Premium-Level Semi-Micro/Analytical Balances

BH-T/BH

Series

ISO 9000 CERTIFIED

Superior Weighing, Without Compromise

A&D Company, Ltd.

Discover Precision

www.aandd.jp

Where Quality Drives Daily Performance

Designed for professionals who demand precision, compliance, and efficiency, the BH-T/BH series delivers superior accuracy with advanced sensor technology. Automatic doors, a sleek touchscreen, and intuitive navigation streamline your workflow—saving time and reducing risk. For those who seek excellence in every detail, the BH-T/BH series is the tool that delivers.

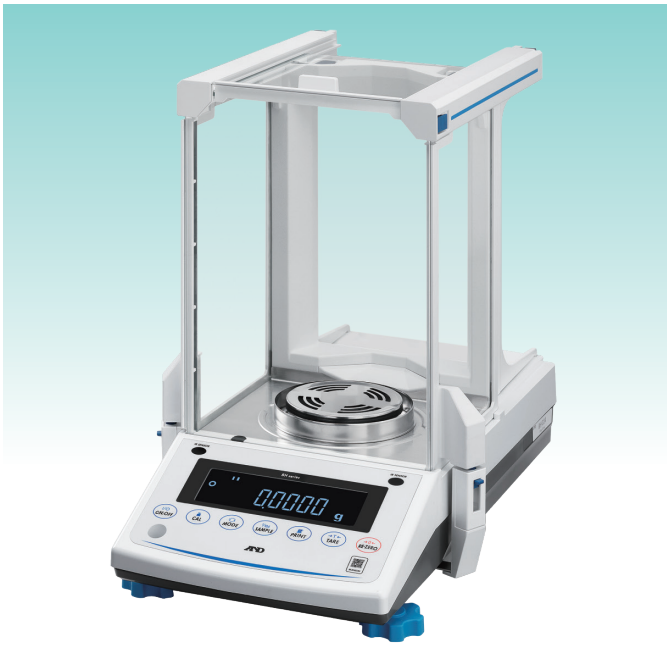
Two product lines, tailored to your needs

Equipped with a vibrant 5-inch color touchscreen, the BH-T series offers maximum operability, enhanced functionality, and a broader range of solutions for advanced weighing tasks. All models include an external ionizer (static eliminator) as standard.

On the other hand, the BH series features a standard reverse-backlit LCD display and is ideal for users who require only core functionality. It provides reliable performance with a straightforward interface, making it a practical choice for essential weighing needs.

BH-T series

BH series



Less effort, fewer errors, more focus on what matters

Automatic opening/closing of the breeze break doors

The side doors of the breeze break can be opened/closed using the non-contact IR sensors on the display unit (or an optional foot switch) for smooth, efficient access to the weighing chamber. You can choose to open either door—or both—by linking the door handle(s) to sliding arm(s), powered by pump and air cylinder technology♦ developed through A&D's expertise in designing and manufacturing blood pressure monitors. This mechanism is significantly quieter and more durable than conventional motor-driven actuators.

♦ Patented

Door handle
Simply connect the handle of the door you wish to open/close automatically to the sliding arm below using the latch on the arm.

Sliding arm (with latch)
The arm moves automatically when triggered by one of the IR sensors on the display unit (or an optional foot switch). The opening distance can be set to full, half, or a user-defined position.

IR sensors
The sensitivity of the IR sensors is adjustable to three levels. For the BH-T series, the IR sensors can also be used for contactless activation of the RE-ZERO or PRINT command, as an alternative to controlling the automatic door(s).

Touch screen and user navigation (for the BH-T series)
The touch screen enables intuitive operations while making it easy to enter numbers, change settings, etc. The resistive screen responds to pressure so it can be operated even when wearing thick gloves.

Physical keys
Four frequently used keys are provided as physical keys to allow quick access.

Multiple languages (for the BH-T series)
For users with various backgrounds, the display language can be set to English, French, German, Italian, Dutch, Spanish, Portuguese, Russian, Korean, Chinese, or Japanese.*1

*1 Certain functions are only available in English and Japanese.

