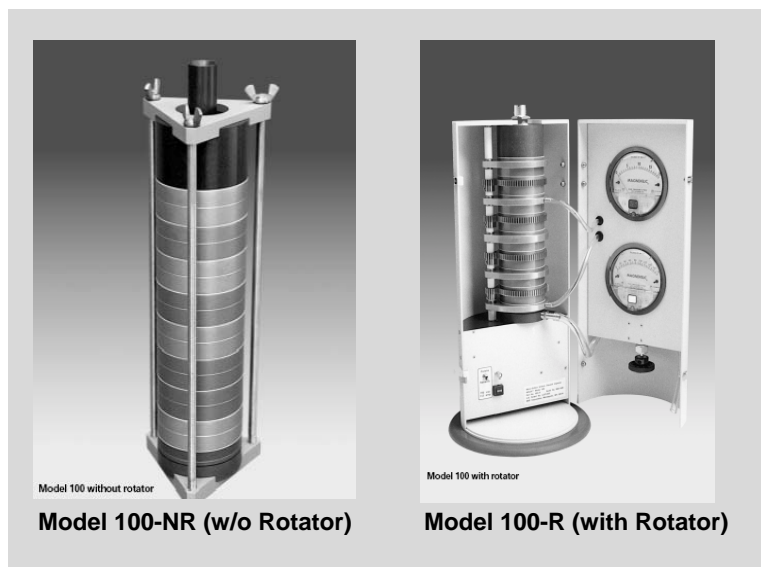




PRODUCT INFORMATION

Models 100, 110, 115 and 116—MOUDI™ Impactors

- Micro-Orifice Uniform Deposition Impactors™ (MOUDI™) for precision, high accuracy aerosol sampling and collecting size-fractionated particle samples for gravimetric and/or chemical analysis
- With 30-L/min sampling flow rate, sharp cut-size characteristics, and up to 2000 precision micro-orifice nozzles to reduce jet velocity, pressure drop, particle bounce and re-entrainment
- Rotating stages to achieve nearly uniform particle deposit on substrate



Model 100 without rotator

Model 100-NR (w/o Rotator)

Model 100 with rotator

Model 100-R (with Rotator)

DESCRIPTION

These precision cascade impactors are designed for sampling and collecting size-fractionated particle samples for gravimetric and/or chemical analyses. The Models 100-R and 110-R Micro-Orifice Uniform Deposit Impactors (MOUDI™) both have a sampling flow rate of 30 L/min and are provided with an 18µm cut-point inlet stage followed by additional stages to size-fractionate aerosol particle samples. The 8-stage Model 100-R has a lower cut-size of 0.18µm while the 10-stage Model 110-R has a lower cut-size of 0.056 µm.

The MOUDI differs from other, conventional cascade impactors in the use of a large number of micro-orifice nozzles to reduce jet velocity and pressure drop, minimize particle bounce and re-entrainment, and enhance collection efficiency. As many as 2,000 nozzles with diameters as small as 50 µm are used. These impactors also have the uniform-deposit feature achieved by rotating the impaction plate relative to the nozzles so that the particle deposit under the nozzles can be spread out uniformly over a 25 mm diameter impaction area on a 37mm or 47mm sampling substrate. The uniform deposit feature prevents heavy particle buildup under the nozzles to minimize bounce and

re-entrainment. The mass of particles that can be collected without overloading can thus be greatly increased. Both the Models 100 and 110 are also available in non-rotating versions, Models 100-NR and 110-NR, with fixed nozzle and collection plates.



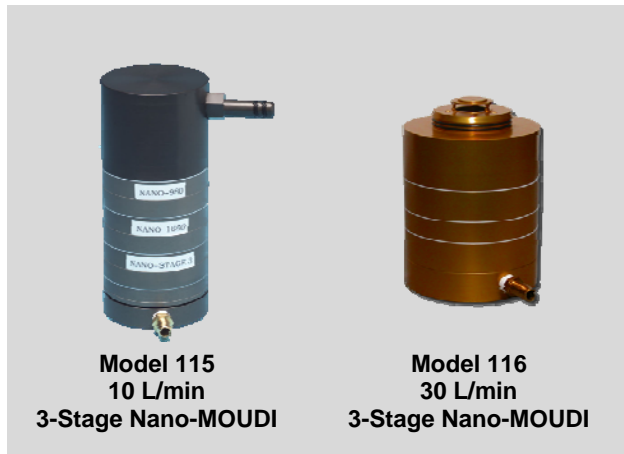
**Model 110-R
10-Stage MOUDI™ Impactor**

