

Shimadzu Electronic Balances General Catalog



Supporting the laboratories of the future with more than 100 years of experience and expertise.

Shimadzu began manufacturing balances in 1918. For more than 100 years, we have been at the forefront of providing precision, quality solutions for the most challenging R&D and QA/QC requirements. Our steadfast customer-focused commitment and unwavering dedication to technical excellence are both hallmarks of our history and the principles that guide us into the future.

SHIMADZU ELECTRONIC BALANCES

A Tradition of Weighing Expertise

Established in 1875 in Kyoto, Japan, Shimadzu Corporation is one of the pioneers in scientific precision instruments.

Top-pan and torsion balance production started in 1918, and equal-beam analytical balances were introduced in 1925. Since their release, the continuous improvement of Shimadzu balances has contributed to research and development across all industries.

Around the turn of the 20th century, precision weighing was a time-consuming practice performed only by experienced operators. Placing the sample and small masses on pans hung from a beam scale with a moving indicator was a tedious process. Shimadzu strove continuously to streamline weighing procedures. The introduction of the direct reading analytical balance (patented in Japan in 1948) signified a new era in weighing technology. In the Type L balance, the sensitive mass-loading work was replaced by

convenient dial operations. This reduced weighing time by 66% and, subsequently, reduced demand for conventional balances.

Shimadzu then added the top-loading direct reading balance with Roberval's mechanism in 1959. Until recently, many of these instruments remained in use in modern laboratories.

Shimadzu continued to pioneer technologies, releasing its first electronic balance in 1971—the Digibalance. This release marked a milestone in precision weighing, introducing simplicity and ease of use to analytical weighing.

Six years later (1977), the application of microprocessors in electronic balances further enhanced weighing performance. The compact ED Series provided substantial improvements in sensitivity, resolution, and stability.





More recently, Shimadzu has introduced user-friendly instruments and features to the market, such as:

- Temperature-based fully-automatic calibration in 1985
- The first one-piece force cell (OPF, later renamed UniBloc™) in 1989
- The high-sensitivity AEM-5200 Micro Balance in 1993
- The unique Windows® Direct feature perfectly suited for the computerized laboratory of the 21st century.

Its most recent achievement is the AP Series, high-performance balances featuring UniBloc and a high response speed, and which are applicable for a wide range of applications.

Moving forward, Shimadzu is committed to providing innovative products for the analytical marketplace.

Contents

P 04 - UniBloc

P 06 - Functions Menu

P 08 - Product Lineup

P 12 - AP Series

P 19 - STABLO-AP (Ionizer)

P 22 - AU Series
AT-R Series

P 26 - UP Series
UW/UX Series
TW/TX Series

P 31 - BL Series

P 32 - BW-K/BX-K Series

P 33 - EP-100/EP-110

P 34 - MOC63u
MOC-120H

P 37 - Specific Gravity Analyzers

P 42 - Animal Balances

P 44 - Analytical Network Data System

P 46 - Optional Accessories

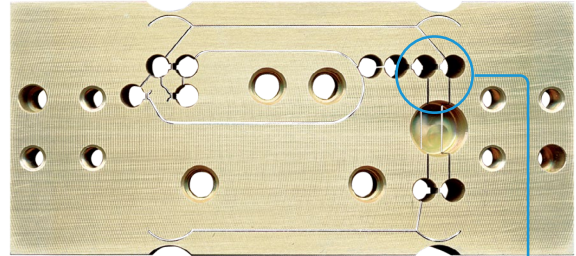
P 48 - Physical Dimensions



UniBloc Goes Beyond the Concept of Precision Balances

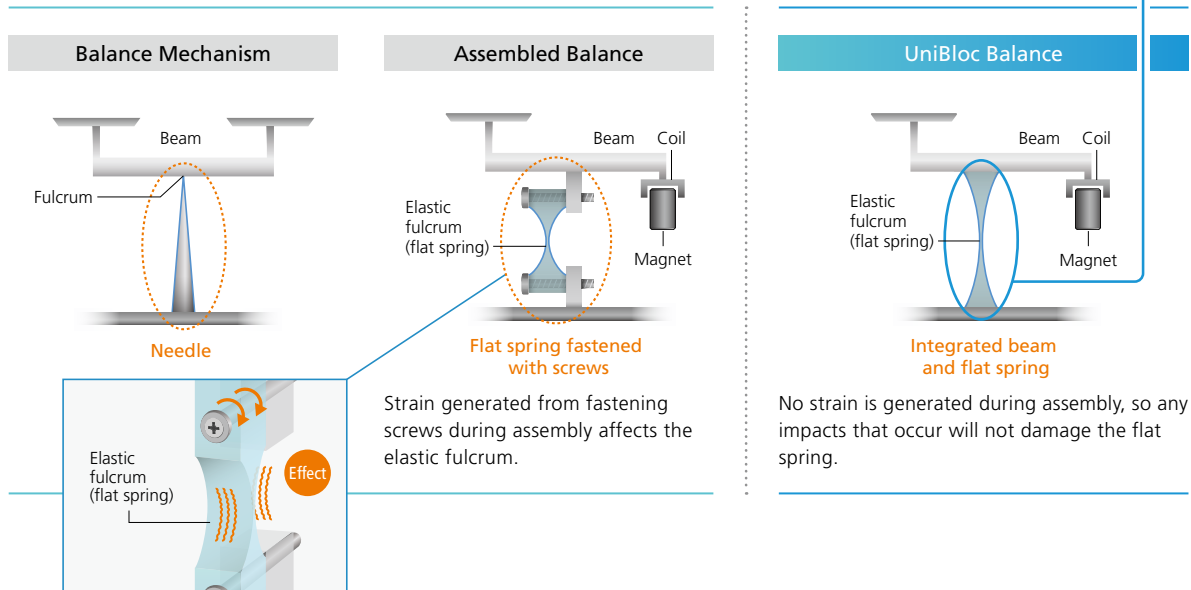
The aluminum UniBloc integrated sensor mechanism is precisely machined from a single block of aluminum alloy.

Because all components are integrated into a single aluminum block, assembly requires no fastening screws and places no stress on the elastic fulcrum, resulting in an exceptionally impact-resistant sensor that is designed for long-term reliability.



UniBloc

Illustrations of Balance Mechanism, Assembled Balance, and UniBloc Balance



High responsiveness

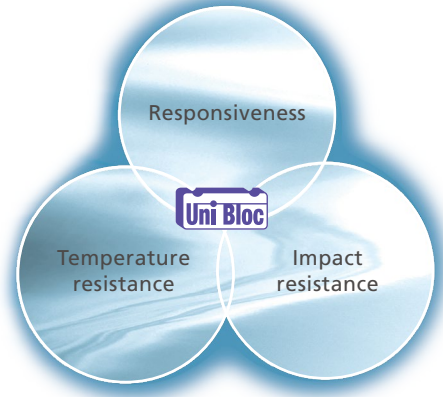
Control speed has been improved and the fastest high-speed response is realized by reducing the mass of the lever system. (Comparison with previous model)

High temperature resistance

As a result of the integral block structure, the temperature distribution throughout the cell is more uniform, which improves the temperature characteristics.

High impact resistance

The shock resistance is significantly improved by the compact aluminum integrally formed cell.



One Million-Cycle Endurance Testing

Engineered with the impact-resistant UniBloc sensor, they have passed one-million-cycle endurance testing.*



Appearance of Endurance Testing

* Endurance Testing

Method: A 1-kg weight is moved on and off the pan at 1.5-second intervals.

Pass/fail criterion: Satisfies Shimadzu standards for routine inspections after the on-off cycles.

Note: Japan's Measurement Act specifies endurance testing to 100,000 cycles.

UP series balances are tested to more than ten times that level.

UniBloc family of balances

Experience the performance of UniBloc for yourself.



AP series



AU series



AT-R series



UP series



UW/UX series



TW/TX series



BW-K/BX-K series



MOC-120H



MOC63u

Shimadzu Balances Offer a Diverse Range of Functions

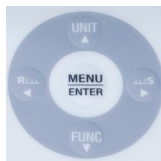
01

High-Level
Functionality Easy Setting

During operation, if you want to make the display slightly more stable, or alternatively, want to improve the response speed, you can make one-touch adjustments without interrupting measurement. A special indicator is provided that instantly shows the adjustment status.

 Menu Operation Key

Keys exclusively for menu operations are arranged separately from the measurement keys. Menus can be operated intuitively using the cross-shaped key layout.

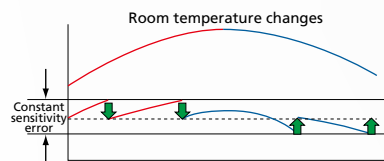
 Clock-CAL

The balance starts calibration using built-in weights at preset times. If you set calibration times before important measurements (e.g. before starting work in the morning, during lunch or an evening break), the balance will automatically start calibration when the preset time is reached. This lets you take stable, reliable measurements without worrying about sensitivity calibration.

 Perfect Self Calibration (PSC)

Electronic balances are precision instruments very susceptible to changes in room temperature. Sensitivity must be calibrated every time the balance is used since changes in room temperature influence mass values, which should remain constant. The balance detects changes in room temperature that affect sensitivity, and automatically starts calibration using built-in weights. As a result, sensitivity errors are always kept within a constant range.

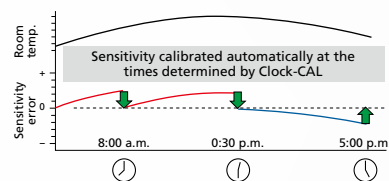
This allows the operator to concentrate on measurement tasks without having to worry about sensitivity calibration.



The perfect self calibration (PSC) function keeps the sensitivity error within a constant range at all times.

Internal weight calibration (i-cal)

Internal weight calibration (i-cal) is recommended for routine and periodic sensitivity adjustments, while reference weights should be used for routine and periodic sensitivity checks.



02

Durability

 UniBloc

Developed by Shimadzu, UniBloc is manufactured using high-precision electric discharge wire processing applied to a block of aluminum alloy and replaces the conventional sensor block assembly. As such, it uses no springs or screws. This uniform structure dramatically improves response and temperature characteristics, and the simple yet compact design enhances impact resistance. Balances equipped with UniBloc provide highly reliable mass measurement even during prolonged use.

03

Convenient
Functions Internal Calibration

The balance has built-in motor-driven calibration weights. Sensitivity can be calibrated as needed with a single key press.

 Formulation Mode

This is convenient when formulating (preparing) multiple substances.

 Interval Timer

Data can be automatically output at time intervals set in the range from 1 second to 99 minutes 59 seconds. This function can be combined with Balance Keys.

 Checkweighing

When upper and lower thresholds are set, the balance indicates if the sample weight is within the range (GO), over (HI) or under (LO).

 Backlight LCD

The backlight LCD display can be clearly read in the darkest of environments.

 Analog Bar Display

Remaining weighing capacity can be seen by the analog bar graph at a glance.

04

ISO / GLP / GMP



Built-in Clock

With the optional printer connected, data can be recorded with date and time stamps. Calibration reports can also be date- and time-stamped, which is ideal for establishing measurement and traceability requirements specified by GLP, GMP and ISO 9001.



ISO Calibration Report

Simply connect an optional printer to automatically print which balance was calibrated, when it was calibrated, and the calibration results. No difficult settings are required. Furthermore, the current date and time can be printed at any time during measurement.



(AUW Series Printout Sample)

05

PC Connection



RS-232C Interface

Equipped with an RS-232C interface for easy integration with other devices and computers.



Computer Connection Function

Systems can be connected to a computer via an optional cable/adaptor kit. For more details, visit the Shimadzu website.



Balance Keys



Multi-Balance Collect

Multi-Balance Collect and Balance Keys software run on Windows®. Directly importing balance data into a PC using these free software tools eliminates transcription errors, improves work efficiency, and increases data reliability. Multi-Balance Collect can also collect data continuously at fixed intervals. It is recommended when you want to record changes over time, such as weight changes due to evaporation, on multiple balances.

06

Network



LabSolutions™ Balance

Connecting with LabSolutions lets you save data from balances, HPLC and other analytical instruments to a database and create reports automatically. Uniform data management means no transcription errors and is perfect for security.

07

Applications



Standard Below-weigh Hook

Also compatible with suspension measurements.



Piece Counting

A piece counting function enables balances to be used as parts counters (piece scales).



Specific Gravity Measurement

A specific gravity calculation function based on the immersion method is built in.

Just attach the optional Specific Gravity Measurement Kit to use a balance as a specific gravity meter.



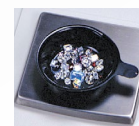
Animal Measurement Mode

The weight of mice, rats, rabbits, and other small animals can be measured. Stable measurements are obtained even if the animal moves.



Carat Measurement

Results can be displayed in carats when measuring precious stones. Change among many weighing units and functions with a single touch.



08

Printer



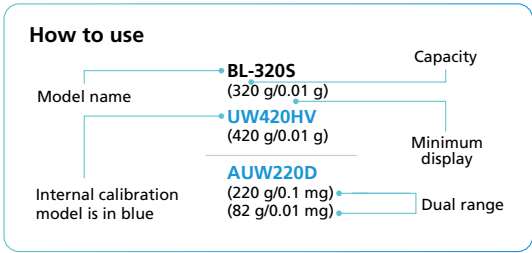
Printer

Using an optional printer can enhance support for ISO/GLP/GMP.



Product Lineup

	Up to 100 g	More than 100 g	More than 300 g	More than 500 g	More than 1 kg	More than 3 kg	
0.01 mg	AP125WD-AD ex (120 g/0.1 mg) (52 g/0.01 mg)	AP225W-AD ex (220 g/0.01 mg)					
	AP125WD-AD (120 g/0.1 mg) (52 g/0.01 mg)	AP225W-AD (220 g/0.01 mg)					
	AP125WD ex (120 g/0.1 mg) (52 g/0.01 mg)	AP135W-AD ex (135 g/0.01 mg)					
	AP125WD (120 g/0.1 mg) (52 g/0.01 mg)	AP135W-AD (135 g/0.01 mg)					
	AUW220D (220 g/0.1 mg) (82 g/0.01 mg)	AP225WD-AD ex (220 g/0.1 mg) (102 g/0.01 mg)					
	AUW120D (120 g/0.1 mg) (42 g/0.01 mg)	AP225WD-AD (220 g/0.1 mg) (102 g/0.01 mg)					
		AP225W ex (220 g/0.01 mg)					
		AP225W (220 g/0.01 mg)					
		AP135W ex (135 g/0.01 mg)					
		AP135W (135 g/0.01 mg)					
		AP225WD ex (220 g/0.1 mg) (102 g/0.01 mg)					
		AP225WD (220 g/0.1 mg) (102 g/0.01 mg)					
	0.1 mg	ATX84R (82 g/0.1 mg)	AP224W-AD (220 g/0.1 mg)	AP324W-AD (320 g/0.1 mg)			
		ATY64R (62 g/0.1 mg)	AP224W	AP324W			
TWC323L		AP224X	AP324X				
TXC323L (64 g/0.2 mg)		AP224Y (220 g/0.1 mg)	AP324Y (320 g/0.1 mg)				
		AP124W	AUX320				
		AP124X	AUW320 (320 g/0.1 mg)				
		AP124Y (120 g/0.1 mg)	ATX324R				
		AUW220	ATY324R (320 g/0.1 mg)				
		AUX220					
		AUY220 (220 g/0.1 mg)					
		AUW120					
		AUX120					
		AUY120 (120 g/0.1 mg)					
		ATX124R					
		ATY124R (120 g/0.1 mg)					
		ATX224R					
		ATY224R (220 g/0.1 mg)					
		TWC623L					
		TXC623L (124 g/0.2 mg)					



* The UW/UX series will be discontinued when the stocks are sold out.





































