



## Surface Area Analyzer

**Model: JW-DA**

### - -Specifications

#### Power

Voltage: 100V~220V  $\pm$  10V

Frequency: 50/60Hz

Maximum power: 300W

Connection: grounding, single-phase power socket

#### Physical properties

Length: 61cm (24.0 inches)

Width: 36cm (14.2 inches)

Height: 69cm (27.2inches)

Weight: 49kg (108.0 lbs)

Accessories weight: 31kg (68.3 lbs)

Installation requirements (L \* W) 100 \* 60cm (not including space computers taking up)

#### Work environment

Temperature: 20 °C -28 °C

Maximum relative humidity: 70%

### - -Technical Parameters

**Test principal:** Continuous Flow Chromatography method, Low temperature nitrogen adsorption

**Test methods:** Direct Comparison method, BET (single-point, multi-point), Langmuir surface area

**Adsorption gas:** N<sub>2</sub> (Adsorbate 99.999%) , He (Carrier 99.999%)

**Flow control:** automatic control program, P / Po 0.05 - 0.35, control accuracy error  $\leq$  0.5%;

**Control efficiency:** 0.01 ml / min, each point of P/Po adjustment  $\leq$  5 seconds

**Calibration:** the quantitative volume of nitrogen used for calibrating automatically

**Measuring range:** Surface area  $\geq$  0.01m<sup>2</sup>/g, no upper limits;

**Sample NO:** 4

**Test Efficiency:** Direct comparison measures specific surface area: 5-8 minutes per sample

BET surface area: 25 minutes per sample

**Repeatability Accuracy:**  $\leq \pm 1$  %



**Data acquisition:** high-precision data acquisition and processing chip, high anti-interference ability.

**Data processing:** WINDOWS-compatible data processing software, completely green without installing, providing multi-mode data analysis, graphical processing interface, real-time monitoring experiment, simple operation.

**Control system:** The entire testing process is completely automatic. With large volume dewar and liquid nitrogen surface control technology, the whole experiment don't need add liquid nitrogen.

## **- Advantages of JW-DA Analyzer**

### **Unique Structural design**

- Unique design, compact, practical, through the software interface, users can readily grasp the operation of the instrument;
- The sample tube quick-disconnect structure, cleverly designed, reliable sealing, using convenient;
- Automatic lifting system, smooth and no noise;
- Insulation covers of dewars reduce nitrogen volatilization, and also effectively prevent the splashing of liquid nitrogen;
- Air system uses the imported flexible connecting PU pipe. It can effectively avoid the drawbacks of rigid connections, easy installation and maintenance, and improve test accuracy;
- The perfect software have been completed, parameter setting easier, flexibility, while the hardware and software tested nearly one year in Japan, and now it achieves the sales standard in Japan, and has begun volume exported to Japan and European markets;

### **Automatic Control**

JW-DA can achieve full automation of the testing process, improve productivity.

- (1) Automatic adjustment of nitrogen partial pressure P/P<sub>0</sub>. Under the conditions of maintaining total flow a constant, the nitrogen and helium flows were adjusted automatically, so that nitrogen partial pressure reach a predetermined value;
- (2) Compared with the stepper motor, the speed of flow is 50 times faster. Adjusting each flow point needs only 5 seconds, and zero drift. The entire testing process is one-third shorter than before, and greatly improves the accuracy and reliability of the instrument.
- (3) Automatic lifting system. First, lift automatically, and the sample adsorbs in the liquid nitrogen. When adsorption achieves the equilibrium, the sample tube will be down, one by one desorption. When all desorption is completed, enter into the next nitrogen partial pressure. And then repeat automatic operation according to the sequence above;
- (4) In each setting of nitrogen partial pressure, before the measured sample desorption, the tube cut quantitative nitrogen automatically as quantitative standard for calculating the amount of nitrogen adsorption. The path has no any blind spots using a unique conversion structure;
- (5) Absorption equilibrium conditions are determined automatically; Zero of thermal conductivity detector calibrating itself;

### **Intelligent Software: data acquisition and processing**

- On Window platforms, providing program control of automated testing process, continuous rapid data acquisition, orderly and efficient data processing, editing, computing, mapping, storage, and gives the final results and full test reports;
- Various theoretical models and data analysis methods, the maximum expansion of instrument capabilities meet the requirements of different users;



**Beijing JWGB Sci. & Tech. Co., Ltd.**

Room 2206, A Block, No.23, South Binhe Road, Guang'an Men, Beijing, 100055, China.  
 Tel: 86-10-68949817; Fax: 86-10-63326024

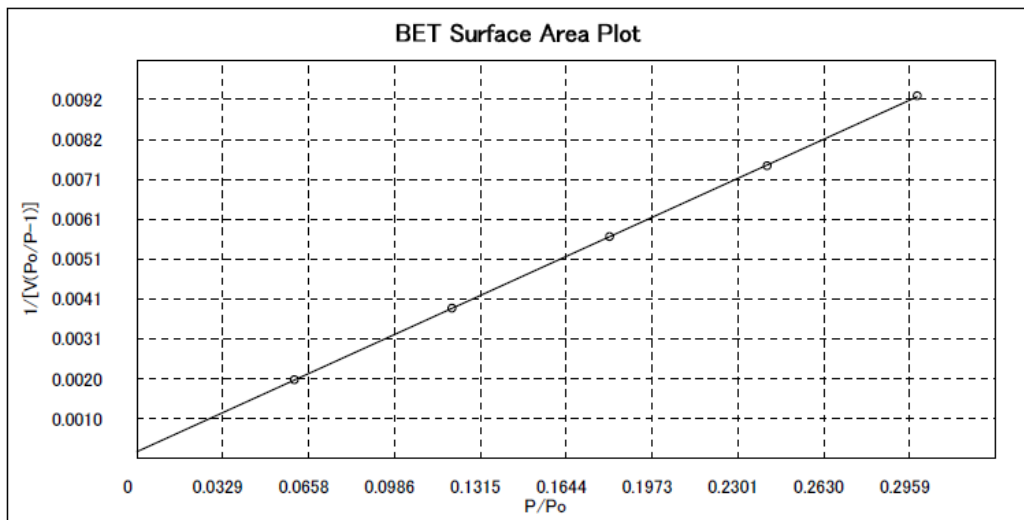
- Powerful data archiving, retention, query system, a user-friendly data management, export data systems. If necessary, users can easily query the original data and calculation process;
- On the computer screen, it real-time displays the measured sample in adsorption or desorption process, showing all experiment; end of the experiment, you can access to single-point curve, multi-point curve, linear of multi-point surface area and test results of each sample.

**The new software will be upgraded free for customers.**

**Optimal test conditions**

- High sensitivity thermal conductivity detector as well as the constant current circuit guarantees the accuracy;
- Experiment automation, the consistency of experimental conditions, excludes the influence of human factors, so that the repeatability and linearity of test results is further improved greatly;
- Multi-level voltage steady flow system, and import high-quality mass flow sensor, achieves precise and rapid flow regulation. The accuracy of nitrogen partial pressure is up to  $\pm 0.2\%$ ;
- Optional JW-Vacuum Pretreatment Machine, control processing temperature ( $\pm 1^\circ\text{C}$ ) precisely, greatly improving standards of testing.
- Test accuracy and repeatability of the analyzer is checked, and Inspection Certificate issued by the China Institute of Metrology.

**- -Test Reports**



Slope	Intercept	Vm	C	Cc
0.03035	0.00018	32.75579	173.10872	0.99998

Specific Surface Area (m <sup>2</sup> /g)	142.81525
---	-----------