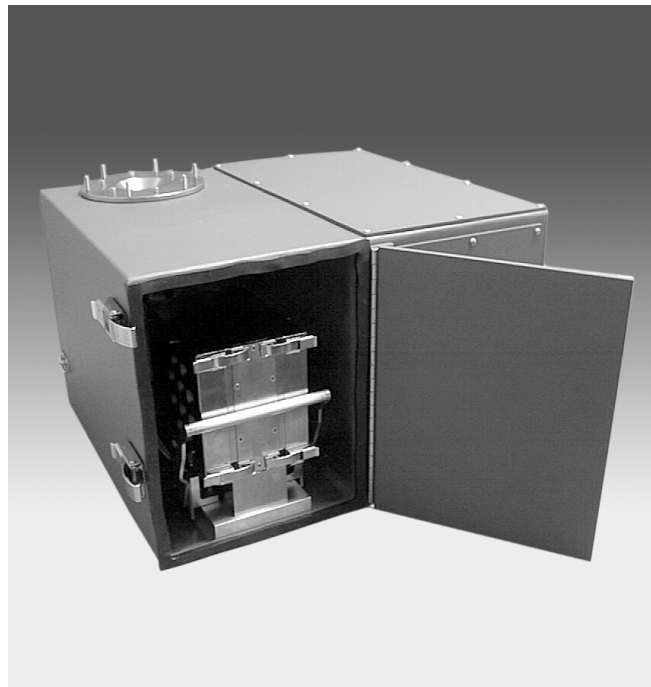
## BIOCONCENTRATOR MODEL 4200

Concentrating Virtual Impactor (CVI)  
Aerosol Sampler for Biological Agent  
Detection

300-L/min sampler that provides a  
concentrated particle stream at a 1-L/min  
flow rate for chemical or biological analysis

The MSP Bioconcentrator Samples Air at  
a High Flow Rate and Retains Particles in  
a Small, Manageable Air Flow

- Increases sensitivity of analysis  
methods by up to 300 times
- Minimizes internal particle losses via  
novel valveless design
- Small physical size; transportable
- Consumes less than 150 watts of power



Model 4200



Concentrating Virtual Impactor

## FEATURES

- 300-L/min sampling flow rate
- 1-L/min output flow rate
- Two-stage concentrating virtual impactor
  - 300-to-1 concentration
  - 2- $\mu\text{m}$  to 10- $\mu\text{m}$  diameter range
- 10- $\mu\text{m}$  cut virtual impactor stage at inlet to remove coarse particles and reduce contamination
- Low internal particle losses
- High efficiency
- Low power consumption
- Valveless

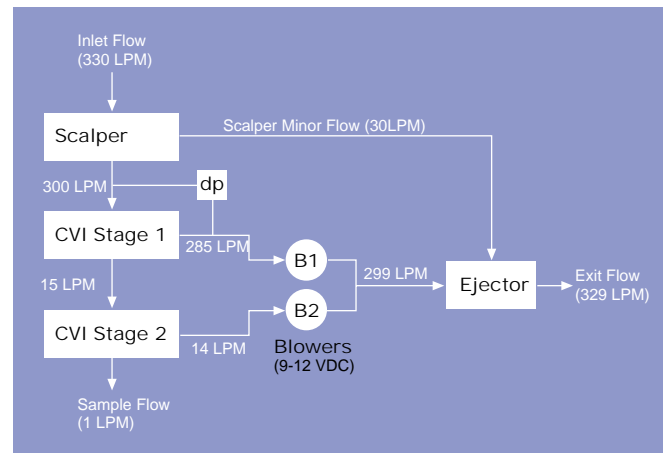
## APPLICATIONS

- Aerosol sampling for biological agent detection
- Front-end air sampling for various detection schemes
- For fixed, mobile, man-portable, and airborne sampling applications
- General purpose biological aerosol sampling for
  - Work-place safety assessment
  - Environmental health studies
  - Indoor/outdoor bioaerosol research

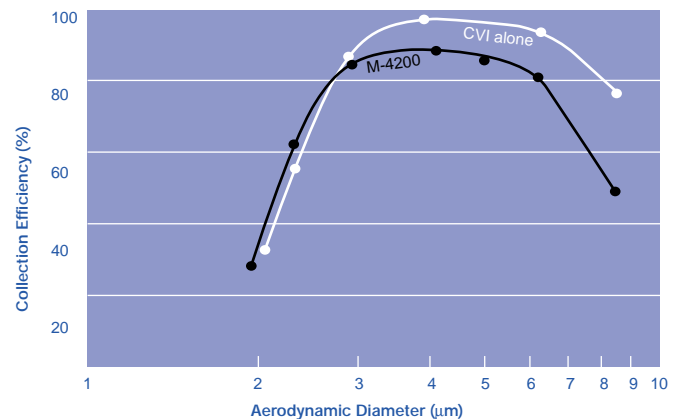
## DESCRIPTION

The Model 4200 Bioconcentrator is a high-performance, precision, particle-concentrating aerosol sampler for biological agent detection. Ambient air is sampled at 330 L/min through an inlet scalper to remove particles larger than 10  $\mu\text{m}$  in aerodynamic equivalent diameter. The large particles are discarded by an ejector along with 30 L/min of the scalper minor air flow. The 300-L/min sampled air flow then passes through a two-stage concentrating virtual impactor (CVI) to concentrate particles in the 2- $\mu\text{m}$  to 10- $\mu\text{m}$  diameter range into a 1-L/min stream for output to an external collector or detector (not provided). Two light-weight, high-performance blowers draw the inlet air flow through the system. The air flow streams are precisely balanced, and no valves are used to control the flow.

## Schematic Flow Diagram



## Typical Sampler Efficiency



## SPECIFICATIONS

Flow rate	300 L/min air flow to CVI; 330 L/min total at inlet
Particle diameter range	2 $\mu\text{m}$ - 10 $\mu\text{m}$
Large-particle scalper cut-point	10 $\mu\text{m}$
Efficiency of particle transmission	98% @ 4 $\mu\text{m}$ (CVI alone); 89% @ 4 $\mu\text{m}$ (M4200)
Dimensions (LxWxH)	14" x 15.5" x 10"
Weight	33 Lb
Power	5A @ 24VDC

U.S. Patent 4,670,135. Additional patent pending.  
Specifications subject to change without notice.



An applied aerosol/particle technology company offering products and solving problems for the semiconductor, pharmaceutical, and air pollution control industries.

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