The Model 115 and Model 116 Nano-MOUDIs are 3-stage impactors with cut-point diameters of 10, 18 and 32nm (0.010, 0.018 and 0.032 µm). The Model 115 has a sampling flow rate of 10 L/min and must be used with Model 110-R, while the Model 116 has a flow rate of 30 L/min and

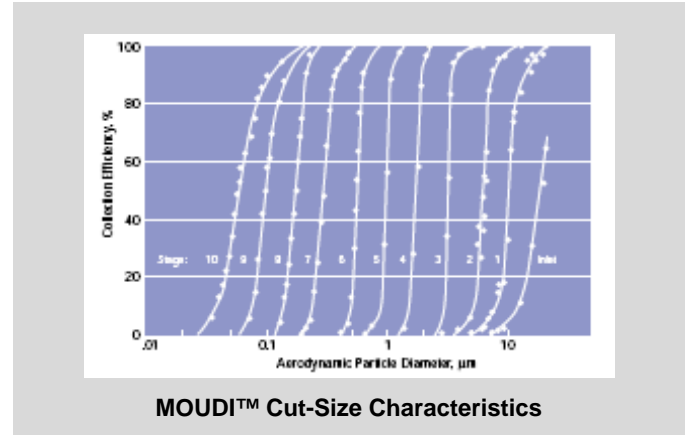
must be used with Model 110-NR. Both Models 115 and 116 are available in the fixed, non-rotating version only.

A new Model 125-R 13-stage MOUDI II with internal stepper motor rotation is available for aerosol sampling from 0.010 to 18 μm . Please refer to the Model 125 brochure for details.

The MOUDI is designed to size fractionate aerosol particles in four equal geometrical size intervals per decade of particle size. The stage cut-sizes would increase at a constant ratio of $101/4 = 1.78$ to 1.0. The nominal cut-sizes of the MOUDI stages are: 0.010, 0.018, 0.032, 0.056, 0.1, 0.18, 0.32, 0.56, 1.0, 3.2, 5.6, 1.8, 10 and 18 μm .

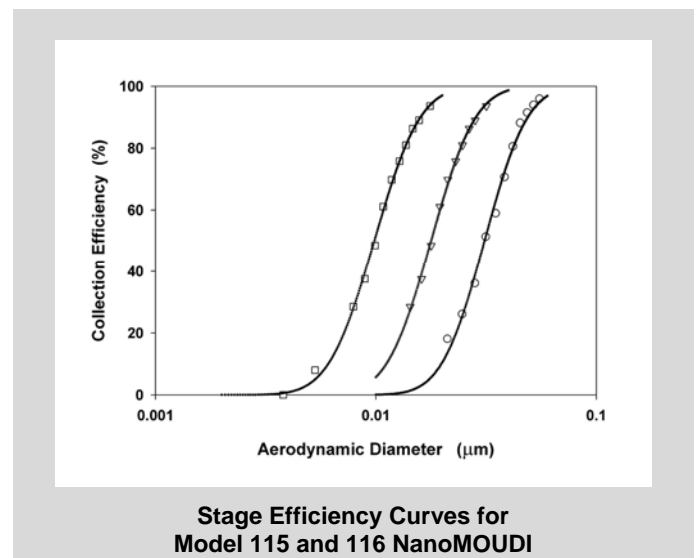
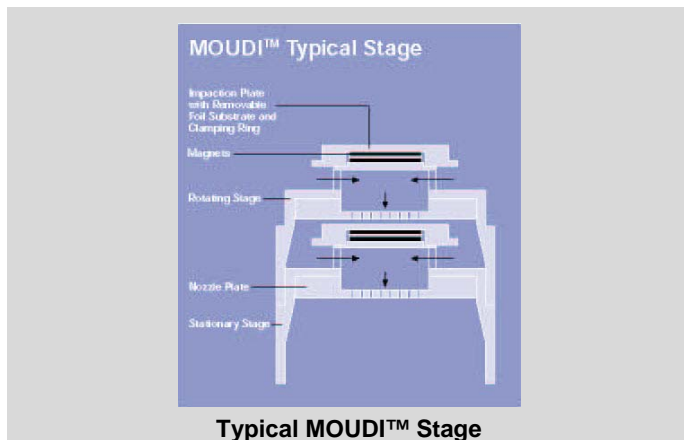


The MOUDI has aerodynamic design features that are not available in conventional cascade impactors. The MOUDI is designed to prevent cross-flow interference between adjacent nozzles. The result is sharp cut-size characteristics not available with other cascade impactors that are less well designed aerodynamically. They are also designed to minimize inter-stage wall losses, i.e. loss of particles on the walls of the impactor, rather than being collected on the collecting substrate. The overall wall loss of the MOUDI for all stages combined is less than 5%.



