

DNASAA-3000

Dynamic Nitrogen Adsorption
Surface Area Analyzer



EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

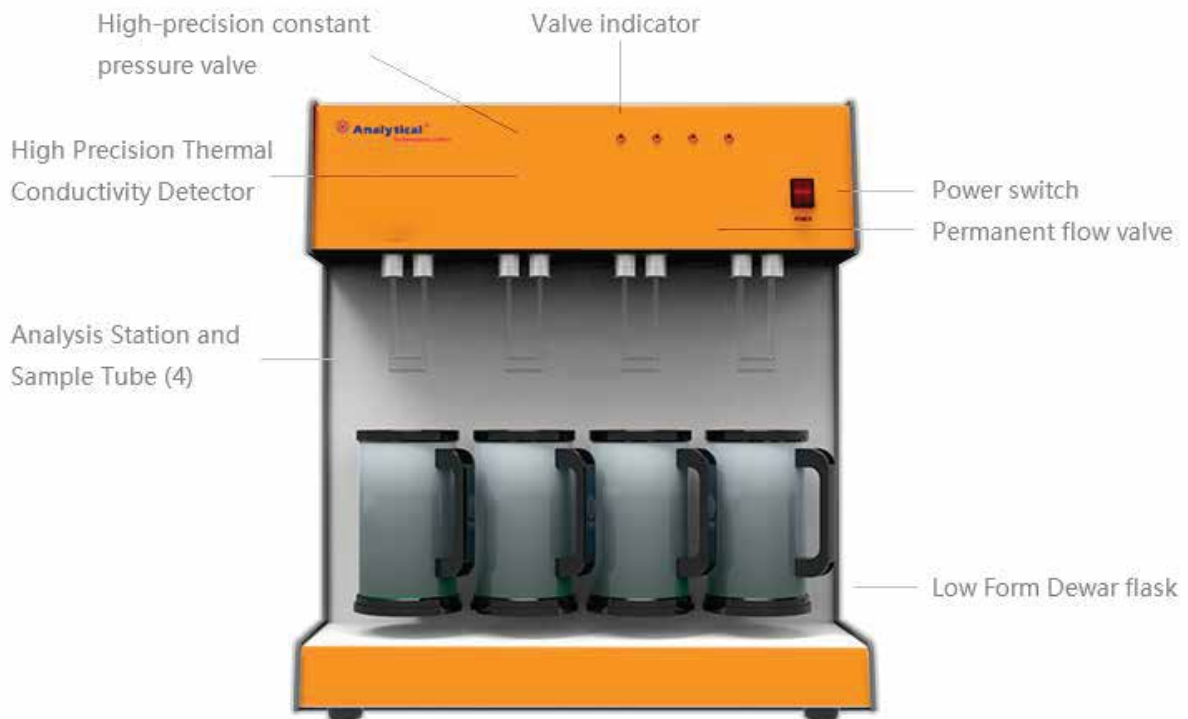
Analytical Technologies Limited

An ISO 9001 Certified Company

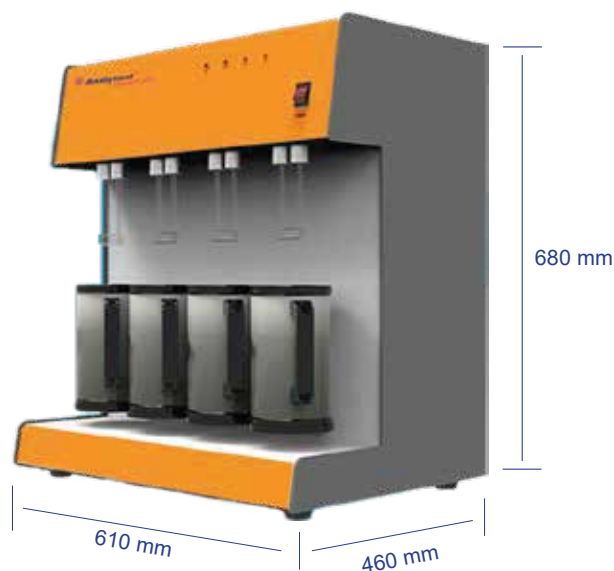
www.analyticalgroup.net

►► Outline

DNASAA-3000 is a fully automated gas sorption analyzer with four parallel operating analysis stations for rapid specific surface area determination. The analyzer operates without a vacuum system but works with the dynamic principle (flow method). Reference measurements can be carried out reliably and in very short times suitable for production and quality control. Use of reference comparison methods keeps the detection time of adsorption peaks extremely short.