Engineered design for quick and effortless balance cleaning

Each glass pane of the breeze break (including the rear panel), as well as the floor plate, can be easily detached for thorough cleaning/disinfection, thanks to the unique clip system. In addition, the side doors are suspended from the top rather than sliding along grooves, preventing the accumulation of dust/contaminants and making the area much easier to clean.♦

♦ Patented

For the BH-T/BH series, two sizes of brushes are provided as standard for daily cleaning, supporting prolonged maintenance of the balance.

Glass panes and floor plate fully removed

Groove-free side door design

Cleaning brushes (large and small)

Ensuring accuracy, every step of the way

Minimizing the impact of drafts and convection flows

The weighing pan of the BH-T/BH series features concentric slots that help mitigate the effects of convection flows, ensuring highly stable weighing. In addition, 0.01 mg models include two breeze break rings: a high-profile ring for enhanced protection against draft and convection flows, and a low-profile ring for use with items like weighing paper or filters that may touch the taller ring.*2

*2 Only the low-profile breeze break ring is included with 0.1 mg models.

Perforated weighing pan with high-profile breeze break ring

AD-Just – Automatic self-sensitivity adjustment

The balance can be set to calibrate and adjust its sensitivity automatically using its internal weight according to the set execution condition (i.e. temperature change, preset time, or interval) when there is nothing on its weighing pan. A message (or a simple indicator for the BH series) blinks to notify before the adjustment starts.

Quick on-site performance test

The balance can quickly assess repeatability (standard deviation) using its internal weight, allowing performance evaluation under actual operating conditions. In the BH-T series, the repeatability measurement mode is instantly accessible by pressing [P-TEST] on the screen. This mode supports testing with an external weight as well as the internal weight.

Impact shock detection (ISD)

The ISD function detects impact loads on the weight sensor and displays their intensity in five levels (0–4). Levels 3 and 4 also trigger an audible alert. This helps you reduce future impact, minimizing measurement errors and preventing sensor damage.

High-impact events (Levels 3 and 4) are recorded in the ISD history log, which can be reviewed to assess usage if issues arise.

Impact load: Level 4

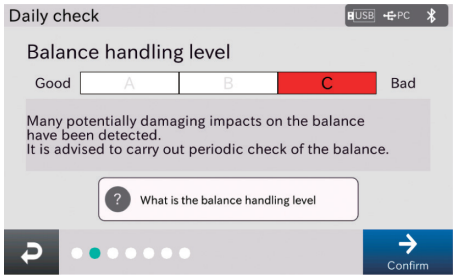
Additionally, a spring beneath the weighing pan acts as a shock absorber, softening the impact of sample placement and further reducing weighing errors.♦

♦ Patent pending

Smart routine check (SRC) (for the BH-T series)

Based on the ISD history log, the SRC function displays how adequately the balance has been handled, judged in three levels♦ (available as part of the daily check function described later). If poor handling is detected, the balance recommends a performance (periodic) check to ensure accuracy. This aids risk management and promotes better handling practices.

♦ Patented



Balance handling level judged to be C (bad)

External ionizer for instant static elimination

With the provided ionizer*3, you can easily ensure that the sample (and container) is completely free from destabilizing static electricity. Since a DC method is adopted, no fan is needed to deliver ions, and therefore no breeze is caused (except for minimal ionic wind), enabling static removal without disturbing even extremely fine powders.

*3 Optional for the BH series

Antistatic treatment

The glass panes of the breeze break are coated with transparent evaporated metal to block outside static electricity.

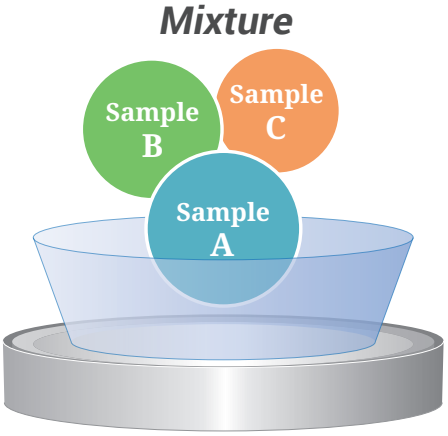
IR sensor

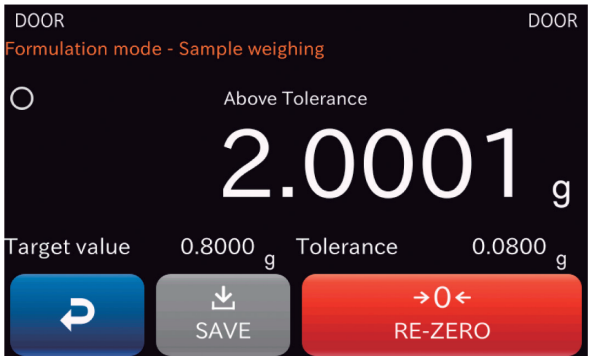
Simply hover your hand over the embedded IR sensor to activate the ionizer just before placing the sample inside the breeze break.