	Up to 100 g	More than 100 g	More than 300 g	More than 500 g	More than 1 kg	More than 3 kg
0.001 g (1 mg)		UP223X UP223Y (220 g/0.001 g) UW220H UX220H (220 g/0.001 g) TW223L TX223L (220 g/0.001 g) BL-220H (220 g/0.001 g)	UP423X UP423Y (420 g/0.001 g) UW420H UX420H (420 g/0.001 g) TW423L TX423L (420 g/0.001 g) TW323L TX323L (320 g/0.001 g) BL-320H (320 g/0.001 g)	UP623X UP623Y (620 g/0.001 g) UP823X UP823Y (820 g/0.001 g) UW820H UX820H (820 g/0.001 g) UW620H UX620H (620 g/0.001 g)	UP1023X UP1023Y (1020 g/0.001 g) UW1020H UX1020H (1020 g/0.001 g)	






































0.01 g (10 mg)			UP422X UP422Y (420 g/0.01 g) UW420S UX420S (420 g/0.01 g) BL-320S (320 g/0.01 g)	UP822X UP822Y (820 g/0.01 g) UW820S UX820S (820 g/0.01 g) BL-620S (620 g/0.01 g)	UP2202X UP2202Y (2200 g/0.01 g) UW2200H UX2200H (2200 g/0.01 g) TX2202L (2200 g/0.01 g) BL-2200L (2200 g/0.01 g)	UP4202X UP4202Y (4200 g/0.01 g) UP6202X UP6202Y (6200 g/0.01 g) UW4200H UX4200H (4200 g/0.01 g) UW6200H UX6200H (6200 g/0.01 g) TX4202L (4200 g/0.01 g) TX3202L (3200 g/0.01 g) BL-3200H (3200 g/0.01 g)
-------------------	--	--	--	--	---	--

0.1 g (100 mg)						UP4201X UP4201Y (4200 g/0.1 g) UW4200S UX4200S (4200 g/0.1 g) BL-3200S (3200 g/0.1 g)
-------------------	--	--	--	--	--	---

	More than 5 kg	More than 10 kg	More than 30 kg	More than 50 kg
0.1 g (100 mg)	UP8201X UP8201Y (8200 g/0.1 g) UW8200S UX8200S (8200 g/0.1 g)	BW22KH BX22KH (22 kg/0.1 g) BW12KH BX12KH (12 kg/0.1 g)	BW32KH BX32KH (32 kg/0.1 g)	

1 g			BW32KS BX32KS (32 kg/1 g)	BW52KS BX52KS (52 kg/1 g)
-----	--	--	---	---

		 AP W-AD ex AP WD-AD AP W-AD	 AP W ex AP WD AP W	 AP X	 AP Y	 AUW-D AUW	 AUX	 AUY	 ATX-R ATY-R
 UniBloc	UniBloc	✓	✓	✓	✓	✓	✓	✓	✓
 PSC	Perfect Self Calibration	✓	✓	✓		✓	✓		✓ (ATX-R only)
 Clock-CAL	Clock-CAL	✓	✓	✓		✓			
 Internal Calibration	Internal Calibration	✓	✓	✓		✓	✓		✓ (ATX-R only)
 Single-Lever CAL	Single-Lever CAL								
 Built-in Clock	Built-in Clock	✓	✓	✓	✓	✓	✓		
 ISO Calibration Report	ISO Calibration Report	✓	✓	✓	✓	✓	✓		
 Printer*1	Printer*1	✓	✓	✓	✓	✓	✓	✓	✓
 PC	Computer Connection Function	✓	✓	✓	✓	✓	✓	✓	✓
 Multi-Balance Collect	Multi-Balance Collect	✓	✓	✓	✓	✓	✓	✓	✓
 Balance Keys	Balance Keys	✓	✓	✓	✓	✓	✓	✓	✓
 RS-232C INTERFACE	Built-in RS-232C Interface	✓	✓	✓	✓	✓	✓	✓	✓
 USB INTERFACE	Built-in USB Interface	✓	✓	✓	✓				✓
 Touchless Sensor	Touchless Sensor	✓							
 Smart Auto Door	Smart Auto Door	✓							
 Menu Operation Key	Menu Operation Key	✓	✓	✓	✓				
 Easy Setting	Easy Setting	✓	✓	✓	✓				✓
 Backlight	Backlight					✓ (AUW only)			
 Organic EL Display	Organic EL Display	✓	✓	✓	✓				
 Analog Bar Display	Analog Bar Display	✓	✓	✓	✓	✓	✓	✓	
 H1 LEO	Checkweighing	✓	✓	✓	✓				✓
 Comparator Output	Comparator Output								
 PCS	Piece Counting	✓	✓	✓	✓	✓	✓	✓	✓
 CARAT	Carat Measurement	✓	✓	✓	✓	✓	✓	✓	✓
 Specific Gravity	Specific Gravity Measurement	✓	✓	✓	✓	✓	✓	✓	✓
 Animal Measurement Mode	Standard Below-weigh Hook	✓	✓	✓	✓	✓	✓	✓	
 Formulation Mode	Formulation Mode	✓	✓	✓	✓	✓	✓	✓	✓
 Interval Timer	Interval Timer	✓	✓	✓	✓	✓	✓		

	 UP-X UW*2 *3	 UP-Y UX*3 *4	 TW	 TX	 BW-K BX-K	 BL	 UW-V	 MOC63u	 MOC120H
	✓	✓	✓	✓	✓		✓	✓	✓
	✓						✓		
	✓						✓		
	✓		✓				✓		
					✓ (BW-K only)				
	✓	✓			✓		✓	✓	✓
	✓	✓			✓		✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓*5	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓	✓	
	✓	✓	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓*5	✓	✓	✓
								✓	
									
			✓	✓					
			✓	✓					
	✓	✓					✓	✓	✓
									
	✓	✓			✓	✓	✓		
	✓	✓	✓	✓	✓		✓		
	✓	✓					✓		
	✓	✓	✓	✓	✓	✓	✓		
	✓	✓	✓	✓	✓	✓	✓		
	✓	✓			✓		✓		
	✓	✓			✓*6		✓		
	✓	✓			✓				
	✓	✓	✓	✓	✓		✓		
	✓	✓			✓			✓	✓

*1 Option

*2 The pictures show the UP-X.

*3 The UW/UX series will be discontinued when the stocks are sold out.

*4 The pictures show the UP-Y.

*5 Requires optional I/O-RS conversion cable or interface IFB-102A.

*6 Requires an optional below-weigh hook.

NEW

AP W-AD *ex* Series

AP W *ex* Series



[See Products](#)

Accurate Weighing. Next-Level Innovation. Comfort and Trust in Every Weigh.

01 Precision Weighing

Now with significantly improved repeatability.

The minimum weighable quantity specified by the United States, European and Japanese pharmacopoeias has been improved from 20 mg in conventional models to 13 mg*, enabling analysis with smaller sample volumes.

02 Reliable Weighing

AP Holder, ideal for accommodating various glass container sizes, is included as a standard accessory.

Effectively eliminates static from glassware and samples on the weighing pan when paired with the STABLO-AP ionizer.

03 Comfortable Operation

The AP W-AD ex and AP W ex series carries forward the user-friendly features of AP series.

Touchless sensors and a Smart Auto Door (featuring learning and manual trigger functions) reduce the physical burden of weighing tasks, providing a more comfortable weighing experience. Touchless operation also ensures highly reliable measurements.

*Compliant with the Japanese Pharmacopoeia, USP 41 and Ph. Eur. 2.1.7.

Minimum weight value is met at the Shimadzu Corporation factory using weights equal to approximately 5 % of the weighing capacity.

This value is affected by the installation environment, so it is necessary to measure it at the actual site of use.

AP W-AD ex/W ex Series

Model Name	W-AD ex Series			
	AP225W-AD ex	AP135W-AD ex	AP225WD-AD ex	AP125WD-AD ex
Capacity	220 g	135 g	220 g / 102 g	120 g / 52 g
Minimum Display	0.01 mg		0.1 mg / 0.01 mg	
Pan Size	Approx. 91 mm dia.			
Dimensions	Approx. W215 × D411 × H346 mm (power supply unit included)			
Weight	Approx. 9.7 kg			
Adjustment Weight	Built-in *1			
Internal Weight Adjustment Accuracy *2	±0.08 mg (200 g) ±0.06 mg (100 g)	±0.06 mg (120 g)	±0.15 mg (200 g) / ±0.08 mg (100 g)	±0.15 mg (100 g) / ±0.06 mg (50 g)
Range of External Weights for Sensitivity Adjustment (recommended weight value)	95 to 220.00090 g (200 g)	45 to 135.00090 g (100 g)	95 to 220.00090 g (200 g)	45 to 120.00090 g (100 g)
Repeatability (at weighing capacity) *3	0.03 mg	0.02 mg	0.1 mg / 0.02 mg	
Repeatability (for Low Loads) *3 *4	0.0065 mg (approx. 5 % load)			
Minimum Weight *3 *4	13 mg			
Linearity *3	±0.1 mg		±0.2 mg / ±0.1 mg	±0.2 mg / ±0.05 mg
Response Time for Trace Measurements *5 *6	2 sec.			
Response Time *6	8 sec.		2 sec. / 8 sec.	
Operational Temperature/Humidity Range	5 to 40 °C at 20 to 85 % RH *7			
Sensitivity Stability Against Temperature Range	±2 ppm/°C (10 to 30 °C)			
Display	OEL display (dot matrix)			
Rated Power Supply	DC 12 V 0.5 A			
Input Power Supply	For EU type approval models: AC 100 V–240 V 0.48 A 50/60 Hz *8 For other models: AC 100 V–240 V 0.7 A 50/60 Hz *8			
Input/Output Terminal	RS-232C (D-sub 9P plug), USB Host (Type A), USB device (Type B), Ionizer			
Functions, Options	USB Host (Type A), USB Device (Type B), Recipe Compounding, HPLC Buffer Solution Preparation, mol Conversion Function, Sample (Concentration) Preparation, Inspection Support Function, Clock-CAL, Automatic Doors, Touchless Sensors, Adjustable Internal Windbreak Plate, Ionizer*9			

Model Name	W ex Series			
	AP225W ex	AP135W ex	AP225WD ex	AP125WD ex
Capacity	220 g	135 g	220 g / 102 g	120 g / 52 g
Minimum Display	0.01 mg		0.1 mg / 0.01 mg	
Pan Size	Approx. 91 mm dia.			
Dimensions	Approx. W215 × D411 × H346 mm (power supply unit included)			
Weight	Approx. 9.7 kg			
Adjustment Weight	Built-in *1			
Internal Weight Adjustment Accuracy *2	±0.08 mg (200 g) ±0.06 mg (100 g)	±0.06 mg (120 g)	±0.15 mg (200 g) / ±0.08 mg (100 g)	±0.15 mg (100 g) / ±0.06 mg (50 g)
Range of External Weights for Sensitivity Adjustment (recommended weight value)	95 to 220.00090 g (200 g)	45 to 135.00090 g (100 g)	95 to 220.00090 g (200 g)	45 to 120.00090 g (100 g)
Repeatability (at weighing capacity) *3	0.03 mg	0.02 mg	0.1 mg / 0.02 mg	
Repeatability (for Low Loads) *3 *4	0.0065 mg (approx. 5 % load)			
Minimum Weight *3 *4	13 mg			
Linearity *3	±0.1 mg		±0.2 mg / ±0.1 mg	±0.2 mg / ±0.05 mg
Response Time for Trace Measurements *5 *6	2 sec.			
Response Time *6	8 sec.		2 sec. / 8 sec.	
Operational Temperature/Humidity Range	5 to 40 °C at 20 to 85 % RH *7			
Sensitivity Stability Against Temperature Range	±2 ppm/°C (10 to 30 °C)			
Display	OEL display (dot matrix)			
Rated Power Supply	DC 12 V 0.3 A			
Input Power Supply	For EU type approval models: AC 100 V–240 V 0.32–0.19 A 50/60 Hz *8 For other models: AC 100 V–240 V 0.7 A 50/60 Hz *8			
Input/Output Terminal	RS-232C (D-sub 9P plug), USB Host (Type A), USB device (Type B), Ionizer			
Functions, Options	USB Host (Type A), USB Device (Type B), Recipe Compounding, HPLC Buffer Solution Preparation, mol Conversion Function, Sample (Concentration) Preparation, Inspection Support Function, Clock-CAL, Internal Windbreak Plate Ionizer*9 (optional)			

*1 Minimum display 0.01 mg models provide two internal weights as standard.

*2 Deviation from the nominal value of the reference weight (average value)

*3 Based on our shipping inspection conditions.

*4 Compliant with the Japanese Pharmacopoeia, USP 41 and Ph. Eur. 2.1.7. Minimum weight value is met at the Shimadzu Corporation factory using weights equal to approximately 5 % of the weighing capacity.

*5 The response time for displaying 90 % of the added sample amount value in trace measurements (from 1 mg).

*6 The response time value is typical.

*7 Non-condensing.

*8 The Input Power Supply may change without notice.

*9 See more details of ionizer on page 19.

AP W-AD Series

Model Name	W-AD Series					
	AP225W-AD	AP135W-AD	AP225WD-AD	AP125WD-AD	AP324W-AD	AP224W-AD
Capacity	220 g	135 g	220 g / 102 g	120 g / 52 g	320 g	220 g
Minimum Display	0.01 mg		0.1 mg / 0.01 mg		0.1 mg	
Pan Size	Approx. 91 mm dia.					
Dimensions	Approx. W215 × D411 × H346 mm (power supply unit included)				Approx. W215 × D367 × H346 mm	
Weight	Approx. 9.7 kg				Approx. 8.6 kg	
Adjustment Weight	Built-in *1					
Internal Weight Adjustment Accuracy *2	±0.15 mg (200 g) ±0.12 mg (100 g)	±0.12 mg (120 g)	±0.20 mg (200 g) / ±0.12 mg (100 g)	±0.20 mg (100 g) / ±0.08 mg (50 g)	±0.30 mg (300 g)	±0.20 mg (200 g)
Range of External Weights for Sensitivity Adjustment (recommended weight value)	95 to 220.00090 g (200 g)	45 to 135.00090 g (100 g)	95 to 220.00090 g (200 g)	45 to 120.00090 g (100 g)	95 to 320.0090 g (300 g)	95 to 220.0090 g (200 g)
Repeatability (at weighing capacity) *3	0.015 mg (to 20 g) 0.03 mg (to 100 g) 0.05 mg (to 220 g)	0.05 mg	0.1 mg / 0.05 mg	0.1 mg / 0.02 mg	0.15 mg	0.1 mg
Repeatability (for Low Loads) *3 *4	0.01 mg (approx. 5 % load)				0.1 mg (approx. 5 % load)	
Minimum Weight *3 *4	20 mg				200 mg	
Linearity *3	±0.1 mg		±0.2 mg / ±0.1 mg	±0.2 mg / ±0.05 mg	±0.3 mg	±0.2 mg
Response Time for Trace Measurements *5 *6	2 sec.					
Response Time *6	8 sec.		2 sec. / 8 sec.		2 sec.	
Operational Temperature/Humidity Range	5 to 40 °C at 20 to 85 % RH *7					
Sensitivity Stability Against Temperature Range	±2 ppm/°C (10 to 30 °C)					
Display	OEL display (dot matrix)					
Rated Power Supply	DC 12 V 0.5 A					
Input Power Supply	For EU type approval models: AC 100 V–240 V 0.48 A 50/60 Hz *8 For other models: AC 100 V–240 V 0.7 A 50/60 Hz *8					
Input/Output Terminal	RS-232C (D-sub 9P plug), USB Host (Type A), USB device (Type B), Ionizer					
Functions, Options	USB Host (Type A), USB Device (Type B), Recipe Compounding, HPLC Buffer Solution Preparation, mol Conversion Function, Sample (Concentration) Preparation, Inspection Support Function, Clock-CAL, Automatic Doors, Touchless Sensors, Ionizer*9				Adjustable Internal Windbreak Plate	
					Internal Windbreak Plate (optional)	

*1 Minimum display 0.01 mg models provide two internal weights as standard.

*2 Deviation from the nominal value of the reference weight (average value)

*3 Based on our shipping inspection conditions.

*4 Compliant with the Japanese Pharmacopoeia, USP 41 and Ph. Eur. 2.1.7. Minimum weight value is met at the Shimadzu Corporation factory using weights equal to approximately 5 % of the weighing capacity.

*5 The response time for displaying 90 % of the added sample amount value in trace measurements (from 1 mg).

*6 The response time value is typical.

*7 Non-condensing.

*8 The Input Power Supply may change without notice.

*9 See more details of ionizer on page 19.

AP W/X/Y Series

Model name	W Series						
	AP225W	AP135W	AP225WD	AP125WD	AP324W	AP224W	AP124W
Capacity	220 g	135 g	220 g / 102 g	120 g / 52 g	320 g	220 g	120 g
Minimum Display	0.01 mg		0.1 mg / 0.01 mg		0.1 mg		
Pan Size	Approx. 91 mm dia.						
Dimensions	Approx. W213 × D411 × H345 mm (power supply unit included)				Approx. W213 × D367 × H345 mm		
Weight	Approx. 7.9 kg				Approx. 7.0kg		
Adjustment Weight	Built-in *1						
Internal Weight Adjustment Accuracy *2	±0.15 mg (200 g) ±0.12 mg (100 g)	±0.12 mg (120 g)	±0.20 mg (200 g) ±0.12 mg (100 g)	±0.20 mg (100 g) ±0.08 mg (50 g)	±0.30 mg (300 g)	±0.20 mg (200 g)	±0.20 mg (100 g)
Range of External Weights for Sensitivity Adjustment (recommended weight value)	95 to 220.0090 g (200 g)	45 to 135.00090 g (100 g)	95 to 220.00090 g (200 g)	45 to 120.00090 g (100 g)	95 to 320.0090 g (300 g)	95 to 220.0090 g (200 g)	45 to 120.0090 g (100 g)
Repeatability (at weighing capacity) *3	0.015 mg (to 20 g) 0.03 mg (to 100 g) 0.05 mg (to 220 g)	0.05 mg	0.1 mg / 0.05 mg	0.1 mg / 0.02 mg	0.15 mg	0.1 mg	
Repeatability (for Low Loads) *3 *4	0.01 mg (approx. 5 % load)				0.1 mg (approx. 5 % load)		
Minimum Weight *3 *4	20 mg				200 mg		
Linearity	±0.1 mg		±0.2 mg / ±0.1 mg		±0.2 mg / ±0.05 mg	±0.3 mg	±0.2 mg
Response Time for Trace Measurements *5 *6	2 sec.						
Response Time *6	8 sec.		2 sec./8 sec.		2 sec.		
Operational Temperature/Humidity Range	5 to 40 °C at 20 to 85 % RH *7						
Sensitivity Stability Against Temperature Range	±2 ppm/°C (10 to 30 °C)						
Display	OEL display (dot matrix)						
Rated Power Supply	DC 12 V 0.3 A						
Input Power Supply	For EU type approval models: AC 100 V–240 V 0.32–0.19 A 50/60 Hz *8 For other models: AC 100 V–240 V 0.7 A 50/60 Hz *8						
Input/Output Terminal	RS-232C (D-sub 9P plug) USB host (Type A) USB device (Type B) Ionizer						
Functions, Options	USB Host (Type A), USB Device (Type B), Recipe Compounding, HPLC Buffer Solution Preparation, mol Conversion Function, Sample (Concentration) Preparation, Inspection Support Function, Clock-CAL						
	Internal Windbreak Plate				Internal Windbreak Plate (optional)		
	Ionizer*9 (optional)						

Model name	X Series			Y Series		
	AP324X	AP224X	AP124X	AP324Y	AP224Y	AP124Y
Capacity	320 g	220 g	120 g	320 g	220 g	120 g
Minimum Display	0.1 mg					
Pan Size	Approx. 91 mm dia.					
Dimensions	Approx. W213 × D367 × H345 mm					
Weight	Approx. 7.0 kg			Approx. 6.5 kg		
Adjustment Weight	Built-in			None		
Internal Weight Adjustment Accuracy *2	±0.30 mg (300 g)	±0.20 mg (200 g)	±0.20 mg (100 g)	—		
Range of External Weights for Sensitivity Adjustment (recommended weight value)	95 to 320.0090 g (300 g)	95 to 220.0090 g (200 g)	45 to 120.0090 g (100 g)	95 to 320.0090 g (300 g)	95 to 220.0090 g (200 g)	45 to 120.0090 g (100 g)
Repeatability (at weighing capacity) *3	0.15 mg	0.1 mg		0.15 mg	0.1 mg	
Repeatability (for Low Loads) *3 *4	0.1 mg (approx. 5 % load)					
Minimum Weight *3 *4	200 mg					
Linearity	±0.3 mg	±0.2 mg		±0.3 mg	±0.2 mg	
Response Time for Trace Measurements *5 *6	2 sec.					
Response Time *6	2 sec.					
Operational Temperature/Humidity Range	5 to 40°C at 20 to 85% RH *7					
Sensitivity Stability Against Temperature Range	±2 ppm/°C (10 to 30°C)					
Display	OEL display (dot matrix)					
Rated Power Supply	DC 12 V 0.3 A					
Input Power Supply	For EU type approval models: AC 100 V–240 V 0.32–0.19 A 50/60 Hz *8 For other models: AC 100 V–240 V 0.7 A 50/60 Hz *8					
Input/Output Terminal	RS-232C (D-sub 9P plug) USB host (Type A) USB device (Type B) Ionizer					
Functions, Options	mol Conversion Function, Inspection Support Function, Clock-CAL					
	Internal Windbreak Plate (optional)					
	Ionizer*9 (optional)					

*1 Minimum display 0.01 mg models provide two internal weights as standard.

