



AIRBORNE MULTI-IMPACTOR SAMPLER

MODEL 4100

Developed in conjunction with the Office of Naval Research, the Naval Postgraduate School, the Navy's Center for Interdisciplinary Remotely-Piloted Aircraft Studies (CIRPAS) and the California Institute of Technology.

M4100 Airborne Multi-impactor Sampler Designed for Productivity

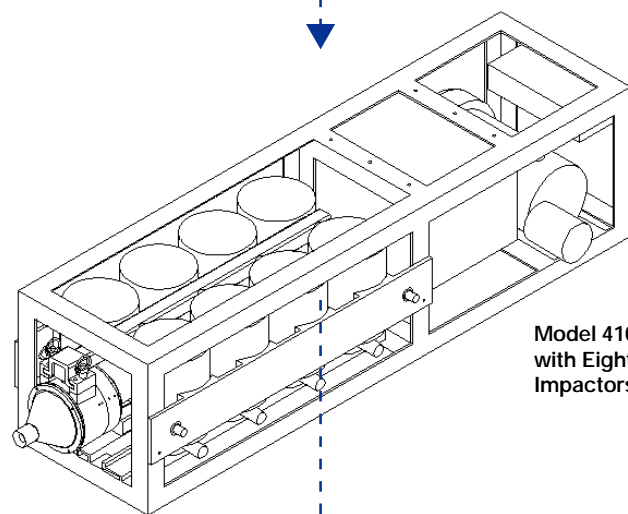
- Fully integrated flyable instrument
- Light-weight mounting pod with sampling inlet
- Large particle/droplet scalper
- Eight cascade impactors
- Provides samples for subsequent chemical analysis
- Variable speed vacuum pump
- Remote operation

Cascade Impactor

- High flow rate (100 L/min)
- Low pressure drop
- Five impaction stages plus final filter



CIRPAS Twin Otter Aircraft



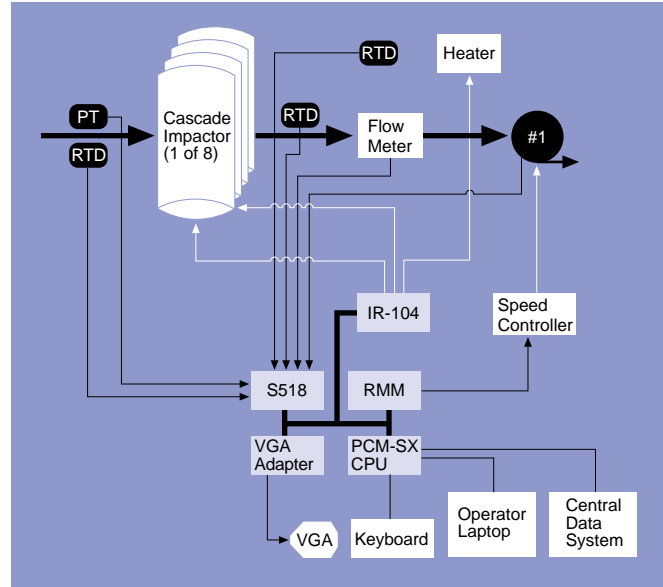
Model 4100
with Eight
Impactors



100-L/min, 5-Stage Impactor

DESCRIPTION

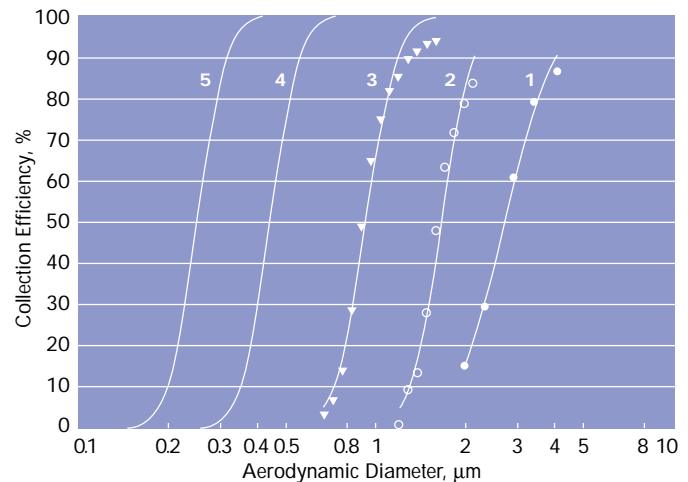
The Model 4100 Airborne Multi-impactor Sampler is designed for acquiring ambient particulate matter during aircraft flight. The Model 4100 instrument pod mounts under the wing of a manned or unmanned aircraft and draws ambient air through one of eight on-board cascade impactors. The impactors sample at a high rate, 100L/min, to collect enough material for subsequent chemical analyses. Because of the eight impactors, samples can be drawn at different altitudes or during repeated passes through a feature of interest, such as a plume. Consequently, unparalleled information on the physical and chemical nature of atmospheric particulate matter is available through the use of the Model 4100 Airborne cascade impactor. An on-board computer with temperature, pressure, and flow sensors controls the sampler operation and provides data acquisition during the flight.



FEATURES

- Operates at altitudes to 20000 ft
- Shrouded sampling inlet provides isokinetic sampling at 50 m/s flying speed
- Virtual impactor scalper removes particles/droplets larger than 10 microns
- Eight cascade impactors
- Five impactor stages – cutpoints of 2.5, 1.4, 0.80, 0.44, and 0.25 microns plus final filter
- 75-mm stage substrates; 90-mm final filter
- 100 L/min sampling flow rate with active flow control using variable speed vacuum pump
- Programmable valve sequence to determine when impactor samples
- PC-104 computer controls instrument operation
- Communicates with operator via RS-422 serial port

Impactor efficiency curves



SPECIFICATIONS

	Impactor (one)	Pod Only	Instrument Insert	Instrument and Pod
Total weight	3 lbs	25 lbs	70 lbs	95 lbs
Size	7"H x 4.3"D	60"L x 16"D	37"L x 10"W x 10"H	60"L x 16"D
Power	350W steady state; 500W peak at pump start; 21-30 VDC			

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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