Application-specific functions that simplify your work

Formulation mode (for the BH-T series)

The formulation mode enables quick, accurate weighing of multiple samples to mix according to a set recipe, allowing you to set a target value (g) and tolerance (%) for each sample. Up to 150 samples and 300 recipes can be registered in the balance for easy creation or selection/change of recipes.

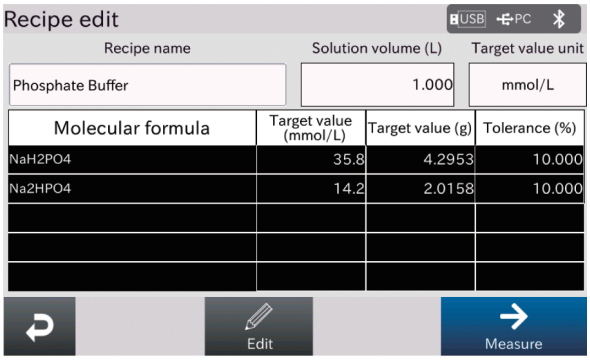




Weighing screen in formulation mode
Instructions prompt you to weigh each sample within its target range. The [SAVE] key to proceed to the next step activates only when the weight is within range, preventing errors.

HPLC mode (for the BH-T series)

The HPLC mode facilitates buffer solution preparation for high-performance liquid chromatography. You can specify target sample quantities in molar concentration (mol/L or mmol/L) as well as weight (g). Based on molecular weight and buffer volume, the balance automatically converts between molar concentration and weight—eliminating manual calculation errors.



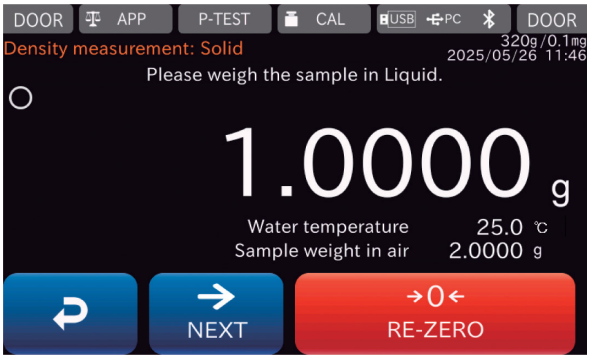
Recipe edit screen in HPLC mode
Thirteen commonly used samples are pre-registered with molecular weight data. Up to 30 additional samples and 300 recipes can be registered.

Both formulation and HPLC mode results show the measured quantity and tare value for each sample, which can be printed or saved to a USB flash drive in CSV format.

Density measurement mode

To measure density, simply enter the water temperature (or liquid density if not using water), then weigh the sample in air and in water using either the AD-1653 density determination kit (sold separately) or the underhook. The balance calculates density automatically. Liquid density can also be measured using a sinker.*4

*4 A sinker is included as standard with the AD-1653.

