



AP W-AD

AP with Automatic Door

AP W-AD Series

Advanced Performance UniBloc Balances

Provides high-speed response and high stability

New automatic door functionality makes
weighing operations even more convenient

01

Touchless sensors and a Smart Auto Door improve hygiene and lower contamination risk to provide a superior operating environment.

02

An ionizer and adjustable windbreak plate reduce static electricity and convection effects to provide highly stable and reliable measurements.

03

LabSolutions Balance supports weighing data integrity.



Visit our website for more information.

Product



Advanced Performance UniBloc Balances

AP Series

Product



Provides High-Speed Response and High Stability

New automatic door functionality makes weighing operations even more convenient

Minimum display 0.1 mg model

AP324W	AP324X	AP324Y
AP224W	AP224X	AP224Y
AP124W	AP124X	AP124Y

Minimum display
0.01 mg model

AP225W
AP135W

Minimum display
0.01 mg/0.1 mg model

AP225WD
AP125WD

Minimum display 0.1 mg model

AP324W-AD
AP224W-AD























































































Minimum display
0.01 mg model

AP225W-AD
AP135W-AD

Minimum display
0.01 mg/0.1 mg model

AP225WD-AD
AP125WD-AD



Series	Options
AP W-AD Series	                      
AP W Series	                     
AP X Series	                     
AP Y Series	                  



Aluminum integrated mass sensor

Excellent response time and stable temperature characteristics.



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 managing measurements or establishing traceability as required by GLP/GMP/ISO 9001 standards.



USB Interface

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



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.



Organic EL Display

Adopts an "Organic EL Display" that is clear even in dark places.

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	
Calibration Weight	Built-in					
External Calibration Weight Range for Span Calibration (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) *1	0.015 mg (to 20 g) 0.03 mg (to 100 g) 0.05 mg (to weighing capacity)	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)	0.01 mg (for 5 g load) *1				0.1mg (for 20 g load)	0.1mg (for 10 g load)
Minimum Weight	20 mg *1				200 mg	
Linearity *1	±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 *2,3	2 sec.					
Response Time *3	8 sec.		2 sec. / 8 sec.		2 sec.	
Operational Temperature/ Humidity Range	5 to 40 °C at 20 to 85 % RH *4					
Sensitivity Stability Against Temperature Range	±2 ppm/°C (10 to 30 °C)					
Display	OEL display (dot matrix)					
Rated Electric Power Supply	DC 12 V 1.5 A					
Power Supply Input (AC Adapter) *5	AC 100 to 240V 480 mA 50/60 Hz					
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 *6					
	Adjustable Internal Windbreak Plate				✓	

*1 Measurement conditions of W-AD series (0.01 mg models only) are as follows:

- Set the adjustable windbreak plate in the lowest position
- With a shield plate configured around the pan

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

*3 The response time value is typical.

*4 Non-condensing.

*5 Depending on the attached AC adapter.

*6 See more details of ionizer on page 18.



Touchless Sensors

(AP W-AD series only)

Doors open/close by waving a hand over the left and right infrared sensors that enables door operation without touching the 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.



Smart Auto Door

(AP W-AD series only)

The automatic doors include automatic learning functionality that enables freely setting how far to open/close each glass door. That minimizes external air effects and increases operational efficiency.

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		
Calibration Weight		Built-in						
External Calibration Weight Range for Span Calibration (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)	45 to 120.0090g (100 g)
Repeatability (at weighing capacity)		0.015 mg (to 20 g) 0.03 mg (to 100 g) 0.05 mg (to weighing capacity)	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)		0.01 mg (for 5 g load)				0.1 mg (for 20 g load)	0.1 mg (for 10 g load)	0.1 mg (for 5 g load)
Minimum Weight		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 *1,2		2 sec.						
Response Time *2		8 sec.		2 sec./8 sec.		2 sec.		
Operational Temperature/Humidity Range		5 to 40 °C at 20 to 85 % RH *3						
Sensitivity Stability Against Temperature Range		±2 ppm/°C (10 to 30 °C)						
Display		OEL display (dot matrix)						
Rated Electric Power Supply		DC 12 V 1.0A						
Power Supply Input (AC Adapter) *4		AC100 to 240V 320 mA 50/60 Hz						
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	✓						✓ (optional)
Ionizer	✓ (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		0.1mg					
Pan Size		Approx. 91 mm dia.					
Dimensions		Approx. W213 × D367 × H345 mm					
Weight		Approx. 7.0 kg			Approx. 6.5 kg		
Calibration Weight		Built-in			None		
External Calibration Weight Range for Span Calibration (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)		0.15 mg	0.1 mg		0.15 mg	0.1 mg	
Repeatability (for Low Loads)		0.1 mg (for 20 g load)	0.1 mg (for 10 g load)	0.1 mg (for 5 g load)	0.1 mg (for 20 g load)	0.1 mg (for 10 g load)	0.1 mg (for 5 g load)
Minimum Weight		200 mg					
Linearity		±0.3 mg	±0.2 mg		±0.3 mg	±0.2 mg	
Response Time for Trace Measurements *1,2		2 sec.					
Response Time *2		2 sec.					
Operational Temperature/ Humidity Range		5 to 40°C at 20 to 85% RH *3					
Sensitivity Stability Against Temperature Range		±2 ppm/°C (10 to 30°C)					
Display		OEL display (dot matrix)					
Rated Electric Power Supply		DC 12 V 1.0 A					
Power Supply Input (AC Adapter) *4		AC100 to 240V 320 mA 50/60 Hz					
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			✓ (optional)			
Ionizer	✓ (optional)						

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

*2 The response time value is typical.