*2 Deviation from the nominal value of the reference weight (average value)

*3 Based on our shipping inspection conditions.

*4 Compliant with the Japanese Pharmacopoeia, USP 41 and Ph. Eur. 2.1.7. Minimum weight value is met at the Shimadzu Corporation factory using weights equal to approximately 5 % of the weighing capacity.

*5 The response time for displaying 90 % of the added sample amount value in trace measurements (from 1 mg).

*6 The response time value is typical.

*7 Non-condensing.

*8 The Input Power Supply may change without notice.

*9 See more details of ionizer on page 19.

Multi-Stand

(included as standard with 0.01 mg models of W-AD series only)

If placing weighing paper, microtubes, or other containers that exceed the pan diameter, or when weighing long rod-like samples, attach a specialized multi-stand to easily weigh samples.

- Example Using a Multi-Stand

Weighing Paper



Microtubes



Rod-Like Samples



AP Holder

(included as standard with the AP W-AD ex/W ex Series and AP225W-AD/AP225W models)

When used in combination with the built-in STABLO-AP ionizer, static electricity can be efficiently removed from glass containers and samples placed on the weighing pan.



AP Holder

Multi Rack

Holes of various diameters are provided on three sides, allowing compatibility with a wide range of container sizes.

- Example of use: Multi Rack



Internal Windbreak Plate (AP W ex/W/X/Y Series)

(included as standard with 0.01 mg models of W series only)

The plate suppresses the influence of convection and airflow within the weighing chamber to improve the stability and response of measurement values.



Other Optional Products



SMK-601 Specific Gravity Measurement Kit



EP-100



EP-110



Anti-glare Canopy Plate

Optional Accessories

Description
STABLO-AP Ionizer Static Electricity Remover
EP-100 Electronic Printer
EP-110 Electronic Printer
Internal Windbreak Plate (for W ex/W/X/Y Series) *1
Internal Windbreak Plate (W ex/W/X/Y Series for 0.1 mg)
Internal Windbreak Plate Set (for W ex/W/X/Y Series)
SMK-601 Specific Gravity Measurement Kit
AP Holder *2
Multi-Stand *3
Multi Rack

Description
Shield plate
AC Adapter (for AP Series)
AC Adapter (for W-AD ex/W-AD Series STABLO-AP Ionizers)
Display Protective Cover (Set of 5)
Anti-glare Canopy Plate (For Analytical Balance)
USB Cable Assembly (2 m) with Core
RS-IO Adapter Cable (for Connecting EP-80/90)

*1 Included as standard with 0.01 mg models of AP W ex/W series only

*2 Included as standard with AP W-AD ex/W ex series, AP225W-AD/AP225W models

*3 Included as standard with 0.01 mg models of AP W-AD ex/W ex/W-AD series only

Static Remover (Ionizer)



[See Products](#)

An excellent solution against static electricity.

STABLO-AP provides reliable measurement by removing static electricity.

1 On Stand



2 Hand-held



3 Built-in Balance (AP series)

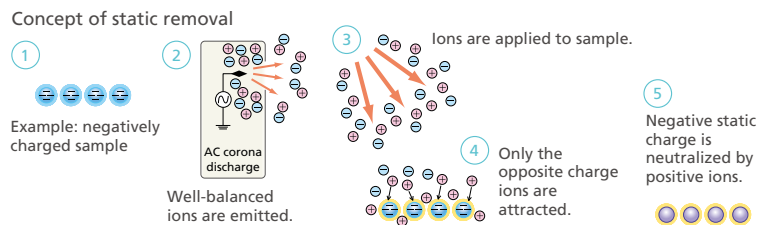


Easily installed in the balance

Features of STABLO-AP

Static Electricity Removal by Ion Irradiation

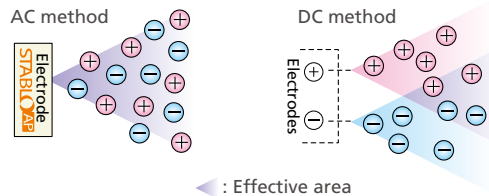
With the AC corona discharge method, Shimadzu's STABLO-AP ionizer provides stable ion balance and excellent static removal performance on samples and containers. Precision weighing work becomes remarkably efficient. Electrodes are safely housed inside the unit.



AC Method Produces Excellent Ion Balance

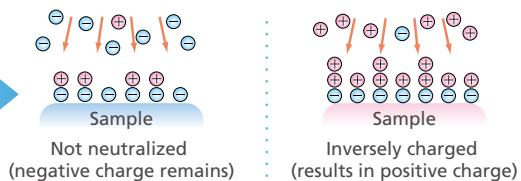
AC method: AC voltage is applied to the discharge needle and a well-balanced ions are emitted from one electrode.

DC method: DC voltage is applied to a pair of electrodes. One is positive and the other is negative. Each electrode emits ions of one polarity only. The effective static-removal range is limited when the two electrodes are spaced far apart. As electrodes deteriorate, the initial ion balance is lost.



What is "ion balance"?

Ion balance is the balance of positive and negative ions that are supplied by an ionizer. If ion balance is poor, static electricity is not removed or reverse charging may result.



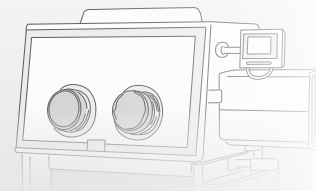
Static Remover (Ionizer)

STABLO-AP

STABLO-AP Ar
STABLO-AP N₂Argon environments
Corona discharge-type
An industry first!*

Achieves safe and efficient static elimination

Ensures that films, powdered samples, such as powdered battery materials, and other substances can be weighed efficiently.



* Based on Shimadzu research as of April 2026

Corona Discharge-Type Ionizer for Safe Use in Argon or Nitrogen Environments

- Ion balance optimization ensures safe operability by eliminating concerns about sparking
- Delivers optimal static-removal performance in argon and nitrogen environments.
- The draft-free ionizer is perfect for eliminating static from materials such as powders, films, weighing papers, and containers

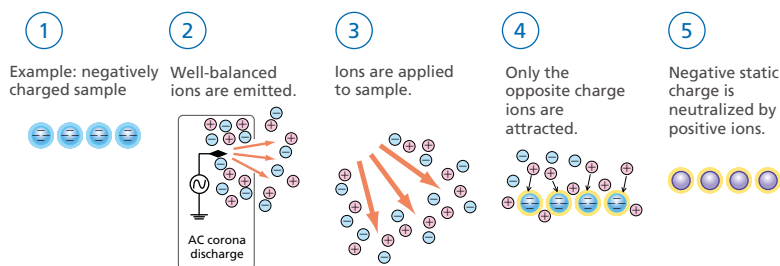
Long-Life and Low-Cost Design Provides Consistent Static Elimination Performance

- The recommended replacement interval for the discharge needles is 30,000 hours. (can be used for about 10 years at 8 hours of ion emission per day)
- Corona discharge models are significantly less expensive than radiation-type models (vacuum UV rays or soft X-rays)
- This space-saving design can be used in three ways: hand-held, on a stand, or installed in an AP series analytical balance.

STABLO-AP Principle of Static Removal

Static Electricity Removal by Ion Irradiation

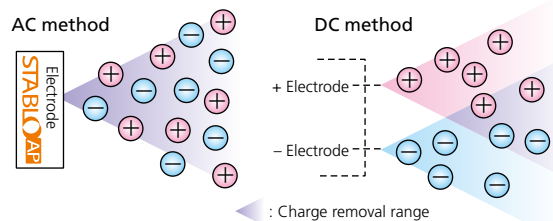
For samples and containers prone to static charging, especially when weighing them in a laboratory-class analytical balance, static electric charge can cause display value instability or other symptoms. The STABLO-AP enables accurate and stable measurements by emitting a well-balanced stream of ions generated by an AC corona discharge for reducing static charge.



AC Method Produces Excellent Ion Balance

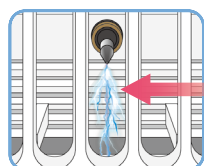
AC method: AC voltage is applied to the discharge needle and well-balanced ions are emitted from one electrode.

DC method: DC voltage is applied to a pair of electrodes. One is positive and the other is negative. Each electrode emits ions of one polarity only. The effective static-removal range is limited when the two electrodes are spaced far apart. As electrodes deteriorate, the initial ion balance is lost.



Effective in argon and nitrogen environments

By adjusting the + or - discharge voltage and discharge time based on the given gas environment, the corona discharge state can be optimized to ensure safe and efficient static charge elimination.

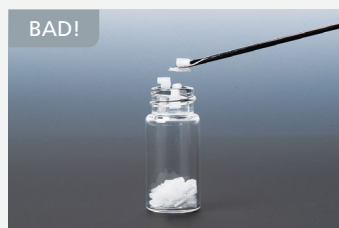


If a corona discharge ionizer for air atmospheres is used in an argon environment:

- Sparking might occur during ionizer operation.
- If sparking occurs, static charge might not be eliminated properly or an opposite static charge might be applied.

Applications

Static electricity keeps the sample out of the ampoule



The sample is hard to handle because it adheres to the ampoule inlet and sides.



STABLO-AP removes the charge from the ampoule.



The static charge is gone in seconds. This improves productivity.

Plastic wrap sticks to rubber gloves



Plastic wrap adheres to rubber gloves, making it difficult to work with them.



Fasten STABLO-AP to the stand, and remove the static from the gloves.



The static is removed in about 10 seconds, and the plastic wrap no longer sticks.

Specifications

Model Name	STABLO-AP	STABLO-AP Ar	STABLO-AP N ₂
Operating Environment	Typical atmospheric air environment Temp.: 0 to 40 °C Humidity: 25 % to max. 85 % RH (with no condensation)	Argon environment *1 *2 Temp: 0 °C to 40 °C Dew Point: -76 °Cdp (Moisture Concentration 1 ppm) Oxygen Concentration: 1 ppm	Nitrogen environment *1 *2 *3 *4 Temp: 0 °C to 40 °C Dew Point: -76 °Cdp (Moisture Concentration 1 ppm) Oxygen Concentration: 1 ppm
Static Elimination Method	AC corona discharge		
Ion Balance *5 *6	±10 V		
Effective Static Removal Range *6	Approx. 300 mm from the outlet		
Static Elimination Time *5 *6 *7	About 1 sec.	About 2.5 sec.	About 5 sec.
Ozone Concentration	0.06 ppm max. (105 mm from discharge port)	Not applicable *8	
Discharge Electrode(Material)	Tungsten (durability: 30,000 hours)		
Size (unit)	Approx. 120 × 87 × 49 mm (Excluding protruding parts)		
Weight	Approx. 710 g (Main unit: 395 g, Stand: 315 g)		
Rated Power Supply	DC 24 V, 0.1 A		
Input Power Supply	AC 100 V-240 V, 0.58 A, 50/60 Hz *9		

- *1 To achieve the specified performance, allow the ionizer to acclimate in the operating environment for at least 24 hours to ensure moisture dissipates from the ionizer body.
- *2 Pressure reduction in the glove box pass box is permissible down to -0.1 MPa.
- *3 Do not place any conductive materials around the ionizer or in the space between the ionizer and the object for static elimination. The ions may be attracted, causing a deterioration in static elimination performance.
- *4 When integrating a nitrogen gas environment model into AP-AD/AP series balances, it is recommended to extend the static elimination time setting from 10 seconds to 30 seconds.

- *5 This shipping inspection criterion is measured with a 20 pF 150 × 150 mm CPM (charged plate monitor) plate placed at a 100 mm distance from the center of the outlet.
- *6 When using the ionizer in an environment with airflow, such as purge-type glove boxes, make sure to direct the ionizer outlet along the direction of the airflow.
- *7 Time for 1 kV of static charge to decrease to 100 V or less (at 100 mm distance)
- *8 STABLO-AP Ar does not generate ozone, because oxygen does not exist in an argon environment.
- *9 The Input Power Supply may change without notice.

Multifunctional Analytical Balances

AU Series

[See Products](#) 
































































UniBloc Analytical Balances

AUW-D series dual-range semi-micro balances
 AUW/AUX/AUY series analytical balances



Excellent Weighing Performance

- Compact UniBloc mechanism and digital processing technology produce fast response and stability at the same time.
- Measurement results can be transmitted to Excel® or other Windows® applications.
- Piece counting, various mass units, below-weigh hook, and specific gravity measurement software are all standard features.

AUW-D Series																		
AUW Series																		
AUX Series																		
AUY Series																		

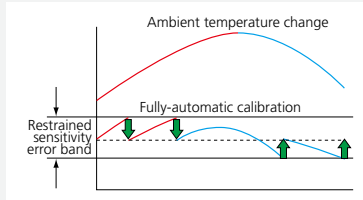
Model Name	AUW-D Series		AUW Series			AUX Series			AUY Series	
	AUW220D	AUW120D	AUW320	AUW220	AUW120	AUX320	AUX220	AUX120	AUY220	AUY120
Capacity	220 g / 82 g	120 g / 42 g	320 g	220 g	120 g	320 g	220 g	120 g	220 g	120 g
Minimum Display	0.1 mg / 0.01 mg		0.1 mg							
Internal Weight Adjustment Accuracy*1	±0.20 mg (200 g) / ±0.15 mg (100 g)	±0.20 mg (100 g) / ±0.10 mg (50 g)	±0.30 mg (300 g)	±0.20 mg (200 g)	±0.20 mg (100 g)	±0.30 mg (300 g)	±0.20 mg (200 g)	±0.20 mg (100 g)	—	
Pan Size	Approx. 80 mm dia.									
Dimensions	Approx. W217 × D356 × H338 mm									
Weight	Approx. 7.0 kg									
Rated Power Supply	DC 12 V, 0.3 A									
Input Power Supply	For EU type approval models: AC100 V–240 V, 0.32–0.19 A, 50/60 Hz*2 For other models: AC 100 V–240 V, 0.7 A, 50/60 Hz*2									

*1 Deviation from the nominal value of the reference weight (average value)

*2 The Input Power Supply may change without notice.

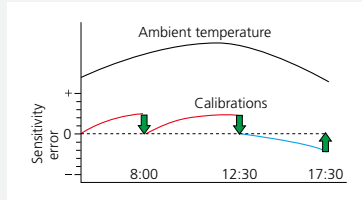
PSC (Perfect Self-Calibration)
(AUW-D/AUW/AUX series only)

Automatically calibrates the balance if an ambient temperature change occurs that could affect sensitivity.



Clock-CAL
(AUW-D/AUW series only)

This automatically calibrates the balance at pre-specified times (such as before starting work, during lunch, or after work hours).



Internal Calibration
(AUW-D/AUW/AUX series only)

The balance has built-in motor-driven calibration weights. Sensitivity can be calibrated as needed with a single key press.

ISO Calibration Report

Simply connect an optional printer to automatically print out which balance was calibrated when, and the calibration results. No difficult settings are required. Furthermore, the current date and time can be printed at any time during measurement.

