



ALTAMIRA INSTRUMENTS

*The First Name in Custom Reactor Systems*

## **AMI-meso Series** **Automated Physisorption Analysis**

Altamira is proud to introduce the **AMI-meso** series of physisorption instruments. After pioneering fully automated chemisorption instrumentation for more than 30 years, the **AMI-meso** series of instruments utilize the static volumetric method to measure isotherms. The **AMI-meso** series was designed specifically to characterize mesoporous materials and can even be adapted with multiple analysis ports for high-throughput testing.



### **The AMI-meso**

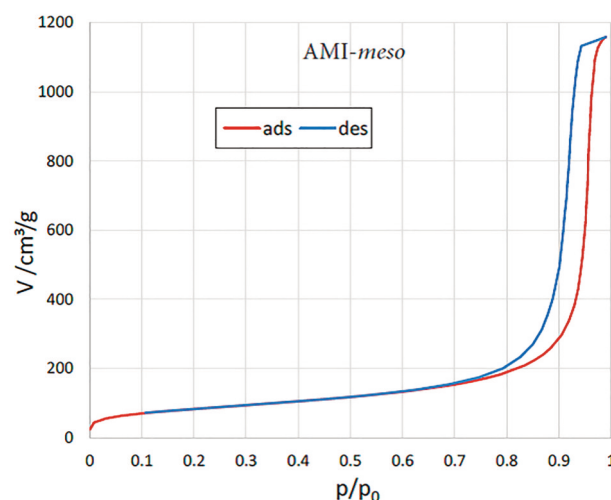
The **AMI-meso** represents a new and highly automated physisorption analyzer. Perform sorption analysis on meso and macro-porous (2-500 nm) materials in either one, two, or four stations. The **AMI-meso** is ideal for quality control, but it can also be used in a wide range of industries from pharmaceuticals to oil & gas; it comes equipped with a dosing manifold and a 1000 mmHg pressure transducer on each station. In addition, each station has a 1000 mmHg  $p_0$  transducer.

### **Hardware and Operation**

The **AMI-meso** can come with one, two, or four sorption analysis stations. Each station has an independent dosing manifold and a 1000 mmHg transducer. Each of the stations also includes an in-situ degassing module to allow for treatment of the sample to 400°C. This in-situ degassing prevents any contamination during possible sample transfer. If multiple stations are selected, each station acts independently from one another.

Thus, the instrument can start experiments on different samples at the same time. Through software control, the **AMI-meso** can automatically:

- Dose adsorbate
- Raise and lower the dewar
- Determine if equilibrium conditions are satisfied
- Plot the real-time physisorption isotherm
- Determine adsorption/desorption kinetics



## Techniques and Reports

The **AMI-meso** can display and interpret data in various methods, including:

- Single or Multi-point BET surface area
- Adsorption and Desorption isotherms
- Langmuir surface area
- External Surface Area (statistical thickness method)
- BJH Pore Size Analysis
- t-Plot
- Average pore size, total pore volume

### Specification Table

	meso 112	meso 222	meso 400
Sorption/Degas Stations	1	2	4
Transducers (per station w/p <sub>0</sub> )	2	2	2
Surface Area	≥ 0.0005 m <sup>2</sup> /g	≥ 0.0005 m <sup>2</sup> /g	≥ 0.0005 m <sup>2</sup> /g
Pore Size	2-500 nm	2-500 nm	2-500 nm
Pore Volume	≥ 0.0001 cm <sup>3</sup> /g	≥ 0.0001 cm <sup>3</sup> /g	≥ 0.0001 cm <sup>3</sup> /g
Pump	Mechanical pump (minimum: 5.0 x 10 <sup>-4</sup> mmHg)		
p/p <sub>0</sub>	10 <sup>-4</sup> - 0.998		
Accuracy-Pressure Transducer	1000 mmHg (+/- 0.20% F.S.)		
Degassing Temperature	400°C		
Adsorbates	N <sub>2</sub> , CO <sub>2</sub> , Ar, Kr, H <sub>2</sub> , O <sub>2</sub> , CO, NH <sub>3</sub> , CH <sub>4</sub>		

## Industries

The **AMI-meso** can serve the following industries:

- Catalyst Research
- Ceramics
- Oil and Gas
- Building Materials
- Pigments, Paints, and Thickeners

