

Standard-Level Semi-Micro Balances

BM-S

Series



0.01 mg Precision, Within Reach

A&D
A&D Company, Ltd.

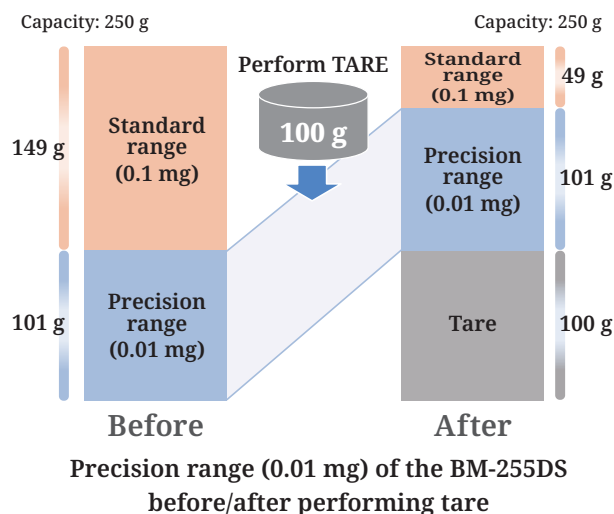
Discover Precision
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Semi-Micro Weighing, Focused on the Essentials

Designed for R&D and quality control labs that need 0.01 mg weighing as part of their daily routine, the BM-S series combines a generous precision range with the core functions you need to keep results accurate, properly recorded, and easy to manage. Its straightforward operation lets anyone in the lab use it with confidence.

0.01 mg for up to 101 g, with the smart range function

The BM-255DS offers a readability of 0.01 mg for up to 101 g, allowing large samples to be weighed with semi-micro precision. As both models feature the smart range function, the net weight can always be measured with a readability of 0.01 mg across the full precision range (101 g for the BM-255DS, 51 g for the BM-125DS), even when a heavy container has been tared.



Two breeze break rings for stable weighing

The high-profile breeze break ring better shields the weighing pan from drafts and convection flows for stable 0.01 mg weighing. When weighing paper or other items may touch the taller ring, simply switch to the standard ring.



High-profile breeze break ring

Breeze break ring

Built-in internal weight

The motor-driven internal weight keeps the balance accurate with minimal effort. In addition to one-touch sensitivity adjustment, the “AD-Just” feature can automatically adjust sensitivity in response to changes in ambient temperature.

Any change in the internal weight value over time can be corrected using sensitivity adjustment with an external weight as the reference. The repeatability test, which weighs the internal weight 10 times and displays the standard deviation, helps you check whether the installation environment is suitable for precise weighing.*

* The internal weight (approx. 200 g) differs from the test weights designated for the repeatability specifications, so the results should be used for reference only.

Precise counting of very small parts

The counting mode lets you quickly and precisely count tiny parts that are hard to handle and count manually. With a readability of 0.01 mg, even parts with a unit mass as small as 0.1 mg can be counted, and the Automatic Counting Accuracy Improvement (ACAI) function recalculates the average piece weight as pieces are added to reduce counting errors.

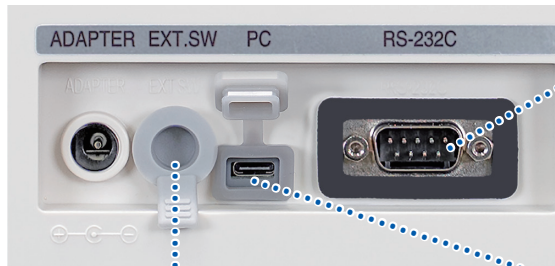
Gravimetric pipette testing

With the separately sold BM-014 pipette accuracy testing kit, you can test pipette accuracy (systematic error) and precision (random error) in-house by the gravimetric method in accordance with ISO 8655. The supplied software converts mass into volume automatically, and the evaporation trap and display hold function minimize evaporation errors.



BM-014 pipette accuracy testing kit
(Balance shown is a different model.)

Communication interfaces



External key input (jack socket)

A separately sold foot switch can be connected to perform the RE-ZERO or PRINT operation.

RS-232C (D-Sub 9-pin)

Bi-directional communication with a printer, PC, PLC, or other external device.

USB (Type-C)

Using internal settings, you can toggle between Quick USB, which sends weighing data directly to PC applications such as Microsoft Excel as if using keyboard input, and Virtual COM for bi-directional communication. A 2 m USB cable is supplied as standard.