Because of its superior aerodynamic design and outstanding performance characteristics, the MOUDI is synonymous with high quality research impactors preferred by aerosol researchers worldwide for environmental and laboratory research. They have become the de-facto standard for such applications and have helped to generate hundreds of precise and accurate aerosol size distribution data in air quality and air pollution studies.

Sampling Substrate and Stage Rotation—The MOUDI can accept a variety of sampling substrates, including aluminum foils and 47mm diameter membrane or fibrous filters. The substrate is held by a clamping ring on a substrate holder and is held by a magnet on the impaction stage (see diagram below). The substrate holder is easy to remove and replace. The collected samples can also be stored in a sample holder to prevent contamination during sample transport from the field to the laboratory or vice versa.



FEATURES

- Sampling flow rate
 - Models 100, 110 & 116: 30-L/min
 - Model 115: 10 L/min
- Size interval and stage cut-size
 - four equal geometrical increments per decade of particle size
 - Model 100: 0.18, 0.32, 0.56, 1.0, 1.8, 3.2, 5.6, 10, and 18 μm
 - Model 110: 0.056, 0.1, 0.18, 0.32, 0.56, 1.0, 1.8, 3.2, 5.6, 10, and 18 μm
 - Models 115 and 116: 0.01, 0.018, 0.032 μm
- Sharp cut-point characteristics
- Low inter-stage particle losses
- Up to 2000 micro-orifice nozzles to reduce jet velocity and pressure drop
- Mechanically rotated stages to achieve uniform particle deposits and reduce particle bounce and re-entrainment.

APPLICATIONS

- Production testing of HEPA and ULPA filter testing in the factory
- Environmental air sampling for air pollution and air quality research
- Testing aerosol drug delivery devices
- Diesel blow-by size analysis
- Engine emission testing
- Automotive air bag testing
- Industrial hygiene studies
- Work place aerosol analysis

SPECIAL IMPACTORS

- For environmental air sampling, a special 4-stage MOUDI impactor is available. The Model 100-S4 has an 18 μm inlet, followed by cut-point stages at 1.0, 2.5, and 10 μm ,

and a final filter. This particular combination of MOUDI stages is useful for ambient PM1.0, PM 2.5 and PM10 measurement in special research applications.

- The Model 118 is a 3-stage impactor with cut point diameters of 0.01, 0.018 and 0.032 μm . It fits below the standard Andersen impactor to provide nano size separation and collection capabilities for the Andersen in the nanometer size range



MSP Corporation

5910 Rice Creek Parkway, Suite 300
Shoreview, Minnesota 55126, U. S. A.
Phone: 651.287.8100; Fax: 651.287.8140
Sales@mspcorp.com; www.mspcorp.com

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SPECIFICATIONS

Subject to change without notice

	Model 100-R (with rotator)	Model 100-NR (w/o rotator)	Model 110-R (with rotator)	Model 110-NR (w/o rotator)	Model 115	Model 116
Impactor Stages	8	8	10	10	3	3
Flow rate, L/min	30	30	30	30	10	30
Cut-point diameter, μm	0.18, 0.32, 0.56, 1.0, 1.8, 3.2, 5.6, 10, 18		0.056, 0.10, 0.18, 0.32, 0.56, 1.0, 1.8, 3.2, 5.6, 10, 18		0.032, 0.018, 0.010	
Dimensions (DxH)	220 x 500mm	80 x 360mm	220 x 560mm	80 x 420mm	80 x 190 mm	130 x 180 mm
Weight	11 Kg (24lb)	2 Kg (4.4 lb)	12 Kg (26 lb)	2.3 Kg (5.1 lb)	1.6 kg (3.6 lb)	3.0 kg (6.6 lb)
Power (standard)	115 VAC, 60 Hz, .3 A				115 VAC, 60 Hz, 7A	115 VAC, 60 Hz, 15A
Power (optional)	230 VAC, 50 Hz, .2 A				230 VAC, 50 Hz, 4A	230 VAC, 50 Hz, 8 A
Optional Pump	GAST Model 0823 Series				Leybold Model SV-16	Leybold Model SV-40
Pump Power	115 VAC, 50-60 Hz, 0.56 kW (standard); 230 VAC, 50-60 Hz, 0.56 kW (Optional)				0.75 kW	1.5 kW