MicrotracBEL

NIKKISO Group

Specific Surface Area/
Pore Size Distribution Measurement Instrument

BELSORP®-miniX

Specific surface area: 0.01 m^2/g or more

Pore size distribution: 0.7 to 400 nm
(Optional: 0.35 to 400 nm)

BEL
MicrotracBEL Corp.

X's Outstanding Excellence

Features

Measures up to 4 specimens simultaneously with the highest level of precision and reproducibility in the world and a drastic reduction in measurement time

High precision measurement at 1.5x throughput

Simultaneous measurement of up to 4 specimens
and high precision simultaneous measurement of 3 specimens.

Measurement time is significantly shortened

The dedicated exhaust valve and improved software greatly reduces measurement time.

Equipped with GDO* functionality NEW

Speedy measurement with optimum amount of gas dosing based
on adsorption isotherm data from previous sample measurement.
*Gas Dosing Optimization

Automatically measures adsorption isotherms according to minimum condition settings

Capable of measuring adsorption isotherms of the first sample
with minimum condition settings.

Equipped with AFSM™ for increased measurement precision and reproducibility (Domestic patent: #3756919 / US Patent: 6,595,036)

The adoption of Advanced Free Space Measurement (AFSM™) has resulted
in improved measurement accuracy and reproducibility.

Adsorption isotherm measurement of various gases over a wide range of temperatures

The gas selector and various temperature devices allow adsorption isotherm
measurement of various gases over a wide temperature range.

Progress of measurement can be monitored on software. NEW

The progress status of a measurement can be checked at a glance,
improving working efficiency of measurers.

Improved operability

The slide and latch mechanism allows easy attachment/detachment
of temperature devices such as Dewar vessels.

Improved maintainability

Improved maintenance software enables monitoring of the performance of each part.

Smallest, most lightweight implementation in the world NEW

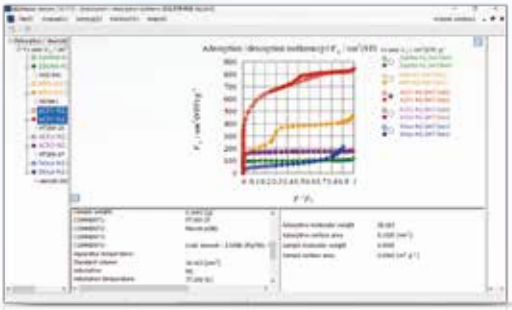
The selection of optimum materials has resulted in the world's smallest
and most lightweight instrument.

Conforming to JIS Z8830, Z8831-2, K6217-7 and ISO 9277, 15901-2, 18852.

NEW = New function of BELSORP-miniX

Operation Software

Analysis Software (BELMaster™7)



- VAdsorption-desorption isotherm
- BET specific surface area Type I (ISO9277) BET auto analysis
- Langmuir specific surface area
- BJH, DH, CI, INNES methods
- t-plot method
- NLDFT/GCMC (optional software BELSim™), etc.
- MP method
- Dubinin-Astakhov method
- Differential adsorption isotherm
- Molecular probe method
- αs-plot method

Applications

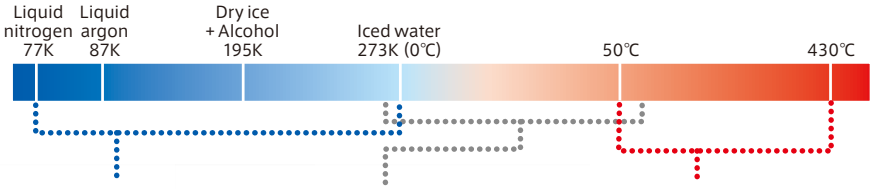
The instrument can be used in a wide range of areas including catalysts, fuel cells, batteries, fibers, polymer materials, medicine, pigments, cosmetics, magnetic powder, separation membranes, filters, toner, cement, ceramics and semiconductor materials.

Catalyst | Battery | Carbon | Medicine | Cosmetics | Cement | Toner | Pigments | Ceramic | Electronics

Options and Consumables

In addition to the Dewar vessel provided as standard, various options are available for different measurement temperature ranges. The gas selector and temperature controller can be installed with the instrument in a small space.

●Measurement temperature range



Dewar vessel (standard) | Circulation water tank (option) | Electric furnace (option)

●Consumables, sample tubes

●Gas selector (left) and temperature controller (right)

Example of combination with the instrument

Pretreatment Instruments

	BELPREP-flowⅡ	BELPREP-vacⅡ	BELPREP-vacⅢ
			
Flow heating process	✓	Option	Option
Vacuum heating process	–	✓	✓
Number of specimens	3		6
Programmed temperature control	✓	✓	✓
Auto purge stop function	–	✓	–
Exhaust speed auto switching function (For sample scatter prevention)	–	✓	–
Dimensions, weight (main unit)	321 (W) × 158 (H) × 363 (D) mm 11 kg	321 (W) × 158 (H) × 363 (D) mm 15 kg	400 (W) × 317 (H) × 383 (D) mm 15 kg
Utility Gas	N_2 0.1MPa Joint: 1/8" Swagelok		
Power	AC100V/400W	AC100V/1000W (including R.P.)	AC100V/1100W (including R.P.)

Specifications

Measurement method		Volumetric gas adsorption + AFSM™
Adsorption gas		N_2, Ar, CO_2, H_2, CH_4, butane, and other non-corrosive gas
Free space		Continuous free space measurement (AFSM™) method. (Free space for each isotherm measured at each measurement point and reflected in adsorption amount calculation.)
Pressure gauge		Number of units: 6 units in total (Measurement range: 0 to 133.3 kPa) Saturation vapor pressure: Measured with dedicated port and pressure gauge at all times.
Sample tube		Standard: Approx. 1.8 cm^3 volume Option: 1.8 to 5 cm^3 volume
Dimensions, weight		280 (W) × 650 (H) × 465 (D) mm 38 kg (Excluding vacuum pump and computer.)
Utility	Gas	He、N_2 (99.999% or higher purity) 0.1 ± 0.02 MPa, Joint: 1/8" Swagelok
	Exhaust	Rotary pump exhaust port, Φ 11 mm
	Power	Single phase, 100-240 VAC (50-60 Hz) / 750 W (Including R.P.)

*AFSM, BELMaster, and BELSim are trademarks of MicrotracBEL.

※Specifications and appearance of the products listed are subject to change without notice.
※Products (goods and services) described in the catalog, depending on the destination and application, might be applicable to export regulations, etc. by the "Foreign Exchange and Foreign Trade Control Law".
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● Distributor

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