Structural distribution diagram



►► Features

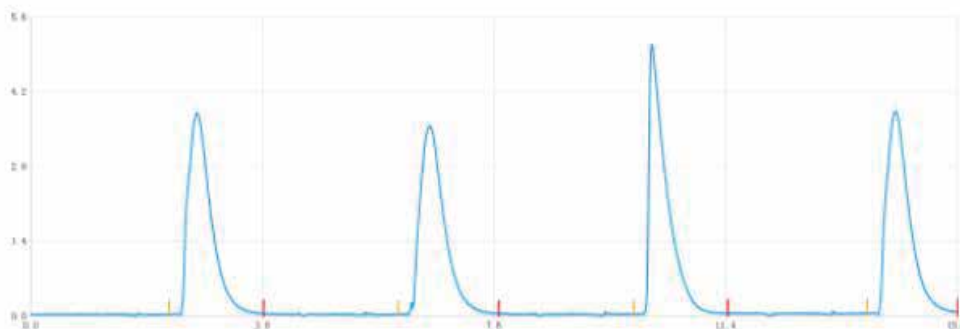
Patent of Invention

Experimental report comes from the detection of adsorption peaks. Using this method could avoid test deviation caused by the incomplete desorption of samples. It's suitable for measurements of low surface area materials, such as ternary materials, positive electrode, and negative electrode.



Adsorption Peak

Adsorption peak looks sharp, no trailing phenomenon, the change of nitrogen concentration caused by each sample adsorption is not diluted at all; the sensitivity of the sample test is greatly improved. The test efficiency is greatly improved under the condition of sufficient adsorption and the comparative test of four samples in one time only needs about 25 minutes.



Nitrogen Partial Pressure Automatic (only for BET Analyzer)

Using a 70ml/min and 30ml/min precision mass flow controllers to automatically adjust the partial pressure of nitrogen in BET surface area test.

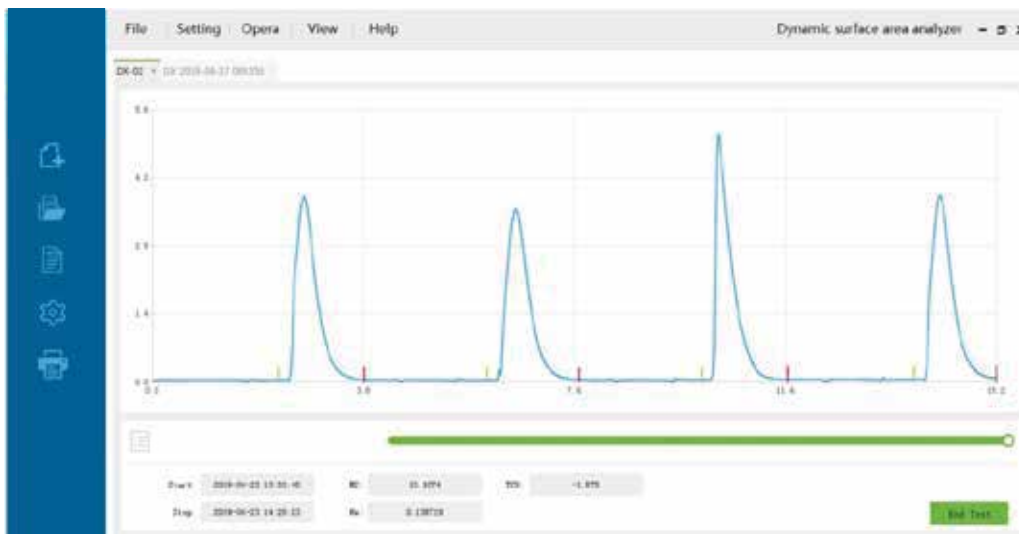
The stability and accuracy of the flow of gas passing through the sample surface could be ensured.

Convenient Operation and User-friendly Design

Operation of DNASAA-3000 Series:

Adsorption process is dynamically displayed on test interface. It's easy to monitor the flow of nitrogen and helium real time which is convenient to learn about whole process.

External sample preparation devices equip miniature vacuum pump and heating furnace; ambient temperature of furnace is in the range of $400 \pm 10^\circ\text{C}$. Transferring sample after degassing from furnace to analyzer, users can start test.



Sample Preparation Device

It's optional. External sample preparation device with four-degas stations can remove adsorbed contaminants from surface and pores of samples with heating in flowing gas/vacuum. Temperature can be set and controlled from ambient to 400°C.

Low Form Dewar flask

Long-life and high volume (1L) Dewar flasks assure a constant thermal profile along the length of sample tubes during experiment.



Anti-pollution Technique

A built-in anti-pollution unit is used to Prevents samples from being blown into the instrument pipeline, ensuring cleanliness of instrument.