Other key features

- ✓ **Anti-static breeze break** – Transparent metal-coated glass panes block external static electricity for stable readings
- ✓ **Adjustable response characteristics** – Choose FAST, MID, or SLOW to suit drafts and vibrations at the location
- ✓ **Password lock** – Allows the administrator to set passwords and individual user rights for up to 10 users, preventing unauthorized operation and changes
- ✓ **Key lock** – Restricts operation to commands from a PC, useful for building systems that prevent data falsification (e.g., for 21 CFR Part 11 compliance)
- ✓ **GLP/GMP/GCP/ISO compliant output** – Provides documentation for regulated environments and quality control, including a 13-character ID number
- ✓ **Data memory** – Stores up to 200 weighing results and 50 sensitivity adjustment/calibration test results with timestamps, so you can record data without a PC or printer at hand
- ✓ **Gross/Net/Tare output** – Outputs the gross and/or tare weight values together with the net weight value for complete weighing records
- ✓ **Universal Flex Coms (UFC)** – Creates custom printouts and barcode labels, which can be easily designed on a PC using the free WinCT-UFC software
- ✓ **Density measurement** – Calculates the density of solids and liquids automatically (use of the separately sold AD-1653 density determination kit is recommended)
- ✓ **Underhook** – Allows suspended weighing beneath the balance, such as for magnetic materials
- ✓ **Reverse backlit LCD** – Provides excellent visibility even in poorly lit areas (main character height: 17.8 mm)
- ✓ **Auto power ON/OFF** – Enters weighing mode automatically when power is supplied (e.g., after a power interruption), and turns off the display when idle to save power

Specifications

Models	BM-255DS	BM-125DS
Capacity	101 g / 250 g ^{*i}	51 g / 120 g ^{*i}
Readability	0.01 mg / 0.1 mg ^{*i}	
Repeatability (standard deviation) ^{*ii}	0.02 mg (for 50 g) 0.03 mg (for 100 g) 0.1 mg (for 250 g)	0.03 mg (for 50 g) 0.1 mg (for 120 g)
Minimum weight ^{*iii} (typical)	20 mg	24 mg
Linearity	±0.2 mg	
Stabilization time (typical when set to FAST)	Approx. 8 s / 3.5 s	
Sensitivity drift	±2 ppm/°C (10 to 30 °C/50 to 86 °F, when automatic self-sensitivity adjustment is OFF)	
Operating environment	5 to 40 °C (41 to 104 °F), 85%RH or less (no condensation)	
Display refresh rate	5 times/s or 10 times/s	
Units of measure ^{*iv}	mg (milligram), g (gram), oz (ounce), ozt (troy ounce), ct (metric carat), mom (momme), dwt (pennyweight), gr (grain), pcs (counting mode), % (percent mode), and DS (density mode)	
Counting mode	Minimum unit mass	0.1 mg
	Number of samples	5, 10, 25, 50 or 100 pieces
Percent mode	Minimum 100% reference mass	10.0 mg
	% readability	0.01%, 0.1%, 1% (depends on the reference mass stored)
Communication interface	RS-232C (D-Sub 9-pin), USB (Type-C), External key input	
Applicable weights for calibration test/sensitivity adjustment	200 g, 100 g, 50 g, 20 g, 10 g	100 g, 50 g, 20 g, 10 g
Weighing pan size	Ø90 mm	
External dimensions	259 (W) × 466 (D) × 326 (H) mm	
Net weight	Approx. 10 kg	
Power supply / consumption	AC adapter / approx. 30 VA	
Standard accessories	Breeze break ring × 1, High-profile breeze break ring × 1, USB cable (2 m) × 1	

^{*i} Smart range function: Automatically switches between the precision and standard ranges.
The full precision range becomes available again after a re-zero or tare operation.

^{*ii} Repeatability can worsen depending on the environmental conditions and operator skill.

^{*iii} Pursuant to the United States Pharmacopeia (USP), Chapter 41

^{*iv} Either tael (Singapore/HK jewelry/Taiwan/China) or tola can be added upon request.

Options

BM-014 Pipette accuracy testing kit

Accessories

AD-1653 Density determination kit
AD-1671 Anti-vibration table for balances
AD-1676 Tabletop breeze break (medium)
AD-1683A External ionizer
AD-1684A Electrostatic field meter
AD-1687 Weighing environment logger
AD-1688 Weighing data logger
AD-1689 Tweezers for calibration weight
AD-8129TH Compact thermal printer
AD-8526 RS-232C/Ethernet (TCP/IP) converter
AD-8541-PC Bluetooth® dongle for PC

AD-8541-SCALE
AD-8920A
AD-8922A
AX-BM-031
AX-BM-033
AX-BM-034
AX-CLEANING-SET
AX-HOLDER-SET-B
AX-SW137-PRINT
AX-SW137-REZERO
AX-TRAY-10ML

RS-232C/Bluetooth® converter
Remote display
Remote controller
Display covers (5 pcs)
Dust cover for storage
Microtube holder
Balance cleaning set
Sample cup holder set (antistatic)
Foot switch for PRINT (with connector)
Foot switch for RE-ZERO (with connector)
Weigh boats (antistatic, 10 ml, 250 pcs)



AD-1683A external ionizer

Fanless static elimination for stable weighing, activated simply by hovering your hand over the IR sensor.



Internal Weight



Reverse Backlit LCD



Bi-directional/Quick USB



RS-232C Interface



User Access Control



GLP Compliant



Date & Time



Data Memory Function



Counting with ACAI



Percentage Function



Auto Power ON



Auto Power OFF



Underhook



Universal Flex Coms



Discover Precision

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