Interval Timer
(AUW-D/AUW/AUX series only)

Data can be automatically output at time intervals set in the range from 1 second to 99 minutes 59 seconds. This function can be combined with Balance Keys.

PCS Piece Counting

A built-in piece counting function enables balances to be used as parts counters (piece scales).

RS-232C Interface

Equipped with an RS-232C interface for easy integration with other devices and computers.

Specific Gravity Measurement

Installing the optional SMK-401 specific gravity measurement kit transforms the balance into a dedicated instrument for measuring specific gravity or density. Specific gravity measurement software is already installed in the Shimadzu balance (refer to page 38).

Carat Measurement

Results can be displayed in carats when measuring precious stones. Change among many weighing units and functions with a single touch.

Printer

By adding an optional printer, the measurement results can be automatically printed (refer to page 33).

Optional Accessories

Description
STABLO-AP Ionizer Static Electricity Remover
EP-100 Electronic Printer
EP-110 Electronic Printer
SMK-401 Specific Gravity Measurement Kit
AP Holder
Multi-Stand
Multi Rack
In-use Protective Cover
RS-232C Cable
USB-Serial Replacement Kit
AKB-301 Application Keyboard
FSB-102PK Foot Switch
FSB-102TK Foot Switch
Anti-glare Canopy Plate (For Analytical Balance)
AC Adapter (Provided with the main unit)



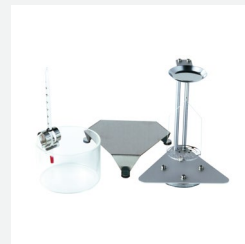
AKB-301
Application Keyboard



AP Holder



STABLO-AP



SMK-401
Specific Gravity Measurement Kit

Basic Models of Analytical Balances

AT-R Series

[See Products](#)

Basic Model with Enhanced Convenience

- Freely adjust responsiveness or stability
- Achieve stable measurements in combination with an ionizer
- Connect to a computer via USB or RS-232C



ATX-R Series	Uni Bloc	PSC	Multi-CAL	PC	Multi-Balance Collect	Balance Keys	RS-232C INTERFACE	USB INTERFACE	HI GO LO	PCS	CARAT	Specific Gravity	%	Scale
ATY-R Series	Uni Bloc	PC	Multi-Balance Collect	Balance Keys	RS-232C INTERFACE	USB INTERFACE	HI GO LO	PCS	CARAT	Specific Gravity	%	Scale		

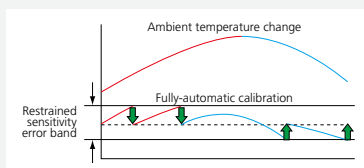
Model Name	ATX-R Series				ATY-R Series			
	ATX324R	ATX224R	ATX124R	ATX84R	ATY324R	ATY224R	ATY124R	ATY64R
Capacity	320 g	220 g	120 g	82 g	320 g	220 g	120 g	62 g
Minimum Display	0.1 mg							
Internal Weight Adjustment Accuracy*1	±0.30 mg (300 g)	±0.20 mg (200 g)	±0.20 mg (100 g)	±0.20 mg (80 g)	—			
Pan Size	Approx. 91 mm dia.							
Dimensions	Approx. W213 × D356 × H338 mm							
Weight	Approx. 6.2 kg				Approx. 6.0 kg			
Rated Power Supply	DC 12 V, 0.4 A							
Input Power Supply	For EU type approval models: AC100 V–240 V, 0.32–0.19 A, 50/60 Hz*2 For other models: AC 100 V–240 V, 0.7 A, 50/60 Hz*2							

*1 Deviation from the nominal value of the reference weight (average value)

*2 The Input Power Supply may change without notice.

PSC (Perfect Self-Calibration)
(ATX-R only)

Automatically calibrates the balance if an ambient temperature change occurs that could affect sensitivity.



Internal Calibration
(ATX-R only)

The balance has built-in motor-driven calibration weights. Sensitivity can be calibrated as needed by a single key press.

HI GO LO
Checkweighing

When upper and lower thresholds are set, the balance indicates if the sample weight is within the range (GO), over (HI) or under (LO).

PC
Computer Connection Function

Systems can be connected to a computer via an optional cable/adaptor kit. For more details, visit the Shimadzu website.

RS-232C INTERFACE
RS-232C Interface

Equipped with an RS-232C interface for easy integration with other devices and computers.

USB INTERFACE
USB Interface

A USB connector is built in for connecting to a PC.

PCS
Piece Counting

A built-in piece counting function enables balances to be used as parts counters (piece scales).

CARAT
Carat Measurement

Results can be displayed in carats when measuring precious stones. Change among many weighing units and functions with a single touch.

%
Percentage Measurement

Measures a percentage value with respect to a preset reference.

Formulation Mode

This is convenient when formulating (preparing) multiple substances.

Easy Setting

During operation, if you want to make the display slightly more stable, or alternatively, want to improve the response speed, you can make one-touch adjustments without interrupting measurement. A special indicator is provided that instantly shows the adjustment status.



Optional Accessories

Description
STABLO-AP Ionizer Static Electricity Remover
EP-100 Electronic Printer
EP-110 Electronic Printer
USB Cable Set
SMK-501 Specific Gravity Measurement Kit
AP Holder
Multi-Stand
Multi Rack
Protective Cover (5 pc set)
Anti-glare Canopy Plate (For Analytical Balance)
AC Adapter (Provided with the main unit)



STABLO-AP



SMK-501
Specific Gravity Measurement Kit



AP Holder

Multifunctional Top-Loading Balances

UP Series

[See Products](#)

Top-loading Balances with the Fastest Response in Their Class



Large Pan with 0.1 g Minimum Display Value

UP4201X UP4201Y
UP8201X UP8201Y



Small Pan with 0.01 g Minimum Display Value

UP422X UP422Y
UP822X UP822Y



Large Pan with 0.01 g Minimum Display Value

UP2202X UP2202Y UP4202X UP4202Y UP6202X UP6202Y



Small Pan with 0.001 g Minimum Display Value

UP223X UP223Y UP423X UP423Y
UP623X UP623Y UP823X UP823Y
UP1023X UP1023Y

* The windbreak is removable.

UP-X Series																					
UP-Y Series																					

UP-X Series

Model name	UP223X	UP423X	UP623X	UP823X	UP1023X	UP2202X	UP4202X	UP6202X	UP422X	UP822X	UP4201X	UP8201X
Capacity	220 g	420 g	620 g	820 g	1020 g	2200 g	4200 g	6200 g	420 g	820 g	4200 g	8200 g
Minimum Display	0.001 g					0.01 g					0.1 g	
Internal Weight Adjustment Accuracy*1	±2 mg (200 g)	±2 mg (400 g)	±3 mg (600 g)	±4 mg (800 g)	±4 mg (1 kg)	±20 mg (2 kg)	±20 mg (4 kg)	±30 mg (6 kg)	±10 mg (400 g)	±10 mg (800 g)	±100 mg (4 kg)	±100 mg (8 kg)
Pan Size	Approx. W113 × D110 mm					Approx. W176 × D189 mm			Approx. W113 × D110 mm		Approx. W176 × D189 mm	
Dimensions*3	Approx. W191 × D317 × H79 mm					Approx. W191 × D317 × H82 mm			Approx. W191 × D317 × H79 mm			
Weight*3	Approx. 3.3 kg					Approx. 4.7 kg			Approx. 3.3 kg		Approx. 4.7 kg	
Rated Power Supply	DC 12 V, 0.2 A											
Input Power Supply	AC 100 V–240 V, 0.7 A, 50/60 Hz*2											

UP-Y Series

Model name	UP223Y	UP423Y	UP623Y	UP823Y	UP1023Y	UP2202Y	UP4202Y	UP6202Y	UP422Y	UP822Y	UP4201Y	UP8201Y
Capacity	220 g	420 g	620 g	820 g	1020 g	2200 g	4200 g	6200 g	420 g	820 g	4200 g	8200 g
Minimum Display	0.001 g					0.01 g					0.1 g	
Pan Size	Approx. W113 × D110 mm					Approx. W176 × D189 mm			Approx. W113 × D110 mm		Approx. W176 × D189 mm	
Dimensions*3	Approx. W191 × D317 × H79 mm					Approx. W191 × D317 × H82 mm			Approx. W191 × D317 × H79 mm			
Weight*3	Approx. 2.5 kg					Approx. 2.9 kg			Approx. 2.5 kg		Approx. 2.9 kg	
Rated Power Supply	DC 12 V, 0.2 A											
Input Power Supply	AC 100 V–240 V, 0.7 A, 50/60 Hz*2											

*1 Deviation from the nominal value of the reference weight (average value)

*3 Excluding the windshield set

*2 The Input Power Supply may change without notice.

PSC (Perfect Self-Calibration)
(UP-X series only)

Automatically calibrates the balance if an ambient temperature change occurs that could affect sensitivity.

Clock-CAL
(UP-X series only)

This automatically calibrates the balance at pre-specified times (such as before starting work, during lunch, or after work hours).

Internal Calibration
(UP-X series only)

The balance has built-in motor-driven calibration weights. Sensitivity can be calibrated as needed by a single key press.

Built-in Clock

If a printer (optional) is connected, then data can be marked with the date and time. Calibration results can also be marked with date and time, which is perfect for measurement and traceability requirements specified by GLP/GMP/ISO 9001 standards.

ISO Calibration Report

Simply connect an optional printer to automatically print out which balance was calibrated when, and the calibration results. No difficult settings are required. Furthermore, the current date and time can be printed at any time during measurement.

Backlight LCD

The backlight LCD display can be clearly read in low-light environments.

Checkweighing

When upper and lower thresholds are set, the balance indicates if the sample weight is within the range (GO), over (HI) or under (LO).

Comparator Output

Acceptable, high, or low weight results or other pass/fail results can be indicated by an audible sound or output externally as a contact signal. (Optional comparator audible indicator or relay output interface required.)

Carat Measurement

Results can be displayed in carats when measuring precious stones. Change among many weighing units and functions with a single touch.

Piece Counting

A built-in piece counting function enables the balance to be used as a parts counter (counting balance).

Computer Connection Function

Systems can be connected to a computer via an RS-232C cable or using a USB-serial adapter kit. For more details, visit the Shimadzu website.

Specific Gravity Measurement

The specific gravity measurement function is based on the liquid immersion method. By installing the specific gravity measurement kit (optional), the balance can be used as a specific gravity analyzer (refer to page 40).

Response When Weighing Small Quantities

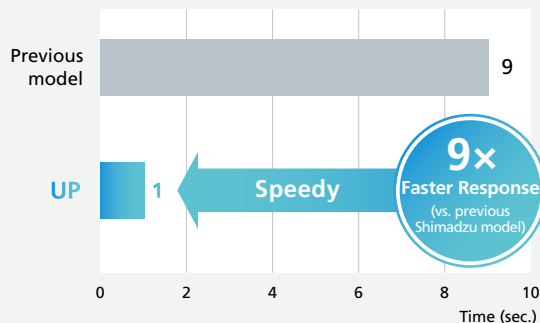
Large-pan model with 0.01 g minimum display value

Small-pan model with 0.001 g minimum display value

Measurement Conditions:

Large-pan model with 0.01 g minimum display value and 0.1 g load

Small-pan model with 0.001 g minimum display value and 0.01 g load



Optional Accessories

Description
STABLO-AP Ionizer Static Electricity Remover
EP-100 Electronic Printer
EP-110 Electronic Printer
RS-232C Cable 25P-9P (1.8 m)
USB-Serial Replacement Kit
AKB-301 Application Keyboard
Windbreak Set *1
Windbreak Set (For large pan) *2
WBC-102 Glass Windbreak
WBC-502 Large Size Windbreak
In-use Protective Cover (3 pcs) (For large-pan models with 0.01 g min. display value)
In-use Protective Cover (5 pcs) (For large-pan models with 0.1 g min. display value)

Description
In-use Protective Cover (5 pcs) (For small-pan model)
In-use Protective Cover (5 pcs) (For display and key part)
Animal Bucket Set (For large-pan models with 0.01 g minimum display value)
Animal Bucket Set (For large-pan models with 0.1 g minimum display value)
SMK-101A Specific Gravity Measurement Kit (For large-pan model) (Up to approximately 2 kg for weighing capacity)
SMK-102 Specific Gravity Measurement Kit (For small-pan model)
IFB-RY1 Relay Output Interface
RY1 Connection Cable
AC Adapter *3

*1 Included as standard with small pan models with 0.001 g minimum display value.

*2 Included as standard with large pan models with 0.01 g minimum display value.

*3 Included as standard with main unit.

Multifunctional Top-Loading Balances

UW/UX Series

[See Products](#) 

Top-loading Balances with UniBloc Technology



UW420S UX420S
UW820S UX820S

UW220H UW620H UW1020H
UW420H UW820H
UX220H UX620H UX1020H
UX420H UX820H

UW4200S UW8200S UW2200H UW4200H UW6200H
UX4200S UX8200S UX2200H UX4200H UX6200H

* The windbreak is removable.

UW Series																				
UX Series																				

UW Series

Model name	UW220H	UW420H	UW620H	UW820H	UW1020H	UW420S	UW820S	UW2200H	UW4200H	UW6200H	UW4200S	UW8200S
Capacity	220 g	420 g	620 g	820 g	1020 g	420 g	820 g	2200 g	4200 g	6200 g	4200 g	8200 g
Minimum Display	0.001 g					0.01 g					0.1 g	
Internal Weight Adjustment Accuracy*1	±2 mg (200 g)	±2 mg (400 g)	±3 mg (600 g)	±4 mg (800 g)	±4 mg (1 kg)	±10 mg (400 g)	±10 mg (800 g)	±20 mg (2 kg)	±20 mg (2 kg)	±30 mg (6 kg)	±100 mg (4 kg)	±100 mg (8 kg)
Pan Size	Approx. W113 × D110 mm						Approx. W176 × D189 mm					
Dimensions	Approx. W191 × D317 × H79 mm											
Weight	Approx. 3.4 kg						Approx. 4.6 kg					
Rated Power Supply	DC 12 V, 0.4 A											
Input Power Supply	For EU type approval models: AC 100 V–240 V, 0.6 A, 50/60 Hz*2 For other models: AC 100 V–240 V, 0.7 A, 50/60 Hz*2											

UX Series

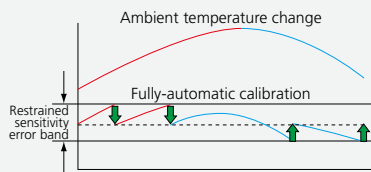
Model name	UX220H	UX420H	UX620H	UX820H	UX1020H	UX420S	UX820S	UX2200H	UX4200H	UX6200H	UX4200S	UX8200S
Capacity	220 g	420 g	620 g	820 g	1020 g	420 g	820 g	2200 g	4200 g	6200 g	4200 g	8200 g
Minimum Display	0.001 g					0.01 g					0.1 g	
Pan Size	Approx. W113 × D110 mm						Approx. W176 × D189 mm					
Dimensions	Approx. W191 × D317 × H79 mm											
Weight	Approx. 2.7 kg						Approx. 2.9 kg					
Rated Power Supply	DC 12 V, 0.4 A											
Input Power Supply	For EU type approval models: AC 100 V–240 V, 0.6 A, 50/60 Hz*2 For other models: AC 100 V–240 V, 0.7 A, 50/60 Hz*2											

*1 Deviation from the nominal value of the reference weight (average value)

*2 The Input Power Supply may change without notice.

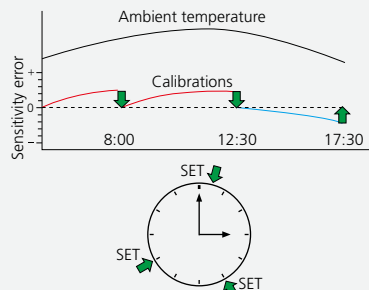
PSC **PSC (Perfect Self-Calibration)**
(UW only)

Automatically calibrates the balance if an ambient temperature change occurs that could affect sensitivity.



Clock-CAL (UW only)

This automatically calibrates the balance at pre-specified times (such as before starting work, during lunch, or after work hours).



Internal Calibration
(UW only)

The balance has built-in motor-driven calibration weights. Sensitivity can be calibrated as needed by a single key press.

ISO Calibration Report

Simply connect an optional printer to automatically print out which balance was calibrated when, and the calibration results. No difficult settings are required. Furthermore, the current date and time can be printed any time during measurement.

CARAT **Carat Measurement**

Results can be displayed in carats when measuring precious stones. Change among many weighing units and functions with a single touch.

Back Light **Backlight LCD**

The backlight LCD display can be clearly read in low-light environments.

H I G O **Checkweighing**

When upper and lower thresholds are set, the balance indicates if the sample weight is within the range (GO), over (HI) or under (LO).

PCS **Piece Counting**

A built-in piece counting function enables balances to be used as parts counters (piece scales).

Specific Gravity **Specific Gravity Measurement**

The specific gravity measurement function is based on the liquid immersion method. By installing the specific gravity measurement kit (optional), the balance can be used as a specific gravity analyzer (refer to page 41).

PC **Computer Connection Function**

Systems can be connected to a computer via an RS-232C cable or using a USB-Serial Replacement Kit. For more details, visit the Shimadzu website.