Calibration System

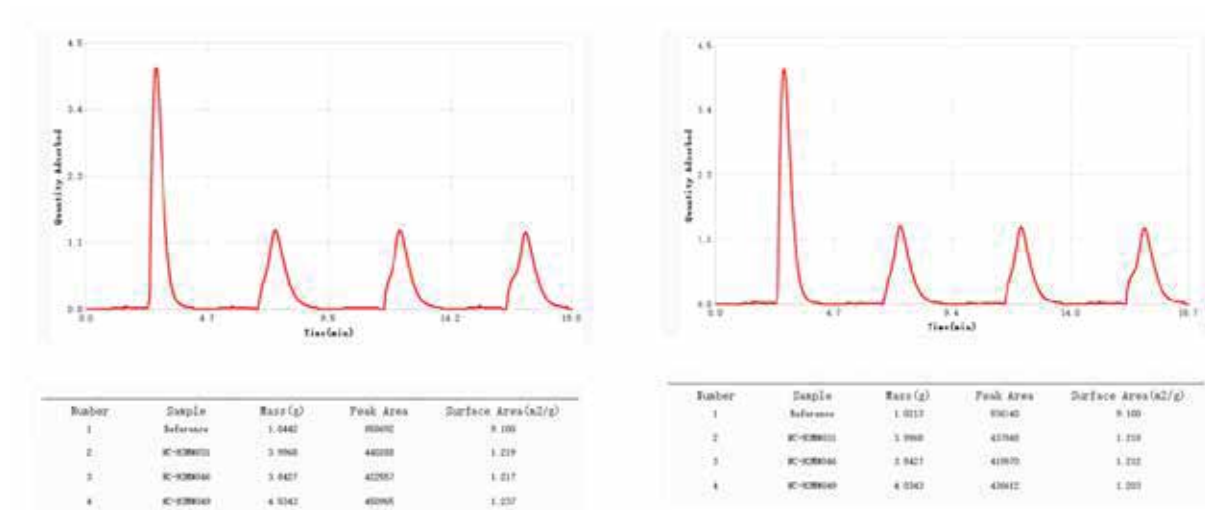
Using electromagnetic valve to automatically control calibration system which is advanced and broken the traditional six-line valve control limitations.

Analysis Station

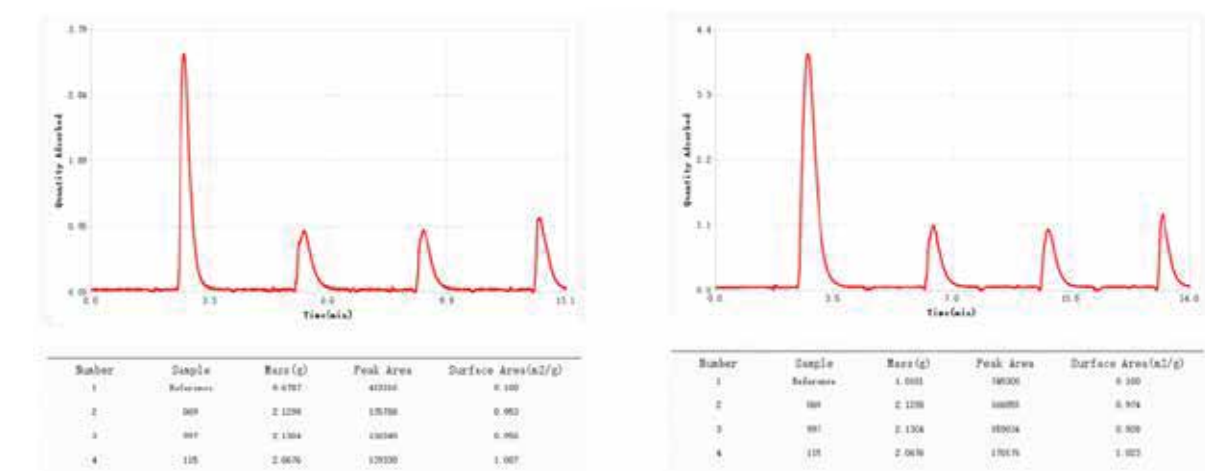
All analysis ports (4) can be controlled individually achieving high efficiency and ensuring the parallelism of test results. The repeatability of test results is better than $\pm 1.0\%$.

►► examples

Test of small specific surface area samples with dynamic method



Specific surface area of electrode materials with dynamic method



►► Specifications

Feature	DNASAA 3000A	DNASAA 3000T
Test principle	Low temperature nitrogen adsorption, dynamic method	
Distinction	Adventurous adsorption technique	Traditional desorption technique
	Recording adsorption data, same as static volumetric method. Separate analysis stations are suitable for testing sample with low surface area (< 10 m ² /g).	Recording desorption data, analysis stations are not mutual independence but parallel. It is not suitable for accurately measure sample with low surface area (less than 10 m ² /g) illustrated by gentle peak.
Test Method	Reference method;	Reference method; Single point BET; Multi-point BET.
Adsorbate and Carrier Gas	High purity nitrogen (99.999%); High purity helium (99.999%).	
Range of P/P ₀	0.3 (Reference method)	
Range of BET Surface Area	0.01 m ² /g to the infinity; (It is not suitable for detecting micropore materials).	
Repeatability	Typically better than ±1.0% (carbon black)	Typically better than ±1.5% (carbon black)
Analysis Stations	4	4
Efficiency	5 min per sample (reference method); 25 min per sample (multi-point BET)	9 min per sample (reference method); 30 min per sample (multi-point BET)
Overall Dimension	Depth: 610 mm; Width: 460 mm; Height: 680 mm; Weight: 48 kg.	
Ambient Temperature	15-40 °C	
Relative Humidity	30%-60%	
Electrical Supply	AC220V±20V, 50-60 Hz, maximum power 300 W;	