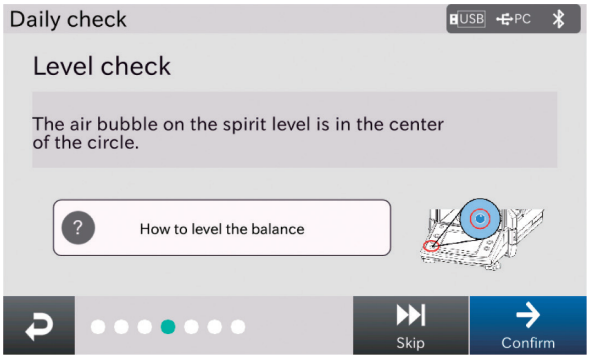


Density measurement of a solid sample

Beyond measurement—confidence through control

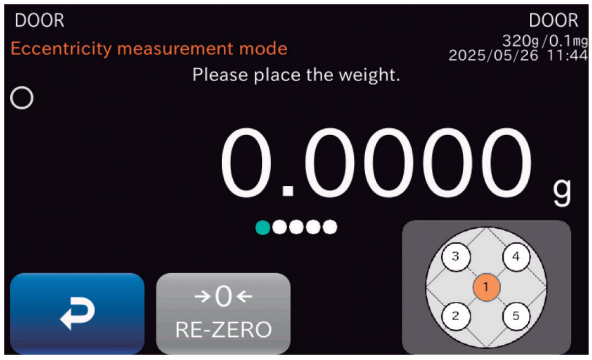
Daily/periodic balance check support (for the BH-T series)

The balance supports both daily and periodic balance checks, helping you implement standard operating procedures (SOPs) for quality and performance verification with ease. A daily check ensures that the balance is in good condition, whereas a periodic check evaluates its basic performance over time. No comprehensive knowledge or experience is required to implement these checks. All you need to do is follow the displayed procedures step-by-step (or skip items that are not needed for your laboratory).



Daily check item: Level check

Other daily check items include the smart routine check (SRC), external condition check, weighing pan check, and accuracy check.



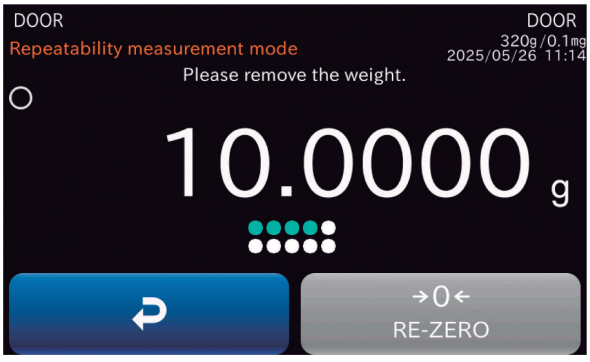
Periodic check item: Eccentricity measurement

Other periodic check items include calibration test, sensitivity adjustment, repeatability measurement (with pre-loading), and sensitivity test.

The balance can be configured to remind you of these checks as you prefer. The results can be printed or saved to a USB flash drive as a PDF report for documentation and compliance.

Minimum weight setting and alert

The minimum weight can be set*5 either by directly entering a value or by performing a repeatability test, from which the balance automatically calculates*6 the minimum weight.



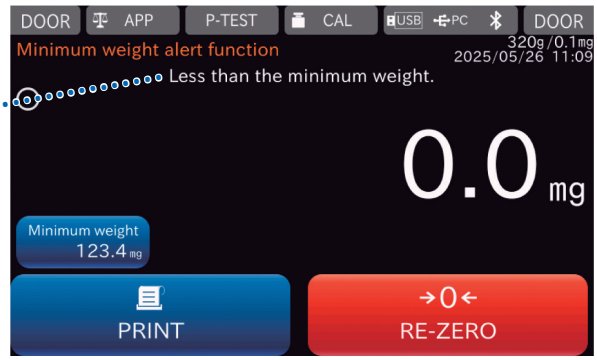
Repeatability measurement for minimum weight setting

The minimum weight is determined from the standard deviation of 10 repeated weighing results. The detailed calculation data can be output for your records.

*5 Unit of minimum weight setting is mg.
*6 By a tolerance of either 0.1% in accordance with Chapter 41 of the United States Pharmacopeia (USP), or 1%, depending on your laboratory requirements.

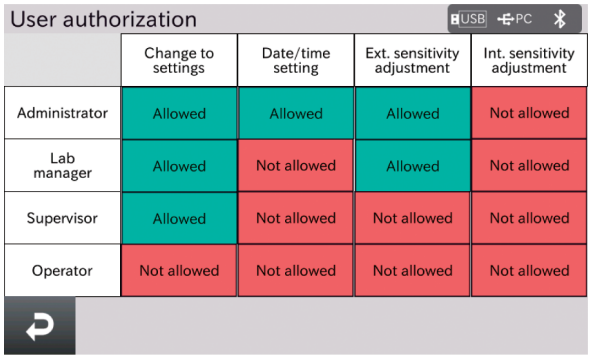
To ensure that the measured sample amount meets the minimum weight requirement, the balance can display an alert continuously until the sample amount reaches the set minimum weight. It is also possible to configure the balance to prevent output of weighing data that falls below the minimum weight.