Data transfer port of UW/UX Series

Optional Accessories

Description
STABLO-AP Ionizer Static Electricity Remover
EP-100 Electronic Printer
EP-110 Electronic Printer
Small Size Windbreak (For models with capacity of 220 g to 1020 g only) (Standard accessory for models with readability of 0.001 g)
Glass Windbreak (For models with capacity of 220 g to 1020 g only)
WBC-102 Glass Windbreak
WBC-502 Large Size Windbreak
Large Size Windbreak (For all models)
SMK-101 Specific Gravity Measurement Kit (For large pan 176 × 189 mm)
SMK-102 Specific Gravity Measurement Kit (For small pan 113 × 110 mm)
Protective In-use Cover for Key Panel and Display (5 pcs)
Small Animal Bucket Set (For large-pan models only)
FSB-102PK Foot Switch (For printing)
FSB-102TK Foot Switch (For taring)
USB-Serial Replacement Kit
RS-232C Cable 25P-9P (1.8 m)
AKB-301 Application Keyboard



WBC-102
Glass Windbreak



WBC-502
Large Size Windbreak



STABLO-AP



AKB-301
Application Keyboard

TW/TX Series

See Products 

The beginning of the standard.
Extremely capable,
and easy to operate.

















TW223L TX223L
TW323L TX323L
TW423L TX423L



TWC623L
TXC623L



TX2202L
TX3202L
TX4202L

TW Series										
TX Series										

TW Series

Model name	TW223L	TW323L	TW423L	TWC623L
Capacity	220 g	320 g	420 g	620 ct (124 g)
Minimum Display	0.001 g			0.001 ct (0.0002 g)
Internal Weight Adjustment Accuracy*1	±2 mg (200 g)	±2 mg (300 g)	±2 mg (400 g)	±-0.002 ct (±0.4 mg) (100 g)
Pan Size	Approx. 110 mm dia.			Approx. 80 mm dia.
Dimensions	Approx. W206 × D291 × H241 mm			
Weight	Approx. 4.2 kg		Approx. 4.1 kg	
Rated Power Supply	DC 12 V, 0.4 A			
Input Power Supply	For EU type approval models: AC 100 V–240 V, 0.32–0.19 A, 50/60 Hz*2 For other models: AC 100 V–240 V, 0.7 A, 50/60 Hz*2			

TX Series

Model name	TX223L	TX323L	TX423L	TX2202L	TX3202L	TX4202L	TXC623L
Capacity	220 g	320 g	420 g	2200 g	3200 g	4200 g	620 ct (124 g)
Minimum Display	0.001 g			0.01 g			0.001 ct (0.0002 g)
Pan Size	Approx. 110 mm dia.			Approx. W167 × D181 mm			Approx. 80 mm dia.
Dimensions	Approx. W206 × D291 × H241 mm			Approx. W200 × D291 × H80 mm			Approx. W206 × D291 × H241 mm
Weight	Approx. 3.8 kg			Approx. 2.8 kg			Approx. 3.8 kg
Rated Power Supply	DC 12 V, 0.4 A						
Input Power Supply	For EU type approval models: AC 100 V–240 V, 0.32–0.19 A, 50/60 Hz*2 For other models: AC 100 V–240 V, 0.7 A, 50/60 Hz*2						

*1 Deviation from the nominal value of the reference weight (average value)

*2 The Input Power Supply may change without notice.

Optional Accessories

Description
EP-100 Electronic Printer
EP-110 Electronic Printer
RS-232C Cable

Description
In-use Protective Cover (5 pcs)
In-use Protective Cover for Display
USB–Serial Replacement Kit
AC Adapter (Included standard with main unit)

Basic Top-Loading Balances

BL Series

[See Products](#)

High-Resolution Balances Made Affordable



BL Series

- Multi-Balance Collect
- Balance Keys
- Analog display
- PCS
- CARAT

Model name	BL-220H	BL-320H	BL-320S	BL-620S	BL-2200H	BL-3200H	BL-3200S
Capacity	220 g	320 g		620 g	2200 g	3200 g	
Minimum Display	0.001 g		0.01 g	0.01 g		0.1 g	
Pan Size	Approx. W100 × D100 mm			Approx. W159 × D126 mm			
Dimensions	Approx. W171 × D243 × H77 mm			Approx. W171 × D243 × H78 mm			
Weight	Approx. 2.2 kg						
Rated Power Supply	DC 12 V, 0.1 A						
Input Power Supply	AC 100 V–240 V, 0.7 A, 50/60 Hz*1						

*1 The Input Power Supply may change without notice.

PCS Piece Counting

A piece counting function enables balances to be used as parts counters (piece scales).

Analog Bar Display

Remaining weighing capacity can be seen by the analog bar graph at a glance.

Optional Accessories

Description
EP-100 Electronic Printer
EP-110 Electronic Printer
In-use Protective Cover
I/O–RS Cable
USB Serial Adapter
Simplified Windshield (Main) *2
Simplified Windshield (Lid) *2
AC Adapter (Included standard with main unit)

*2 Simplified windshield can be used for BL-220H, 320H, 320S. Also, it is included as standard for BL-220H and 320H.



Data transfer port of BL Series

Precision Balances for Heavy Samples

BW-K/BX-K Series

[See Products](#)

The Shimadzu precision platform balances have been engineered with the innovative UniBloc mechanism since 1989. Powerful features support any imaginable weighing application. The BW-K series includes a built-in adjustment weight.



BW12KH

BW-K Series														
BX-K Series														

Model name	BW-K Series					BX-K Series				
	BW12KH	BW22KH	BW32KH	BW32KS	BW52KS	BX12KH	BX22KH	BX32KH	BX32KS	BX52KS
Capacity	12 kg	22 kg	32 kg		52 kg	12 kg	22 kg	32 kg		52 kg
Minimum Display	0.1 g		1 g			0.1 g		1 g		
Internal Weight Adjustment Accuracy*1	±0.3 g (10 kg)	±0.4 g (20 kg)	±0.5 g (30 kg)	±1 g (30 kg)	±1 g (50 kg)	—				
Pan Size	Approx. W347 × D248 mm									
Dimensions	Approx. W382 × D366 × H125 mm					Approx. W360 × D366 × H115 mm				
Weight	Approx. 16.5 kg					Approx. 10.5 kg				
Rated Power Supply	DC 12 V, 0.3 A									
Input Power Supply	AC 100 V–240 V, 0.7 A, 50/60 Hz*2									

*1 Deviation from the nominal value of the reference weight (average value)

*2 The Input Power Supply may change without notice.

Single-Lever CAL

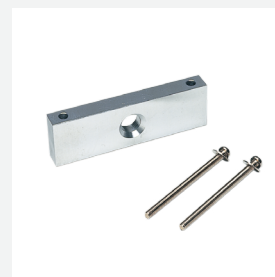
The balance has built-in calibration weights. Sensitivity is calibrated with a simple lever operation. Sensitivity can be calibrated easily, whenever needed.

Optional Accessories

Description
EP-100 Electronic Printer
EP-110 Electronic Printer
FSB-102PK Foot Switch (For printing)
AKB-301 Application Keyboard
USB–Serial Replacement Kit
RS-232C Cable
Below-weigh Hook
AC Adapter (Included as standard with main unit)



AKB-301 Application Keyboard



Below-weigh Hook

Enhanced Support for ISO/GLP/GMP

EP-100/EP-110

[See Products](#)

- Built-in clock
- Customized printing
- Easy communication setup



Note: The automatic setting function cannot be used with models that do not include the PRINT key, such as MOC63u moisture analyzer and MOC-120H moisture analyzer.

Specifications

Model Name	EP-100	EP-110
Display		OLED 128 × 64 Dot Matrix Display Easy-to-understand fluorescent dot matrix display
Date/Time Setting Protection		Password protectable (six-character)
Printing	Paper for printing: Regular paper (does not fade with age) Method: 8-pin reciprocating impact dot matrix Speed: Approx. 1.7 lines/sec. Printer head life: 1 million lines Character size: Approx. W1.7 × H2.6 mm	
Interface	USB B-Type female, RS-232 (D-sub 9-pin male)	
Power Supply	Power consumption: 8 W (while printing) Standby power: 0.5 W (when not printing) Input Power Supply: AC 100 V–240 V 0.7 A 50/60 Hz *1	
Battery	1500 to 2500 mAh capacity rechargeable nickel–metal hydride (NiMH) batteries can be used (four AA cells). Note: Dry cell batteries cannot be used.	
Installation Environment	Temperature: 5 to 45 °C; Humidity: 10 to 80 % No condensation	

*1 The Input Power Supply may change without notice.

Maintenance Parts

Description
Recording Paper
Labeling Paper Rolls
Ink Ribbon
AC Adapter
Connection Cable
Connection Cable (MOC-120H moisture analyzers)

Features unique to EP-110

- Supports GLP/GMP compliance by preventing date/time changes through password protection.
- Enhanced visibility for OLED display
- Powered by rechargeable batteries

Printout Samples

	Normal Mode	Statistical Calculation Mode
Manufacturer Information	Shimadzu Corporation	Shimadzu Corporation
Device Name	Model: AP225W	Model: AP225W
Serial No.	S/N: 0000000000	S/N: 0000000000
Sample Name (ID)	Device ID: 0000	Device ID: 0000
Date	Date: 2022/12/28	Date: 2022/12/28
Measurement Start Time	Start Time: 13:52:52	Start Time: 15:33:35
Measurement Values	001: 100.00029g 002: 100.00038g 003: 100.00037g	001: 100.00035g 002: 100.00032g 003: 100.00032g
Measurement End Time	End Time: 13:53:04	
Signature Field	Signature:	
		<STAT> N= 3 T= 300.00099 g MAX= 100.00035 g MIN= 100.00032 g RNG= 0.00003 g MEAN= 100.00030 g SD= 0.000017 g CV%= 0.00 % End Time: 15:33:45 Signature:

Output Items

Item	Symbol	Remarks
Title (Header)		Manufacturer information, device name, serial number (S/N), date, measurement start time, Lot No., Sample No., User name*2
Number of samples	N	
Total value	T	
Maximum value	MAX	
Minimum value	MIN	
Range	RNG	MAX – MIN
Mean value	MEAN	T / N
Standard deviation	SD	$\sqrt{\sum(Xi-MEAN)^2/(N-1)}$
Coefficient of variation	CV	(SD / MEAN x 100)%
Data suffix (footer)		Measurement end time and signature field

*2 AP Series only

Moisture Analyzer

MOC63u

See Products 

Makes Moisture Content Measurements Quick and Easy

- The moisture content is found by heating the sample with the built-in halogen heater to drive out the moisture.
- The measurement procedure is simple. Just close the heater cover to start the measurement (automatic starting mode).
- Measurements are faster than the loss on drying method using a dryer.
- A USB connector makes connecting to a PC easy.
- Equipped with the UniBloc aluminum block mass sensor.



MOC63u



Model Name		MOC63u
Capacity	Max. Sample Quantity	60 g
	Min. Sample Quantity	0.02 g
Minimum Display	Weight	0.001 g
	Moisture Content	0.01 %
Repeatability *1		0.15 % (2 g), 0.05 % (5 g), 0.02 % (10 g)
Heat Source	Method	Halogen (straight tube)
	Power	Rated at 400 W
Temperature Settings		50 to 200 °C (1 °C interval) (up to 1 hour for settings over 180 °C)
Display		Backlit LCD
Pan Size		Approx. 95 mm dia.
Dimensions		Approx. W202 × D336 × H157 mm
Weight		4.2 kg
Rated Power		430 VA
Ambient Temperature		5 to 40 °C, relative humidity of 85 % max.
Measurement Modes		Standard drying mode (Automatic ending/timed ending) Rapid drying mode (Automatic ending/timed ending) Slow drying mode (Automatic ending/timed ending) Step (3-stage) drying mode (Automatic ending/timed ending)
Time Settings		1 to 240 min, or continuous (up to 12 hours)
External Output		USB Data I/O printer (EP-100/EP-110) output RS-232C (D-sub 9P)
Storage of Measurement Conditions		10 sets
Data Memory		100 items
Standard Accessories		Sample pans (3 aluminum pans), pan holder, windbreak, board, aluminum sheets (50), pan handler, power cable, spare fuses (2), protective display cover, hexagonal wrench

*1 The repeatability (standard deviation) value is from a standard measurement (sample: sodium tartrate dihydrate). This value is not guaranteed for all samples, environments, and measurement conditions.

Optional Accessories

Description
EP-100 Electronic Printer
EP-110 Electronic Printer
Protective Display Cover (5 pcs)
Aluminum Pans (Disposable) (50 pcs)
Fiberglass Sheets (For liquid sample measurements) (100 pcs)
Temperature Calibration Kit
Sample Pan (Stainless steel) (5 pcs)
Sample Pan (Aluminum) (5 pcs)
RS-232C Cable
USB Cable Set
Sample Pan Handler (Stainless steel)
Halogen Heater (For replacement) *2
Power Cable

*2 The halogen heater can be removed and replaced by the user.
Note: For delivery related matters, contact your Shimadzu representative.

Warning

- Use this balance to heat samples to evaporate moisture for measurement.
- The built-in heater will be hotter than the set temperature.
- Samples must not be measured if there is a risk of an explosion or fire, or a dangerous chemical reaction from heating.



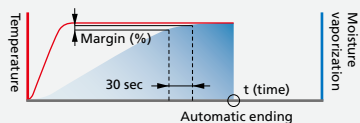
This product is certified as Shimadzu's Eco-Products Plus. Energy savings: Power consumption reduced by 30% compared with a conventional Shimadzu product.

Five measurement modes support a wide variety of samples.

Ending Modes

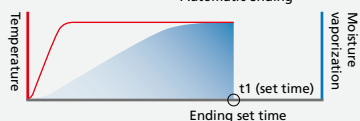
Automatic Ending Mode

This automatically ends measurement when the moisture change (% margin) over 30 seconds drops below a set value.



Timed Ending Mode

This automatically ends measurement after a preset amount of time (t1).

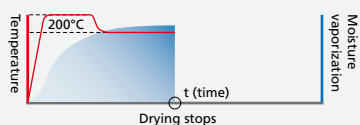


The sample is easy to see!
Wide observation window

Alternate Drying Modes

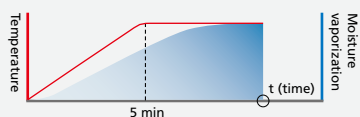
Rapid Drying Mode

The sample is dried at the highest temperature for the initial drying stage, and when the moisture has been reduced, it returns to the set temperature, shortening the measurement time.



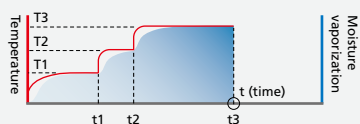
Slow Drying Mode

This gently heats samples that might form a surface film or are prone to degrading at high temperatures.



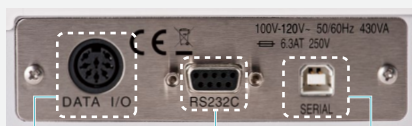
Step Drying Mode

Drying conditions are changed step by step for samples that contain a lot of moisture, such as surface water or crystallization water.



Computer Connection Function

A built-in USB connector allows connecting to a PC. It can be used in conjunction with the Balance Keys software. For USB port connections, check the Shimadzu website or contact your Shimadzu representative.



Compatible with EP-100/EP-110 printers.

Built-in RS-232C interface is standard.

Equipped with USB interface. Importing data to a PC is easy.

Printout Sample

• Sample Measurement Results Output

```

SHIMADZU CORP.
TYPE MOC63U
SN D209400009
ID 0000
CODE 0040
DATE 18-12-17
TIME 16:27
PNO. 0
UNIT M/W
MODE AUTO
TEMP 160C
STOP 0.05 %

Wet W(g) 5.161
TIME M/W(%)
00:00:00 0.00
00:02:00 4.40
00:04:00 7.39
*00:05:35 8.02

Dry W(g) 4.747
    
```

- Model
- Serial no.
- Instrument ID
- Sample code
- Date
- Time
- Program no.
- Measurement reference
- Measurement conditions
- Drying temperature
- Ending conditions
- Mass before measurement
- Progressive measurements
- Elapsed measurement time
- Mass after measurement

Using the EP-100/EP-110

Moisture Analyzer

MOC-120H

See Products 

Measure the Moisture Content of Large Samples or Large Sample Quantities.

- The moisture content is found by heating the sample with the built-in infrared heater.
- The sample pan measures 130 mm in diameter, which is optimal for both large samples and large amounts of samples.
- Importing results to a PC is easy (equipped with the Balance Keys function).
- Equipped with the UniBloc aluminum block mass sensor.



MOC-120H



Measurement Method	Infrared heating/dry mass measurement
Pan Size	Approx. 130 mm dia.
Minimum Weight Displayed	0.001 g
Moisture Content Measurement Range	0.01 to 100.00 %
Minimum Moisture Content Displayed	0.01 %
Maximum Sample Quantity	120 g
Measurement Modes	Automatic operation mode, Timed operation mode, High-speed drying mode, Low-speed drying mode
Drying Heat Source	Medium wave infrared quartz heater
Temperature Settings Range	30 to 200 °C (1 °C steps)
Dimensions and Weight	Approx. W220 × D415 × H190 mm, 5.2 kg
Operational Temperature and Humidity Range	5 to 40 °C, relative humidity of 85 % max.
Required Power Supply	100 to 120/220 to 240 VAC, 640 W max.
Accessories	Sample pans (2), pan holder, windbreak, aluminum sheets (20), pan handler (2), power cable, spare fuses (2), spoon set

Optional Accessories

Description
EP-100 Electronic Printer *1
EP-110 Electronic Printer *1
RS-232C Cable
Sample Pan
Aluminum Sheets (500 pcs)
Temperature Calibration Kit *2
Protective Display Cover (5 pcs)

*1 A separate printer connection cable is required.