►► Applications

Applied Field	Typical Materials	Details
Material Research	ceramic powder, metal powder, nanotube	According to surface area value of nanotube, hydrogen storage capacity can be predicted.
Chemical Engineering	carbon black, amorphous silica, zinc oxide, titanium dioxide	Introduction of carbon black in rubber matrix can improve mechanical properties of rubber products. Surface area of carbon black is one of the important factors affecting the reinforcement performance of rubber products.
New Energy	lithium cobalt, lithium manganate	Increasing surface area of electrode can improve Electrochemical reaction rate and promote iron exchange in negative electrode.
Catalytic Technologies	active alumina oxide, molecular sieve, zeolite	Active surface area and pore structure influence reaction rate.

HPLC Servicing, Validation, Trainings and Preventive Maintenance :

HPLC Servicing :HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.

Trainings :We also take up preventive Maintenance to reduce downtime of HPLC's Trainings.

AMC's/CMC :AMC's/CMC :We offer user training both in-House and at customer sites on HPLC principles, operations, trouble-shooting.

Validations :Validations :We have protocols for carrying out periodic Validations as per GLP/GMP/USFDA norms.

Instruments :Instruments :We offer instruments/Renting Services Modules like pumps,detector etc. on Rent.



About Analytical Technologies

Analytical Technologies is synonymous for offering technologies for doing analysis and is the Fastest Growing Global Brand having presence in at least 96 countries across the global. Analytical Technologies Limited is an ISO:9001 Certified Company engaged in Designing, Manufacturing, Marketing & providing Services for the Analytical, Chromatography, Spectroscopy, Bio Technology, Bio Medical, Clinical Diagnostics, Material Science & General Laboratory Instrumentation. Analytical Technologies, India has across the Country operations with at least 4 Regional Offices, 6 Branch Offices & Service Centers. Distributors & Channel partners worldwide.

Our Products & Technologies



UV/VIS
Spectro 2080+
Double Beam



Infra FTIR



Optima Gas
Chromatograph
3007



Optima Gas
Chromatograph
2979 Plus



Flash
Chromatograph



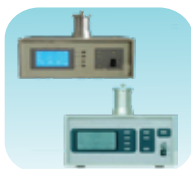
Atomic Absorption
Spectrophotometer



Liquid Partical
Counter



Optical Emission
Spectrophotometer



DSC/TGA



Semi Auto Bio
Chemistry Analyzer



HEMA 2062
Hematology
Analyzer



Micro Plate
Reader/Washer



URINOVA 2800
Urine Analyzer



Total Organic
Carbon 3800



Fully Automated
CLIA



NOVA-2100
Chemistry Analyzer



PCR/Gradient PCR/
RTPCR



TOC
Analyzer



Laser Particle
Size Analyzer



Ion Chromatograph



Water purification
system

Regulatory compliances



Corporate Social Responsibility

Analytical Foundation is a nonprofit organization (NGO) found for the purpose of:



Analytical Foundation

1. Research & Innovation Scientist's awards/QC Professional Award : Quality life is possible by innovation only and the innovation is possible by research only, hence ANALYTICAL FOUNDATION is committed to identify such personalities for their contributions across various field of Science and Technology and awarding them yearly. To participate for award, send us your details of research / testing / publication at Info@analyticalfoundation.org

2. Improving quality of life by offering YOGA Training courses, Work shops/Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds,souls and body by means of yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.

Reach us @



Analytical[®] Technologies Limited

HPLC Solutions MultipleLabs Analytical Bio-Med Analytical Distributors Analytical Foundation (Trust)

Corporate & Regd. Office:
Analytical House, # E67 & E68,
Ravi Park, Vasna Road, Baroda,
Gujarat 390 015. INDIA

T: +91 265 2253620
+91 265 2252839
+91 265 2252370
F: +91 265 2254395

E: info@hplctechnologies.com
info@multiplelabs.com
info@analyticalgroup.net
info@analyticalbiomed.com

W. www.analyticalgroup.net
www.hplctechnologies.com
www.multiplelabs.com
www.ais-india.com

Sales & Support Offices:
across the country :
Distributors & Channel
partners World Wide