Minimum weight alert
You can choose whether to include values near zero when comparing measurements against the minimum weight.



Advanced user access control (for the BH-T series*7)

To prevent unauthorized changes to balance settings/data, users can be assigned to one of four access levels: administrator, lab manager, supervisor, or operator. The administrator can define the extent of user rights for each level: change to settings, date/time setting, external sensitivity adjustment, and internal sensitivity adjustment.



	Change to settings	Date/time setting	Ext. sensitivity adjustment	Int. sensitivity adjustment
Administrator	Allowed	Allowed	Allowed	Not allowed
Lab manager	Allowed	Not allowed	Allowed	Not allowed
Supervisor	Allowed	Not allowed	Not allowed	Not allowed
Operator	Not allowed	Not allowed	Not allowed	Not allowed

User rights management

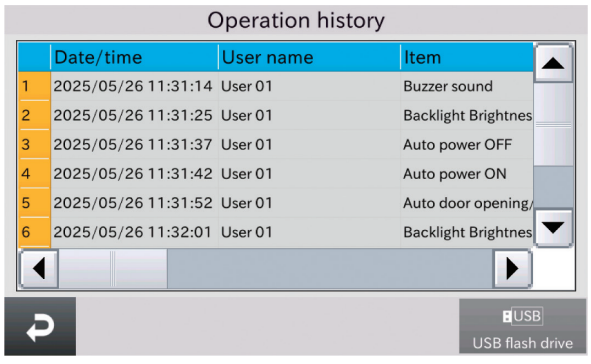
The administrator can register users as either lab managers or supervisors, assigning each a username and password. Up to 100 users can be registered, including the administrator.*8

*7 For the BH series, the administrator can set passwords for up to 10 additional users. Basic user rights management is also available via function selection switches for both these users and the administrator.
*8 Operators do not need a password.

History information (for the BH-T series)

The balance can display or save to a USB flash drive*9 the log-in/log-out history, operation (changes to settings) history, sensitivity adjustment history, and impact shock detection (ISD) history. Each record includes the date, time, username and other relevant information for later reference.

*9 The balance stores up to 1,000 records per history, overwriting the oldest entries as needed. It displays the latest 100 records but can save all data to a USB flash drive in CSV format.

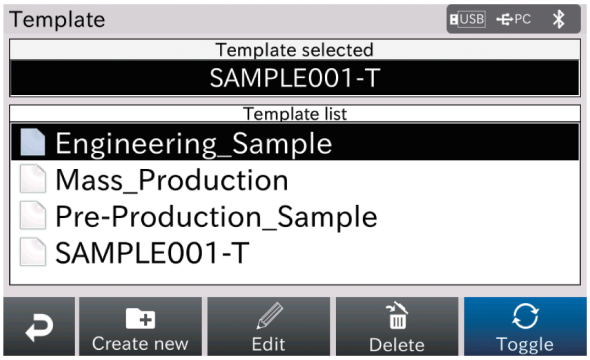


Operation history

GLP custom output mode (for the BH-T series*10)

The GLP custom output mode provides flexible customization of GxP-compliant data output. You can create reusable templates for headers, bodies, and footers, tailoring both content and sequence to your specific needs. Once set up, these templates significantly enhance efficiency and convenience in routine workflows.

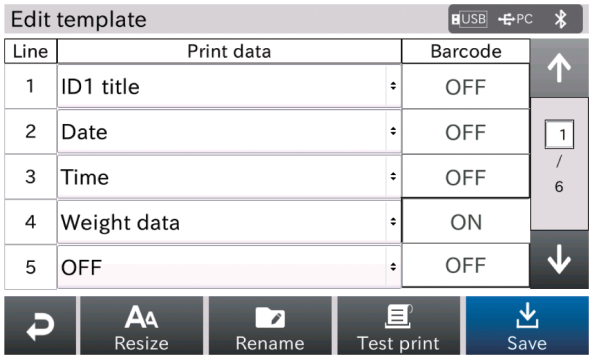
*10 A predefined GxP-compliant output function is available for both the BH and BH-T series.