*2 Temperature calibration may be necessary depending on the measurement sample and the measurement conditions. Temperature calibration makes it possible to more accurately control the drying temperature of the measurement sample.

Warning

- Use this balance to heat samples to evaporate moisture for measurement.
- The built-in heater will be hotter than the set temperature.
- Samples must not be measured if there is a risk of an explosion or fire, or a dangerous chemical reaction from heating.

Printout Sample from Optional Printer

Example of Measurement Results Output

```

~~~~~
Maker : SHIMADZU CORP
Model : MOC-120H
S/N : D207300000
ID : ABCD-123
Date : 2005.08.08
Condition No : 0
Unit : Wet Base Moist.
Temp. mode : Sample plate temp.*
Mode : Auto
Setting Temp. : 110C
Auto Stop Cond. : 0.05%

Code Time Wet-Mass Dry-Mass Moist.(%)
A-00 13:03 5.0245 4.4140 12.15
A-01 13:31 5.5402 5.3269 3.85
A-02 14:02 5.1942 4.7745 8.08
A-03 14:33 4.8514 3.9481 18.62
A-04 15:00 5.2647 4.9093 6.75
A-05 15:29 4.7414 4.0335 14.93
A-06 16:00 5.3815 5.3465 0.65

Signature :
~~~~~
    
```

Company name
 Model
 Serial No.
 Instrument ID
 Measurement date/time
 Measurement conditions storage area
 Measurement reference
 Temperature Setting Mode
 Measurement mode
 Drying temperature
 Automatic ending conditions
 Sample Code
 Measurement Time
 Wet-Mass = Undried Mass (g)
 Dry-Mass = Dry Mass (g)
 Measurement value (%)
 Signature

AP Series

[See Products](#)

When combined with an optional specific gravity measurement kit, balances can be used to measure specific gravity. Operations are simplified by a text-based navigation function. By using sinkers, the specific gravity of liquid can be measured as well. This makes it easy to measure the specific gravity of metals, rubbers, plastics, and other materials.



SMK-601 Specific Gravity Measurement Kit



Model Name	W-AD Series					
	AP225W-AD	AP135W-AD	AP225WD-AD	AP125WD-AD	AP324W-AD	AP224W-AD
Capacity	220 g	135 g	220 g / 102 g	120 g / 52 g	320 g	220 g
Minimum Display	0.01 mg		0.1 mg / 0.01 mg		0.1 mg	
Pan Size	Approx. 91 mm dia.					
Dimensions	Approx. W215 × D411 × H346 mm (incl. power supply unit)				Approx. W215 × D367 × H346 mm	
Weight	Approx. 9.7 kg				Approx. 8.6 kg	

Model Name	W Series						X Series			Y Series			
	AP225W	AP135W	AP125WD	AP225WD	AP124W	AP224W	AP324W	AP124X	AP224X	AP324X	AP124Y	AP224Y	AP324Y
Capacity	220 g	135 g	120 g / 52 g	220 g / 102 g	120 g	220 g	320 g	120 g	220 g	320 g	120 g	220 g	320 g
Minimum Display	0.01 mg		0.1 mg / 0.01 mg					0.1 mg					
Pan Size							Approx. 91 mm dia.						
Dimensions	Approx. W213 × D411 × H345 mm (incl. power supply unit)				Approx. W213 × D367 × H345 mm								
Weight	Approx. 7.9 kg				Approx. 7.0 kg				Approx. 6.5 kg				

Specific Gravity Measurement Kit

Model	SMK-601
-------	---------

Note: The optional liquid density sinker is required for liquid density measurements.

Optional Accessories

Description
Liquid Density Sinker
Petri Dish, Square

Pages 37–41 common

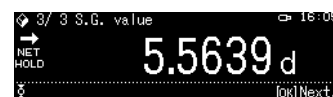
Quick and Easy Specific Gravity Measurement



1 First measure the in-air weight.



2 Then place it in the container filled with water, as instructed on the screen.



3 The specific gravity value is displayed using simple steps.

AU Series

[See Products](#)

Attach the optional SMK-401 Specific Gravity Measurement Kit to a balance in the AU series, and set the balance to specific gravity measurement mode. You can then use the balance as a specific gravity analyzer, capable of automatically calculating and displaying specific gravity values. Liquid density can also be measured by using an optional sinker.

Various balances are available, including a semi-micro (0.01 mg) model. Choose the model best suited to the sample amount and required precision for your application.

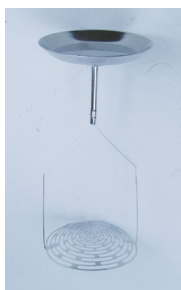


AUW Series + SMK-401

Two types of weighing pans are included as standard.



For standard sample



For floating sample

Model Name	AUW-D Series		AUW Series			AUX Series			AUY Series	
	AUW220D	AUW120D	AUW320	AUW220	AUW120	AUX320	AUX220	AUX120	AUY220	AUY120
Capacity	220 g / 82 g	120 g / 42 g	320 g	220 g	120 g	320 g	220 g	120 g	220 g	120 g
Minimum Display	0.1 mg / 0.01 mg		0.1 mg							
Pan Size	Approx. 80 mm dia.									
Dimensions	Approx. W217 × D356 × H338 mm									
Weight	Approx. 7 kg									

Specific Gravity Measurement Kit

Model	SMK-401
-------	---------

Note: The optional liquid density sinker is required for liquid density measurements.

Optional Accessories

Description
Liquid Density Sinker
Petri Dish, Square

AT-R Series

[See Products](#)

Attach the optional SMK-501 Specific Gravity Measurement Kit to a balance in the AT-R series, and set the balance to specific gravity measurement mode. You can then use the balance as a specific gravity analyzer, capable of automatically calculating and displaying specific gravity values. Liquid density can also be measured by using an optional sinker.

Various balances are available. Choose the model best suited to the sample amount and required precision for your application.



SMK-501 Specific Gravity Measurement Kit



AT-R Series + SMK-501

Model Name	ATX-R Series				ATY-R Series			
	ATX324R	ATX224R	ATX124R	ATX84R	ATY324R	ATY224R	ATY124R	ATY64R
Capacity	320 g	220 g	120 g	82 g	320 g	220 g	120 g	62 g
Minimum Display	0.1 mg							
Pan Size	Approx. 91 mm dia.							
Dimensions	Approx. W213 × D356 × H338 mm							
Weight	Approx. 6.2 kg				Approx. 6.0 kg			

Specific Gravity Measurement Kit

Model	SMK-501
-------	---------

Note: The optional liquid density sinker is required for liquid density measurements.

Optional Accessories

Description
Liquid Density Sinker
Petri Dish, Square

UP Series

[See Products](#)

Attach the optional SMK-101A/102 Specific Gravity Measurement Kit to a balance in the UP series, and set the balance to specific gravity measurement mode. The balance then functions as a specific gravity analyzer that automatically calculates and displays specific gravity values.

Liquid density can also be measured by using an optional sinker.

Various balances are available. Choose the model best suited to the sample amount and required precision for your application.

The large submersible pan makes it easy to measure bulky samples.



UP Series + SMK-101A

Large-pan Models

Model Name	UP2202Y	UP4202Y	UP6202Y	UP4201Y	UP8201Y	Models with built-in calibration weights				
						UP2202X	UP4202X	UP6202X	UP4201X	UP8201X
Capacity	2200 g	4200 g	6200 g	4200 g	8200 g	2200 g	4200 g	6200 g	4200 g	8200 g
Minimum Display	0.01 g			0.1 g		0.01 g			0.1 g	
Pan Size	Approx. 176 × 189 mm									

Specific Gravity Measurement Kit

Model	SMK-101A ^{*1*2} for large pan type
-------	--

Small-pan Models

Model Name	UP223Y	UP423Y	UP623Y	UP823Y	UP1023Y	UP422Y	UP822Y	Models with built-in calibration weights						
								UP223X	UP423X	UP623X	UP823X	UP1023X	UP422X	UP822X
Capacity		420 g	620 g	820 g	1020 g	420 g	820 g		420 g	620 g	820 g	1020 g	420 g	820 g
Minimum Display		0.001 g			0.01 g			0.001 g			0.01 g			
Pan Size	Approx. 113 × 110 mm													

Specific Gravity Measurement Kit

Model	SMK-102 ^{*1*3} for small pan type	SMK-102 ^{*1*3} for small pan type
-------	---	---


*1 The optional liquid density sinker is required for liquid density measurements.

*2 For UP-X/UP-Y series large-pan (176 × 189 mm) models. The actual capacity is 100 g less than the capacity of the balance.

*3 For UP-X/UP-Y series small-pan (113 × 110 mm) models. The actual capacity is 290 g less than the capacity of the balance. Cannot be attached to the UP223X/UP223Y.

Optional Accessories

Description
Liquid Density Sinker for SMK-101A/102

In addition, balances with the  mark are equipped with a specific gravity calculation function, so they can be used for specific gravity measurement.

UW/UX Series

[See Products](#)

Attach the optional SMK-101/102 Specific Gravity Measurement Kit to a balance in the UW/UX series, and set the balance to specific gravity measurement mode. The balance then functions as a specific gravity analyzer that automatically calculates and displays specific gravity values. Liquid density can also be measured by using an optional sinker.

Various balances are available. Choose the model best suited to the sample amount and required precision for your application.

The large submersible pan makes it easy to measure bulky samples.



UW/UX Series + SMK-101

UW Series

Model Name	Models with built-in calibration weights											
	UW220H	UW420H	UX620H	UX820H	UX1020H	UX420S	UX820S	UX2200H	UX4200H	UX6200H	UX4200S	UX8200S
Capacity		420 g	620 g	820 g	1020 g	420 g	820 g	2200 g	4200 g	6200 g	4200 g	8200 g
Minimum Display		0.001 g	0.001 g	0.001 g	0.001 g	0.01 g	0.01 g	0.01 g	0.01 g	0.01 g	0.1 g	0.1 g
Pan Size		Approx. 113 × 110 mm						Approx. 176 × 189 mm				

UX Series

Model Name	UX220H	UX420H	UX620H	UX820H	UX1020H	UX420S	UX820S	UX2200H	UX4200H	UX6200H	UX4200S	UX8200S
Capacity		420 g	620 g	820 g	1020 g	420 g	820 g	2200 g	4200 g	6200 g	4200 g	8200 g
Minimum Display		0.001 g	0.001 g	0.001 g	0.001 g	0.01 g	0.01 g	0.01 g	0.01 g	0.01 g	0.1 g	0.1 g
Pan Size		Approx. 113 × 110 mm						Approx. 176 × 189 mm				

Specific Gravity Measurement Kit

Model	SMK-102 *1*3	SMK-101 *1*2
	for small pan type	for large pan type


*1 The optional liquid density sinker is required for liquid density measurements.

*2 For UW/UX series large-pan (176 × 189 mm) models. The actual capacity is 100 g less than the capacity of the balance.

*3 For UW/UX series small-pan (113 × 110 mm) models. The actual capacity is 290 g less than the capacity of the balance. Cannot be attached to the UW/UX 220H.

Optional Accessories

Description
Liquid Density Sinker for SMK-101/102

In addition, balances with the  mark are equipped with a specific gravity calculation function, so they can be used for specific gravity measurement.

Quick, Stable Measurements of Animal Weight

UP Series

[See Products](#)

Attach an optional animal bucket to a UP series balance and set the balance to animal mode. The balance can now be used as a user-friendly animal balance.



Bucket for small animals

Deep round bucket

Rectangular bucket

UP-X Series	
UP-Y Series	

UP-X/UP-Y Series

Model Name	Models with built-in calibration weights					Standard models				
	UP2202X	UP4202X	UP6202X	UP4201X	UP8201X	UP2202Y	UP4202Y	UP6202Y	UP4201Y	UP8201Y
Capacity	2200 g	4200 g	6200 g	4200 g	8200 g	2200 g	4200 g	6200 g	4200 g	8200 g
Minimum Display	0.01 g			0.1 g		0.01 g			0.1 g	
Dimensions	Approx. W191 × D317 × H82 mm			Approx. W191 × D317 × H79 mm		Approx. W191 × D317 × H82 mm			Approx. W191 × D317 × H79 mm	
Weight	Approx. 4.6 kg					Approx. 2.9 kg			Approx. 2.9 kg	

Bucket

Small Animal Bucket	Shape: round / Size: bottom 110 dia. × top 200 dia. × height 130 mm
Deep Round Bucket	Shape: round / Size: bottom 155 dia. × top 195 dia. × height 200 mm
Rectangular Bucket *1	Shape: rectangular / Size: bottom 250 × 210 mm; top 290 × 250 mm; height 150 mm

*1 The rectangular bucket can only be attached to the UP8201X and UP8201Y.

Note: The bucket can also be used with the UW/UX series.



Clock-CAL

This automatically calibrates the balance at pre-specified times (such as before starting work, during lunch, or after work hours).



Internal Calibration

The balance has built-in motor-driven calibration weights. Sensitivity can be calibrated as needed with a single key press.



Animal Measurement Mode

- When the animal is unloaded, residual weight from excretions and other materials is automatically subtracted and the display is set to zero. The next animal can be loaded without pressing the TARE button, which increases efficiency.
- Specially developed software allows quick, stable measurement of the weight of moving animals.

Three movement-detection levels can be selected according to the animal's activity level.

Animals can be measured whether they are docile or extremely active.

When the animal is placed on the balance and the stability mark appears, the weight is output automatically.

Increases efficiency by eliminating needless operations.

When the animal is unloaded, residual weight from excretions and other materials is automatically subtracted and the display is set to zero.

The next animal can be loaded without pressing the TARE button, which increases efficiency.

Quick, Stable Measurements of Animal Weight

BW-K/BX-K Series

[See Products](#)

Attach an optional animal bucket to a BW-K/BX-K series balance and set the balance to animal mode. The balance can now be used as a user-friendly animal balance.



BW-K Series															
BX-K Series															

BW-K/BX-K Series

Model Name	Models with built-in calibration weights					Standard models				
	BW12KH	BW22KH	BW32KH	BW32KS	BW52KS	BX12KH	BX22KH	BX32KH	BX32KS	BX52KS
Capacity*1 *2	12 kg	22 kg	32 kg		52 kg	12 kg	22 kg	32 kg		52 kg
Minimum Display	0.1 g		1 g			0.1 g		1 g		
Dimensions	Approx. W382 × D366 × H125 mm									
Weight	Approx. 16.5 kg					Approx. 10.5 kg				

*1 When an animal small bucket is attached, the capacity will be reduced about 2 kg from the value indicated.
 *2 When an animal medium bucket is attached, the capacity will be reduced about 6 kg from the value indicated.

Bucket

Small Bucket (mainly suited to rabbits)	Shape: rectangular / Size: bottom 305 × 215 mm; top 335 × 245 mm; height 215 mm
Medium Bucket (mainly suited to small dogs)*3	Shape: rectangular / Size: bottom 335 × 245 mm; top 445 × 295 mm; height 345 mm

*3 The bucket cannot be attached to the BW12KH or BX12KH.

Animal Measurement Mode

- Models with a range of capacities are available. Ideal for weighing mid-size animals such as rabbits and small dogs.
- Specially developed software allows quick, stable measurement of the weight of moving animals.
- When the animal is unloaded, residual weight from excretions and other materials is automatically subtracted and the display is set to zero. The next animal can be loaded without pressing the TARE button, which increases efficiency.

Optional Accessories for the UP-X/UP-Y & UW/UX & BW-K/BX-K

Description
EP-100 Electronic Printer
EP-110 Electronic Printer
RS-232C Cable
USB-Serial Replacement Kit



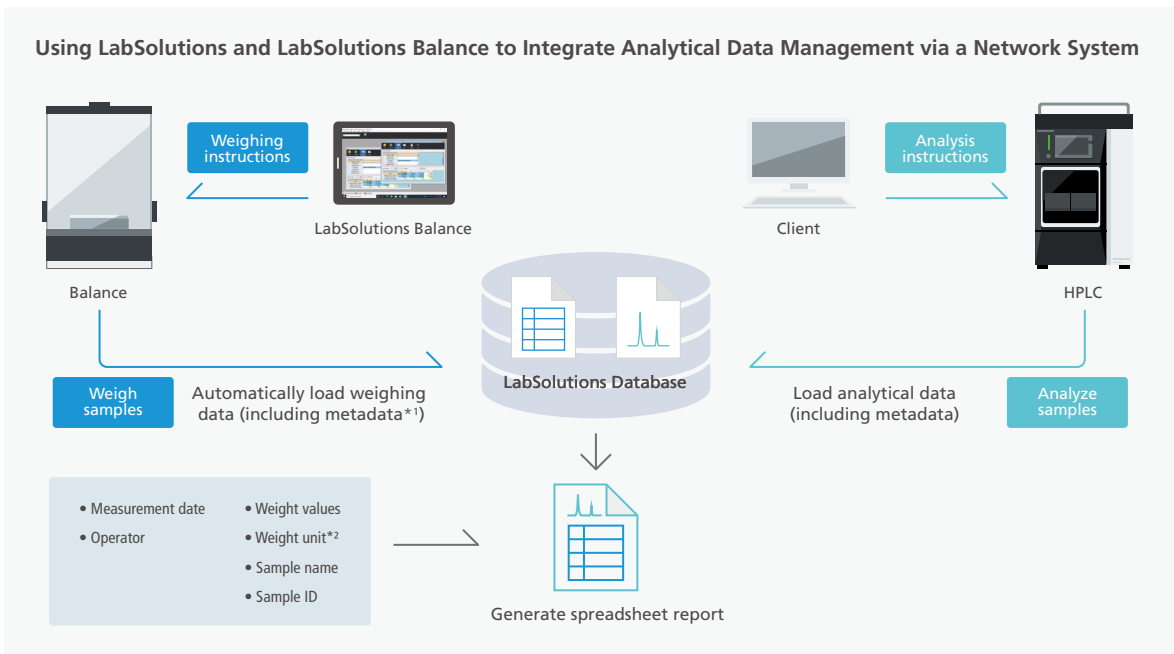
For Customers at Pharmaceutical Companies — ER/ES Regulatory Compliance — LabSolutions Balance

[See Products](#) 

In recent years, data tampering has caused a decline in the reliability of measurement data. To ensure the reliability of measurement data, as data integrity, it is important to retain not only numeric measurement results, but also other measurement information, such as who measured the data, when, using which instruments, and under what conditions. Information about the operations involved is also important, including information about transcribing measurement values. Such information about measurements is referred to as metadata, such that measurement results are considered reliable (with data integrity ensured) only if they include corresponding metadata. The same applies to data measured using an analytical balance. LabSolutions Balance is software designed for customers that need to ensure the integrity of analytical balance data in the same manner as it pertains to data from LC, GC, and other analytical instruments.