*3 Non-condensing.

*4 Depends on the attached AC adapter.

Various accessories and options suitable for semi-micro measurement are available.

Multi-Stand

(included 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



Internal Windbreak Plate

(included 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.



Internal Windbreak Plate (for W/X/Y series models)

Static Electricity Remover (Ionizer)

STABLO[™]AP

Use as an external stand configuration or install it inside the balance unit.



When using a stand



Built-in

Other Optional Products



SMK-601
Specific Gravity Measurement Kit



AP Holder



EP-100



EP-110

Optional Accessories

Description
STABLO [™] -AP Ionizer Static Electricity Remover
EP-100 Electronic Printer
EP-110 Electronic Printer
Label Roll Paper for EP-100/110 (10 Rolls)
Internal Windbreak Plate (for W/X/Y Series) *1
SMK-601 Specific Gravity Measurement Kit
AP Holder *2
Multi-Stand *3

Description
Shield plate
AC Adapter (for W/X/Y Series)
AC Adapter (for W-AD Series Balances)
AC Adapter (for W-AD Series STABLO-AP Ionizers)
Display Protective Cover (Set of 5)
USB Cable Assembly (2 m) with Core
RS-IO Adapter Cable (for Connecting EP-80/90)

*1 Included standard with 0.01 mg models of W series only

*2 Included standard with AP225W-AD/AP225W models

*3 Included standard with 0.01 mg models of W-AD series only

Static Remover (Ionizer)

STABLO-AP

Product

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)



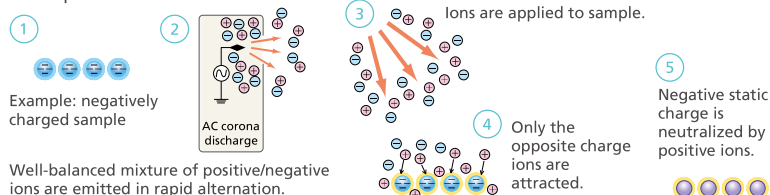
Easily install
in the balance

Features of STABLO-AP

Static Electricity Removal by Ion Irradiation

With the high-frequency AC corona discharge method, Shimadzu's STABLO-AP ionizer provides a 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.

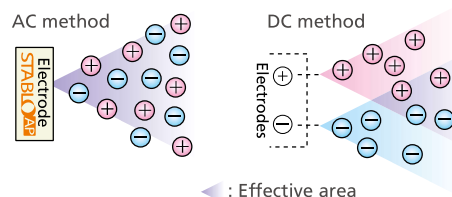
Concept of static removal



AC Method Produces Excellent Ion Balance

AC method: AC voltage is applied on the discharge needle and a well-balanced mixture of positive/negative ions is emitted in rapid alternation from one electrode.

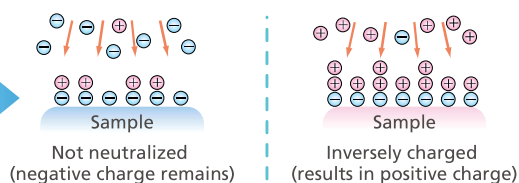
DC method: DC voltage is applied to a couple of electrodes. One is positive and the other is negative. Each electrode emits ions of one polarity only. An effective static removal angle is limited if the two electrodes are distanced. As electrodes deteriorate, the initial ion balance is lost.



What is "ion balance"?

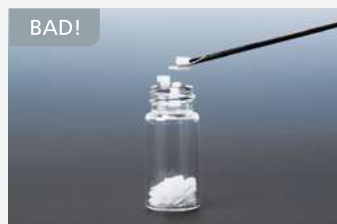
Ion balance is the balance of positive and negative ions that are supplied by an ionizer. If ion balance is poor, static electricity is not removed or inverse charging may result.

If ion balance is poor.....



Applications

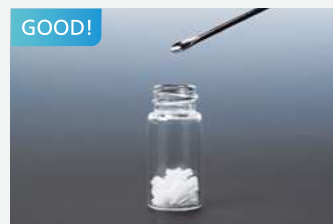
Static electricity keeps the sample out of the ampoule



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.

STABLO-AP is convenient when using an electronic balance



When the powder in the Petri dish is electrically charged, and the numerical value fluctuates



When the powdered medicine paper is electrically charged, and the numerical value is unstable



When the measurement spoon is electrically charged, and bringing it near the pan affects the numerical value

Specifications

Ion Generation Method	AC corona discharge method
Ion Balance	±10 V
Effective Static Removal Range	Approx. 400 mm from the outlet
Static Elimination Time	Approx. 1 second (typical value) (from ±1000 V to ±100 V)
Ozone Concentration	0.06 ppm
Electrode Probes	Tungsten (durability: 30,000 hours)
Weight	Approx. 710 g (Main unit: 395 g, Stand: 315 g)
Operating Temperature and Humidity	0 °C to + 40 °C, 25 % RH to 85 % RH (non-condensing)
Rated Electric Power Supply	DC 24 V, 1.0 A