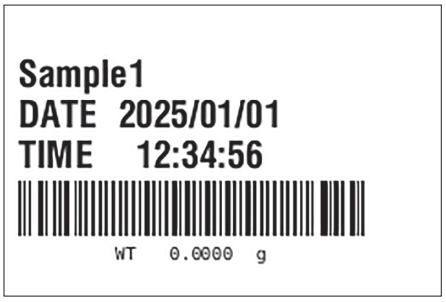
Selecting a template for GLP custom output

Label output mode (for the BH-T series)

The label output mode enables connection to a ZPL®/ZPL II®-compatible label printer for text and barcode (CODE128) output. Similar to the GLP custom output mode, it supports the creation of reusable templates with customizable content, allowing you to choose between text or barcode for each line. Adjustable print sizes ensure optimal readability and layout suited to various paper sizes.



Editing a template for label output



Label generated using a template

Communication interfaces and connectors

① **External key input (jack socket)**
A separately-sold foot switch can be connected for operation of RE-ZERO, PRINT or the automatic breeze break doors.

② **USB (Type-C) for connection with a PC**
Using internal settings, you can toggle between Quick USB (HID) mode, which allows direct transmission of weighing data to a PC application (e.g., a spreadsheet), and Virtual COM (CDC) mode for bi-directional communication. A 2-meter USB cable is supplied as standard.

③ **RS-232C (D-Sub 9P)**

④ **Connector for AC adapter**

⑤ **Bluetooth®*11*12**

⑥ **Ethernet (TCP/IP)*11**

⑦ **USB (Type-A) for USB flash drives*11**

*11 For the BH-T series only
*12 The Bluetooth® function is currently enabled for the US, Canada and Japan only.

Specifications

Common

Internal weight*[i]		Approx. 200 g
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/sec or 10 times/sec
Units of measure*[ii]		mg (milligram), g (gram), oz (ounce), ozt (troy ounce), ct (metric carat), mom (momme), dwt (pennyweight), gr (grain), pcs (counting mode), and % (percent mode)
Percent mode	**Minimum 100% reference mass**	10.0 mg
	% readability	0.01%, 0.1%, 1% (depends on the reference mass stored)
Weighing pan size		Ø90 mm
External dimensions		265 (W) × 442 (D) × 381 (H) mm
Net weight		Approx. 8 kg
Power supply / consumption		AC adapter / approx. 36 VA

BH-T series

		BH-225TE	BH-225DTE	BH-224TE	BH-324TE
Capacity		220 g	51 g / 220 g*[iii]	220 g	320 g
Readability		0.01 mg	0.01 mg / 0.1 mg*[iii]	0.1 mg	
Repeatability (standard deviation)*[iv]		0.015 mg (for 50 g) 0.03 mg (for 200 g)	0.025 mg (for 50 g) 0.1 mg (for 200 g)	0.09 mg	0.1 mg
Minimum weight*[v] (typical)		17 mg		104 mg	
Linearity		±0.10 mg	±0.2 mg		
Stabilization time (typical when set to FAST)		Approx. 7 secs	Approx. 7 secs / 3 secs	Approx. 3 secs	
Display		5-inch WVGA, TFT LCD color touch screen (resistive type) with two IR sensors			
Display language*[vi]		English, French, German, Italian, Dutch, Spanish, Portuguese, Russian, Korean, Chinese, Japanese			
Counting mode	**Minimum unit mass**	0.1 mg			
	Number of samples	10 to 100 pieces			
Communication interface		RS-232C (D-Sub 9P), USB (Type-A), USB (Type-C), Ethernet (TCP/IP), External key input, Bluetooth® *[vii]			
Applicable weights for calibration test/sensitivity adjustment		Any weight between 10 and 200 g			
Standard accessories		AD-1683A external ionizer × 1, High-profile breeze break ring × 1*[viii], Low-profile breeze break ring × 1, AD-1689 tweezers for calibration weight × 1*[viii], Micro spatula × 1*[viii], Large and small cleaning brushes × 1 each, Weigh boat (antistatic, 10 ml) × 10, USB cable (2 m) × 1			