LabSolutions Balance Functionality

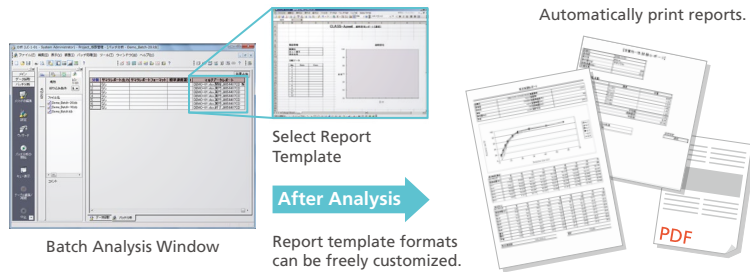
- LabSolutions Balance eliminates the need to enter weighing data manually and the risk of transcription errors. All weighing data is saved in a safe database.
- A spreadsheet report of tamper-proof weighing data and analytical data is automatically created.
- Spreadsheet reports can be customized to customer requirements, such as by combining weighing data with HPLC or other analytical results for system suitability tests, content uniformity tests, or elution tests.



Integrated Report Creation Function*3 Combines Analysis Results from HPLC and Weighing Results from a Balance

Creation of Report Template

Enables creating the report by reading sample data and confirming the sample report at the same time.

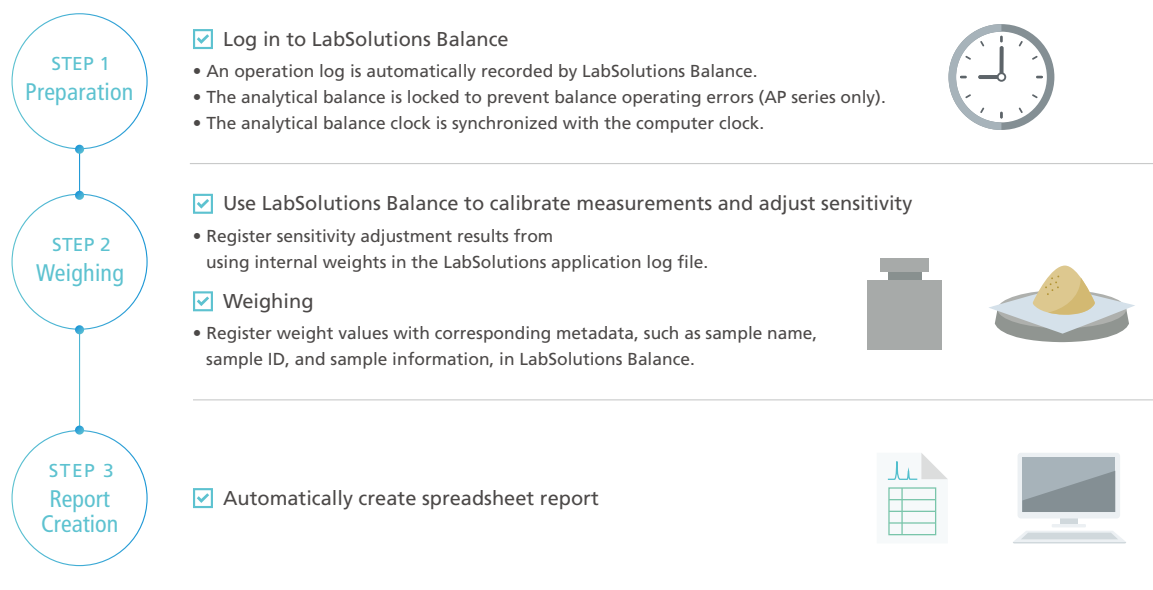


*1 Metadata refers to information about corresponding data, such as measurement date/time and sample information.

*2 LabSolutions Balance Ver. 1.0.5 or later

*3 Multi-data report creation (optional) is necessary to use this function.

Weighing Process Flow Using LabSolutions Balance



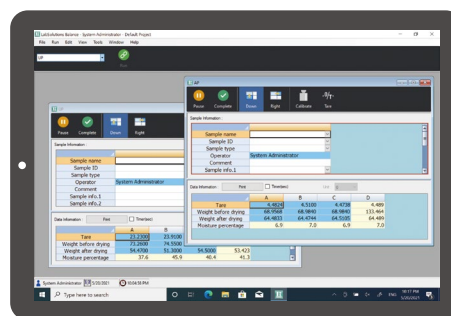
Wireless Networking Capability and Tablet Computer Support Enable Convenient Operation in Confined Spaces

Tablet computer compatibility (with wireless networking*4) is convenient for weighing rooms or other locations with limited space.

Weighing data can be transmitted or saved via the wireless network. Desktop computers are also supported.

Key Specifications

OS	Windows® 11 Pro
Compatible Analytical Balance Models	AP, AU, AT-R, AT, UP, UW/UX, and BW-K/BX-K series
Other Functionality	Simultaneous connection of up to two analytical balances, PDF file creation, and optional LIMS interface supported



Windows® tablet computer (functionality verified using Surface Pro 10)

*4 A wireless router and serial device server are required for using wireless networking functionality.

Balance Data Collection Software




Multi-Balance Collect / Balance Keys

Features

Multi-Balance Collect and Balance Keys software run on Windows®. Directly importing balance data into a PC using these free software tools eliminates transcription errors, improves work efficiency, and increases data reliability.

Multi-Balance Collect can also collect data continuously at fixed intervals. It is recommended when you want to record changes over time, such as weight changes due to evaporation, on multiple balances.

Accessories for Shimadzu Balances

	Analytical Balances				Electronic Balances				Precision Platform Balances	Basic Top-Loading Balances		Certified Scales and Balances	Moisture Analyzer		
	AP	AU	ATX-R ATY-R	ATX*1 ATY*1	UP-X UP-Y	UW*1 UX *1	TW TX	TXB*1	BW-K BX-K	BL	ELB*1	UW-V	MOC63u	MOC-120H	
Printer															
EP-100															
EP-110	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Accessory															
AP Holder	✓*2	✓	✓	✓											
Multi-Stand	✓*3	✓	✓	✓											
Multi Rack	✓	✓	✓	✓											
Anti-glare Canopy Plate (For Analytical Balance)	✓	✓	✓	✓											
RS-232C Interface															
I/O-RS cable 		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
USB-Serial replacement kit with RS-232C cable		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓*5	
	AP	AU	ATX-R ATY-R	ATX*1 ATY*1	UP-X UP-Y	UW*1 UX *1	TW TX	TXB*1	BW-K BX-K	BL	ELB*1	UW-V	MOC63u	MOC-120H	
Windbreak															
WBC-102 Windbreak Designed for UP-X/UP-Y and UW/UX series models with a maximum capacity of 1020g					✓	✓						✓			
WBC-502 Large Windbreak For UP-X/UP-Y and UW/UX Series					✓	✓						✓			
Application keyboard															
AKB-301 For single-point calibration, quantity measurement, threshold setting for pass/fail judgment, and other numerical configurations		✓			✓	✓			✓			✓			
Foot switch															
for printing	FSB-102PK	✓			✓	✓			✓						
for tare	FSB-102TK	✓			✓	✓			✓						
		AP	AU	ATX-R ATY-R	ATX*1 ATY*1	UP-X UP-Y	UW*1 UX *1	TW TX	TXB*1	BW-K BX-K	BL	ELB*1	UW-V	MOC63u	MOC-120H
Specific gravity measurement kit															
	SMK-101A				✓										
	SMK-101						✓						✓		
	SMK-102					✓	✓						✓		
	SMK-201											✓			
	SMK-401		✓												
	SMK-501			✓											
	SMK-601	✓													

*1 The unit is a discontinued product.

*2 Included as standard with AP W-AD ex/W ex Series, AP225W-AD/AP225W models

*3 Included as standard with 0.01 mg models of AP W-AD ex/W ex/W-AD series only

*4 To connect to a computer, a separate RS-232C cable is required.

*5 USB serial adapter and RS-232C cable for MOC are needed.

Optional Accessories List

Balances	Optional accessories
AP W-AD ex AP W ex AP W-AD AP W/AP X AP Y	STABLO-AP Ionizer Static Electricity Remover
	Internal Windbreak Plate (for W ex/W/X/Y Series) *1
	Internal Windbreak Plate (for W ex/W/X/Y Series 0.1 mg)
	Internal Windbreak Plate Set (for W ex/W/X/Y Series)
	SMK-601 Specific Gravity Measurement Kit
	AC Adapter (for W ex/W/X/Y Series) *2
	AC Adapter (for W-AD ex/W-AD Series Balances) *2
	AC Adapter (for W-AD ex/W-AD Series STABLO-AP Ionizers) *2
	Display Protective Cover (Set of 5)
	USB Cable Assembly (2 m) with Core
I/O-RS Adapter Cable (for Connecting EP-80/90)	
AUW-D AUW/AUX/AUY ATX/ATY *9 Common options	RS-232C Cable (1.8 m)
	RS-232C Cable (3.0 m)
	RS-232C Cable (4.5 m)
	AC Adapter *2
AUW-D AUW/AUX/AUY	USB-Serial Replacement Kit
	SMK-401 Specific Gravity Measurement Kit
	Protective Cover (5 pc set)
	AKB-301 Application Keyboard
	FSB-102PK Foot Switch
ATX-R/ATY-R	USB Cable Set
	SMK-501 Specific Gravity Measurement Kit
	Protective Cover (5 pc set)
	AC Adapter *2
ATX/ATY *9	I/O-RS Cable
	USB-Serial Replacement Kit
	AC Adapter *2
	Protective Cover (5 pc set)
TW/TX/ TWC/TXC/ TXB *10	RS-232C Cable
	USB-Serial Replacement Kit
	AC Adapter *2
	In-use Protective Cover (5 pcs)
	In-use Protective Cover for Display
UP-X/UP-Y UW/UX *11 Common options	Windbreak Set *3
	Windbreak Set (for large pan) *4
	WBC-102 Glass Windbreak
	WBC-502 Large Size Windbreak
	In-use Protective Cover (3 pcs) (For Large-Pan Models with 0.01 g Min. Display Value)
	In-use Protective Cover (5 pcs) (For Large-Pan Models with 0.1 g Min. Display Value)
	In-use Protective Cover (5 pcs) (For Small-Pan Model)
	In-use Protective Cover (5 pcs) (For Display and Key Part)
	Animal Bucket Set (for Large-Pan Models with 0.01 g Minimum Display Value)
	Animal Bucket Set (for Large-Pan Models with 0.1 g Minimum Display Value)
	SMK-101A Specific Gravity Measurement Kit (For UP model Large-Pan Model) (Up to approximately 2 kg for weighing capacity)
	SMK-101 Specific Gravity Measurement Kit (For UWUX model Large-Pan Model) (Up to approximately 2 kg for weighing capacity)
	SMK-102 Specific Gravity Measurement Kit (For Small-Pan Model)
	FSB-102PK Foot Switch (For printing)
	FSB-102TK Foot Switch (For taring)
	RS-232C Cable (1.8m)
	RS-232C Cable (3.0m)
	RS-232C Cable (4.5m)
	USB-Serial Replacement Kit
AKB-301 Application Keyboard	
AC Adapter *2	

Balances	Optional accessories
BW-K/BX-K	AC Adapter *2
	Below-weigh Hook
BL	I/O-RS Cable
	USB Serial Adapter
	In-use Protective Cover (5 pcs)
	Simplified Windshield (Main) *6
	Simplified Windshield (Lid) *6
	AC Adapter *2
ELB *12	I/O-RS Cable
	USB Serial Adapter
	Below-weigh Hook (Except for ELB12K)
	Carrying Case
	In-use Protective Cover (5 pcs)
	SMK-201 Specific Gravity Measurement Kit (Cannot be used with small-pan models)
	AC Adapter *2
MOC63u	Protective Display Cover (5 pcs)
	Aluminum Pans (Disposable) (50 pcs)
	Fiberglass Sheets (For liquid sample measurements) (100 pcs)
	Temperature Calibration Kit
	Sample Pan (Stainless steel) (5 pcs)
	Sample Pan (Aluminum) (5 pcs)
	RS-232C Cable
	USB Cable Set
	Sample Pan Handler (Stainless steel)
	Halogen Heater (For replacement) *7
	Power Cable *2
MOC-120H	RS-232C Cable
	USB Serial Adapter
	Sample Pan
	Aluminum Sheets (500 pcs)
	Temperature Calibration Kit *8
	Protective Display Cover (5 pcs)
EP-100 EP-110	Recording Paper (10 pc set)
	Labeling Paper Rolls (10 pc set)
	Ink Ribbon (5 pc set)
	AC Adapter *2
	Connection Cable *2
Connection Cable (MOC-120H moisture analyzers)	

*1 Included as standard with 0.01 mg models of AP W ex/W series only.

*2 Included as standard with main unit.

*3 Included as standard with small-pan models with 0.001 g minimum display value.

*4 Included as standard with large-pan models with 0.01 g minimum display value.

*5 Simplified windshield can be used for BL-220H, 320H, 320S. Also, it is included as standard for BL-220H and 320H.

*6 The halogen heater can be removed and replaced by the user. For delivery related matters, contact your Shimadzu representative.

*7 Temperature calibration may be necessary depending on the measurement sample and the measurement conditions. Temperature calibration makes it possible to more accurately control the drying temperature of the measurement sample.

*8 The ATX/ATY main unit is a discontinued product.

*9 The TXB main unit is a discontinued product.

*10 The UW/UX main unit is a discontinued product.

*11 The ELB main unit is a discontinued product.

Physical Dimensions

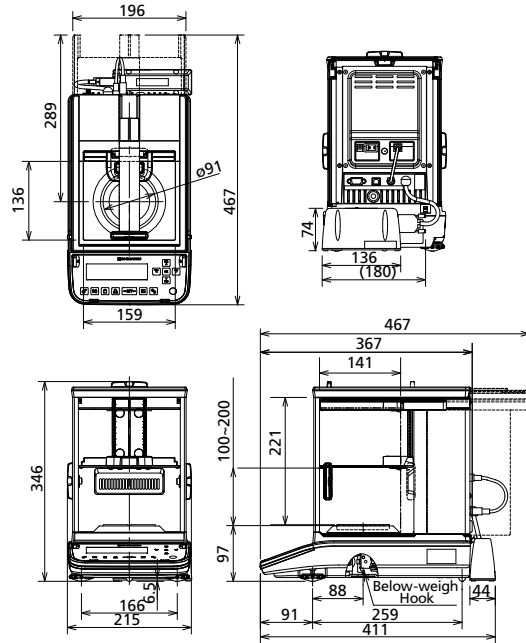
Dimensions (unit: mm) approximate.

Appearance and specifications are subject to change without prior notice.

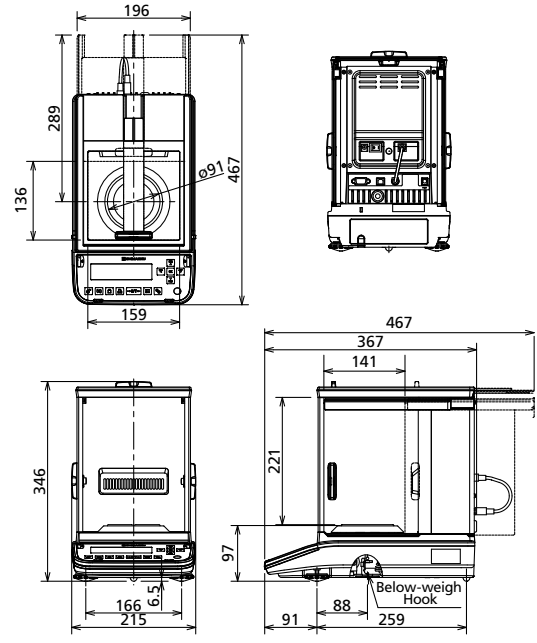
AP Series

Note: For functions, features, and specifications, please refer to pages 12 to 17.