BH series

		BH-225	BH-225D	BH-124	BH-224	BH-324
Capacity		220 g	51 g / 220 g*iii	120 g	220 g	320 g
Readability		0.01 mg	0.01 mg / 0.1 mg*iii	0.1 mg		
Repeatability (standard deviation)*iv		0.015 mg (for 50 g) 0.03 mg (for 200 g)	0.025 mg (for 50 g) 0.1 mg (for 200 g)	0.09 mg		0.1 mg
Minimum weight*v (typical)		17 mg		104 mg		
Linearity		±0.10 mg	±0.2 mg			
Stabilization time (typical when set to FAST)		Approx. 7 secs	Approx. 7 secs / 3 secs	Approx. 3 secs		
Display		Reverse backlit LCD (main characters: 11 segments, 17.8 mm height)				
Counting mode	**Minimum unit mass**	0.1 mg				
	Number of samples	5, 10, 25, 50 or 100 pieces				
Communication interface		RS-232C (D-Sub 9P), 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	200 g, 100 g, 50 g, 20 g, 10 g	300 g, 200 g, 100 g, 50 g, 20 g, 10 g
Standard accessories		High-profile breeze break ring × 1*viii, Low-profile breeze break ring × 1, AD-1689 tweezers for calibration weight × 1*viii, Micro spatula × 1*viii, Large and small cleaning brushes × 1 each, Weigh boat (antistatic, 10 ml) × 10, USB cable (2 m) × 1				

***i** The mass of the internal weight may change over time due to on-site environmental conditions and/or degradation with age.
***ii** Either tael (Singapore/HK jewelry/Taiwan) or tola can be added upon request.
***iii** Smart range function: Automatically switches between the precision and standard ranges.
Changes back to full precision range when the RE-ZERO (tare) operation is implemented.
***iv** Repeatability can worsen depending on the environmental conditions and operator skills.
***v** Pursuant to the United States Pharmacopeia (USP), Chapter 41
***vi** Certain functions are only available in English and Japanese.
***vii** The Bluetooth® function is currently enabled for the US, Canada and Japan only.
***viii** For 0.01 mg models

For both series

- Internal Weight
- Bi-directional/ Quick USB
- RS-232C Interface
- User Access Control
- GLP Compliant
- Date & Time
- Impact Shock Detection
- Counting with ACAI
- Percentage Function
- Auto Power ON
- Auto Power OFF
- Underhook
- Universal Flexi Coms

For the BH-T series only

- Touch Screen
- USB Host Interface
- Ethernet (TCP/IP) Interface
- Bluetooth® Interface *vii
- Statistical Calculation
- Static Eliminator

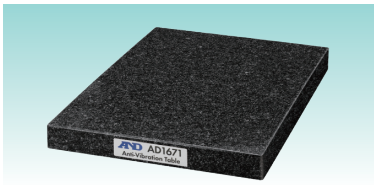
For the BH series only

- Reverse Backlit LCD
- Data Memory Function

***vii** The Bluetooth® function is currently enabled for the US, Canada and Japan only.

Accessories

AD-1653	Density determination kit
AD-1671	Anti-vibration table for balances
AD-1672/AD-1672A	Tabletop breeze break (large)
AD-1683A	External ionizer Also provided as standard for the BH-T series
AD-1684A	Electrostatic field meter
AD-1687	Weighing environment logger
AD-1688	Weighing data logger
AD-8129TH	Compact printer
AX-BHT-31	Display cover for the BH-T series (5 pcs)
AX-BH-31	Display cover for the BH series (5 pcs)
AX-BH-PAN-01	Weighing pan (perforated)
AX-BH-PAN-02	Weighing pan (non-perforated)
AX-BM-NEEDLESET	Discharge electrode units for the ionizer (a set of 4 pcs)
AX-HOLDER-SET-B	Sample cup holder set (antistatic)
AX-IR-SWITCH	External IR switch Can be added to the ionizer if you prefer not to put a hand or sample close to the IR sensor of the ionizer.
AX-SW137-PRINT	Foot switch for PRINT (with connector)
AX-SW137-REZERO	Foot switch for RE-ZERO (with connector)



AD-1671
460 (W) × 400 (D) × 71 (H) mm

AD-1683A with AX-IR-SWITCH

Foot switches

Demonstration videos available!

A&D Company, Ltd.

Discover Precision

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★ BH-T-ADCC-00-PR1-256