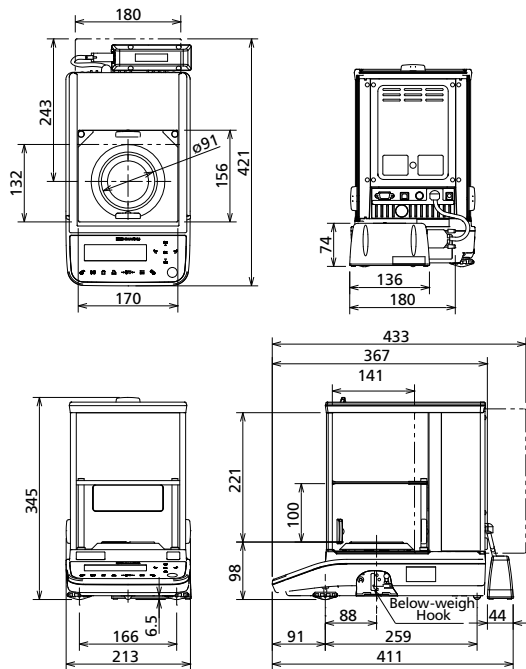
AP W-AD ex/AP W-AD Series (Minimum display 0.01 mg model)



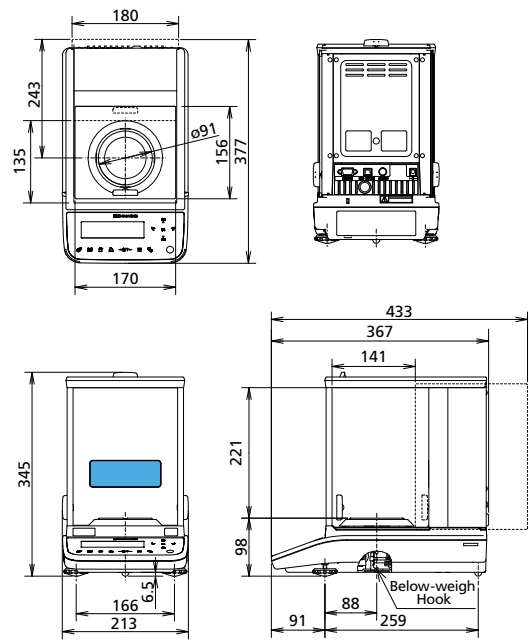
AP W-AD Series (Minimum display 0.1 mg model)



AP W ex/AP W Series (Minimum display 0.01 mg model)



AP W Series (Minimum display 0.1 mg model)
AP X Series, AP Y Series



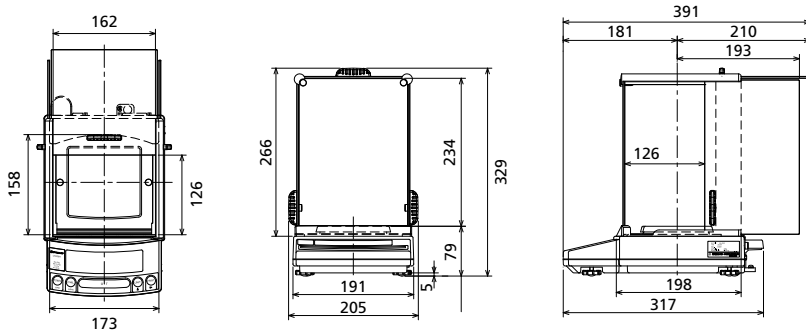
Blue-highlighted areas apply only to the AP W/AP X series.

Dimensions (unit: mm) approximate.
 Appearance and specifications are subject to change without prior notice.

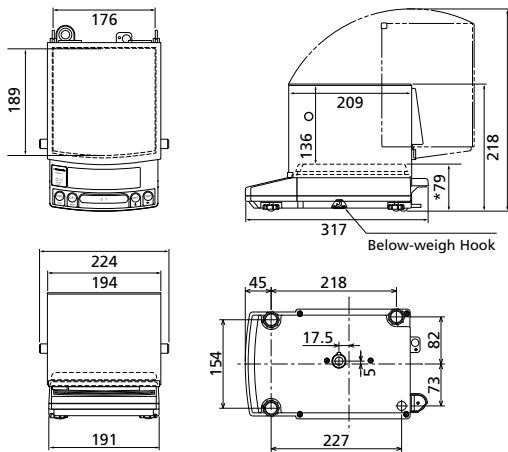
UP and UW/UX Series

Note: For functions, features, and specifications, please refer to pages 26 to 29.

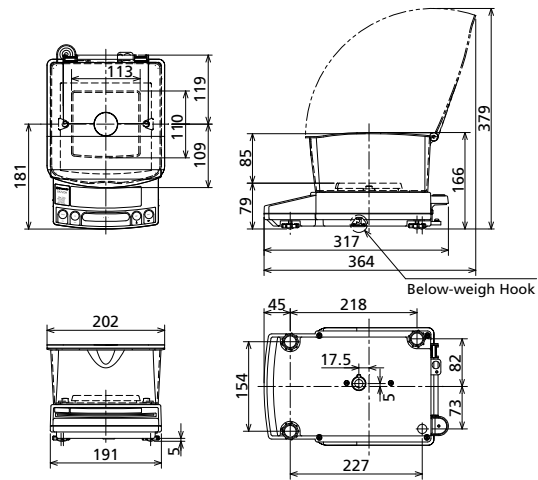
Small-pan model with glass windbreak (optional accessory) (Types with a capacity of 1,020 g or less.)



Large-pan model with large windbreak (optional accessory) (Types with a capacity of 2,200 g or less.)



Small-pan model (Types with a capacity of 1,020 g or less.)

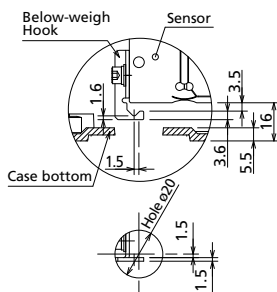


* The 0.1 g minimum display model is 79, while the 0.01 g minimum display model is 82.

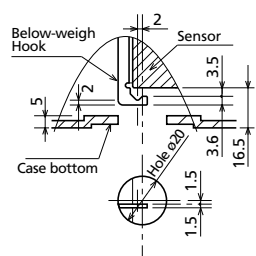
Note: Figure shows combination with simple windbreak (standard only for models with minimum display of 0.001 g). The delivered windbreak may differ slightly in size and shape.

Below-weigh Hook

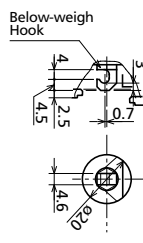
AP Series (0.01 mg)



AU Series

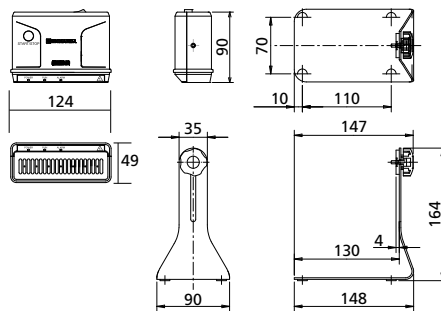


UP Series UW/UX Series



STABLO-AP STABLO-AP Ar/N2

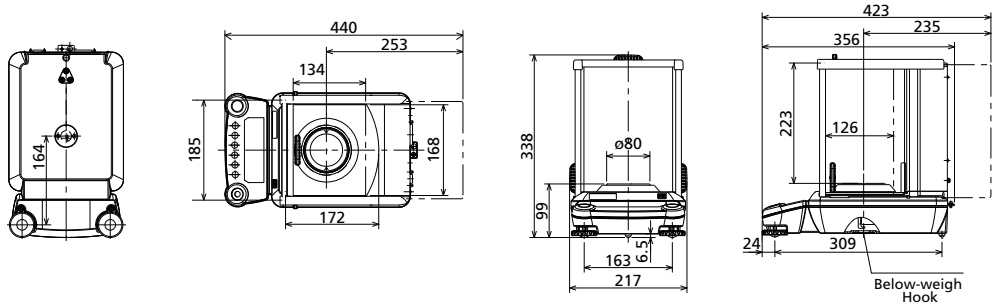
For functions, features, and specifications, please refer to pages 19 to 21.



Dimensions (unit: mm) approximate.
 Appearance and specifications are subject to change without prior notice.

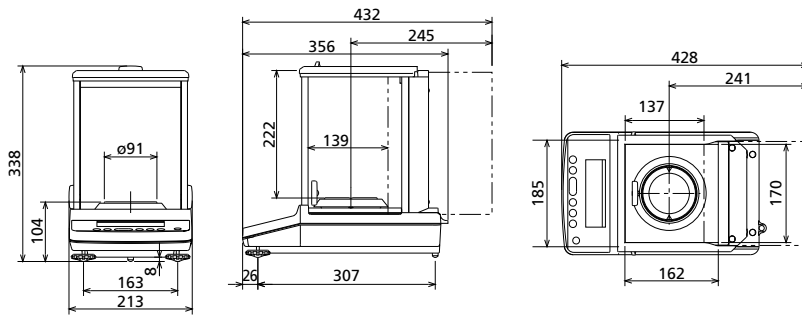
AU Series

Note: For functions, features, and specifications, please refer to pages 22 to 23.



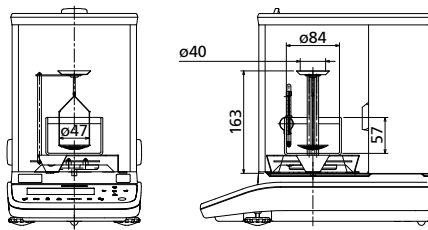
AT-R Series

Note: For functions, features, and specifications, please refer to page 20.



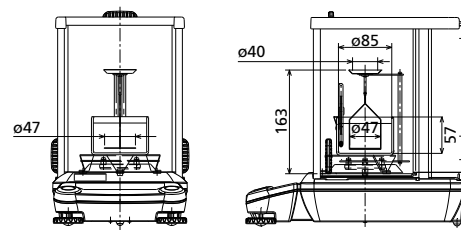
AP Series + Specific gravity measurement kit

Note: For functions, features, and specifications, please refer to page 37.



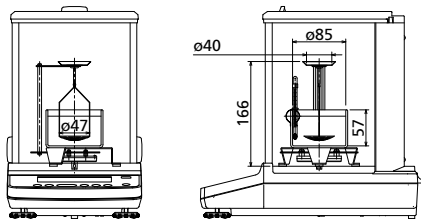
AU Series + Specific gravity measurement kit

Note: For functions, features, and specifications, please refer to page 38.



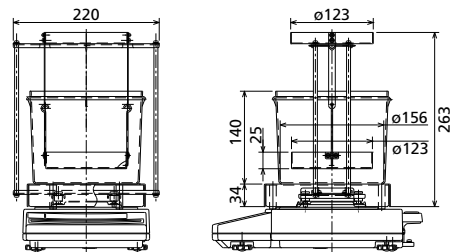
AT-R Series + Specific gravity measurement kit

Note: For functions, features, and specifications, please refer to page 39.



UP Series + Specific gravity measurement kit

Note: For functions, features, and specifications, please refer to page 40.

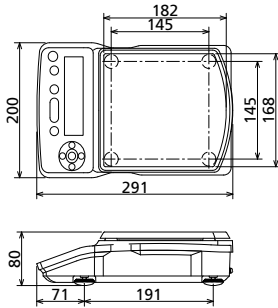


Dimensions (unit: mm) approximate.
 Appearance and specifications are subject to change without prior notice.

TX Series

For functions, features, and specifications, please refer to page 30.

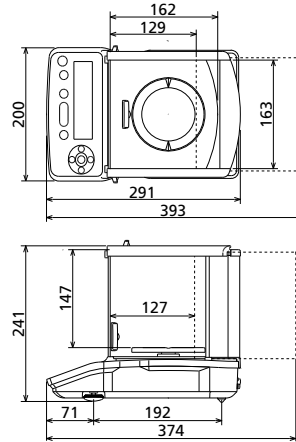
Large-pan model
 (Types with a capacity of 2,200 g or less.)



TW/TX Series

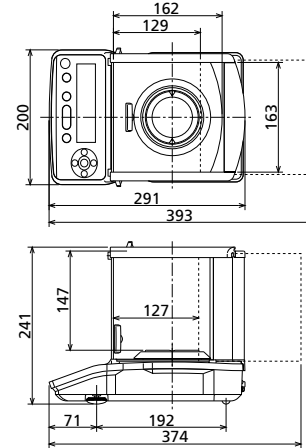
For functions, features, and specifications, please refer to page 30.

Small-pan model
 (Types with a capacity of 420 g or less.)



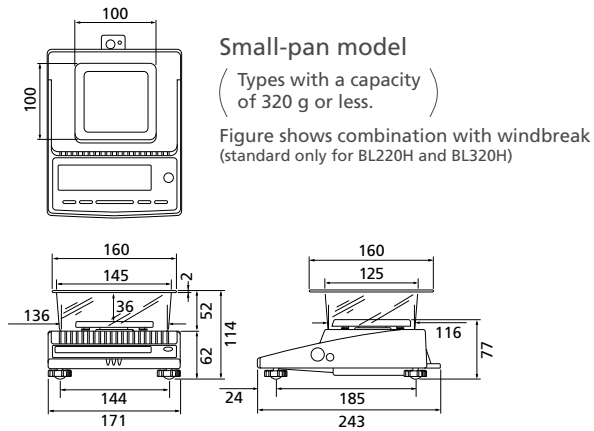
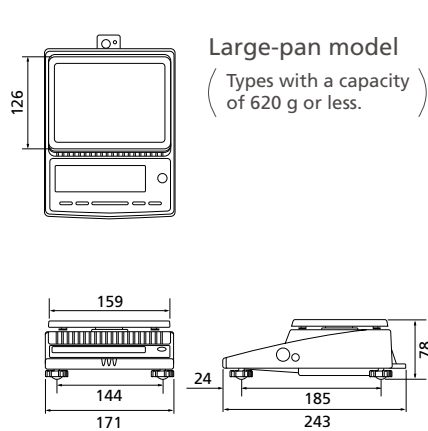
TWC/TXC Series

For functions, features, and specifications, please refer to page 30.



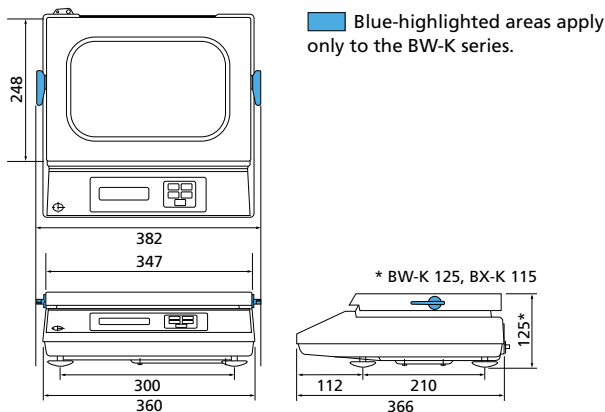
BL Series

Note: For functions, features, and specifications, please refer to page 31.



BW-K/BX-K Series

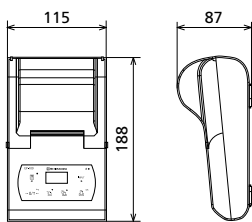
Note: For functions, features, and specifications, please refer to page 32.



Dimensions (unit: mm) approximate.
Appearance and specifications are subject to change without prior notice.

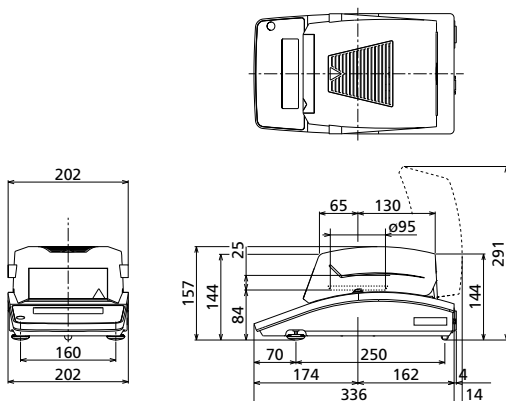
EP-100/EP-110

Note: For functions, features, and specifications, please refer to page 33.



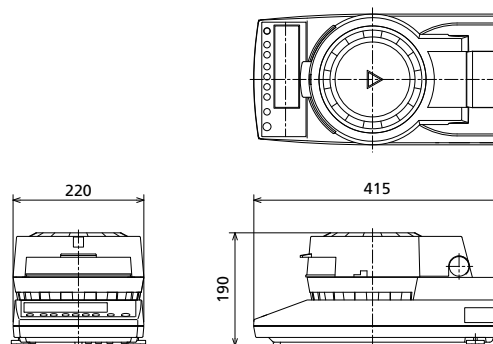
MOC63u

Note: For functions, features, and specifications, please refer to pages 34, 35.



MOC-120H

Note: For functions, features, and specifications, please refer to page 36.



Shimadzu Electronic Balances Demonstration Movies



UniBloc, LabSolutions and eco logo are trademarks of Shimadzu Corporation or its affiliated companies in Japan and/or other countries.
Windows, Excel and Surface are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.



Shimadzu Corporation
www.shimadzu.com/an/

For Research Use Only. Not for use in diagnostic procedures.

This publication may contain references to products that are not available in your country. Please contact us to check the availability of these products in your country.
Company names, products/service names and logos used in this publication are trademarks and trade names of Shimadzu Corporation, its subsidiaries or its affiliates, whether or not they are used with trademark symbol "TM" or "®".
Third-party trademarks and trade names may be used in this publication to refer to either the entities or their products/services, whether or not they are used with trademark symbol "TM" or "®".
Shimadzu disclaims any proprietary interest in trademarks and trade names other than its own.

The contents of this publication are provided to you "as is" without warranty of any kind, and are subject to change without notice. Shimadzu does not assume any responsibility or liability for any damage, whether direct or indirect, relating to the use of this publication.