



# SHIMADZU ELECTRONIC BALANCES

General Catalog



JQA-0376

Founded in 1875, Shimadzu Corporation, a leader in the development of advanced technologies, has a distinguished history of innovation built on the foundation of contributing to society through science and technology. We maintain a global network of sales, service, technical support and applications centers on six continents, and have established long-term relationships with a host of highly trained distributors located in over 100 countries. For information about Shimadzu, and to contact your local office, please visit our Web site at [www.shimadzu.com](http://www.shimadzu.com)

For information about Shimadzu Electronic Balances, please visit our Web site at [www.shimadzu.com/balance](http://www.shimadzu.com/balance)



SHIMADZU CORPORATION. International Marketing Division  
3. Kanda-Nishikicho 1-chome, Chiyoda-ku, Tokyo 101-8448, Japan  
Phone: 81(3)3219-5641 Fax: 81(3)3219-5710  
URL <http://www.shimadzu.com>



1875 ● Establishment of SHIMADZU CORPORATION

1920 ● 1918 Commence Tortion Balance and Top-pan Balance production

1930 ● 1930 **Model.5** Chemical Balance

1940 ● 1939 Large-capacity Balance

1950 ● 1950 **DODIQ** Direct-Reading Balance

1958 **Type L** Direct-Reading Balance

1960 ● 1960 **AL-3** Automatic Direct-Reading Balance

1965 **AL-7** Automatic Direct-Reading Balance

1967 **LU-T1100** Top-loading Direct-Reading Balance

1970 ● 1970 **AL-8** Automatic Direct-Reading Balance (All-digital display)

1970 **Digibalance D-1003** Electronic Balance

1973 **C-160** Direct-Reading Carat Balance

1976 **NL-200P** Direct-Reading Balance

1980 ● 1981 **EB-2800M** Electronic Animal Balance

1981 **AEL-160** Electronic Analytical Balance

● 1985 **AEL-200** Electronic Analytical Balance (Full-range electro-magnetic)

● 1985 **PSC** Fully-automatic calibration based on temperature change detection

● 1989 **EB-K** Precision platform balances with **OPF** (later renamed UniBloc)

1990 ● 1993 **AEM-5200** Micro Balance

● 1997 First electronic balances with **WindowsDirect**

2000 ● 2003 New UniBloc balance line-up

2004 **MOC-120H** UniBloc moisture balance

# SHIMADZU ELECTRONIC BALANCES

## SHIMADZU : A Tradition of Weighing Expertise

Shimadzu Corporation was established in 1875 in Kyoto, Japan, as one of the pioneers of 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. Users reduced weighing time by 66%, and consequently 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 were still utilized in modern laboratories.

Shimadzu continued to pioneer new 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 : the temperature-based fully-automatic calibration in 1985, the first one-piece forcecell (OPF, later renamed UniBloc) in 1989, the high-sensitivity AEM-5200 Micro Balance in 1993, and the unique Windows® Direct feature perfectly suited for the computerized laboratory of the 21st Century.

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

One of the latest achievements is AUW-D series, the world's first semi-micro balances with the advantages of UniBloc one-piece forcecell technology.

SHIMADZU ELECTRONIC BALANCES

APPLICATION BALANCES

OTHERS

Contents	SHIMADZU ELECTRONIC BALANCES	APPLICATION BALANCES	OTHERS
	P 04 - Quick reference by capacity and minimum display	P 11 - UniBloc Precision Platform Balances	P 15 - Specific Gravity Measurement Kit
	P 04 - Features and Symbols	P 12 - Analytical Balances	P 15 - Animal Balances
	P 06 - UniBloc Family of Balances	P 12 - Top-Loading Balances	P 16 -Optional Accessories
	P 06 - UniBloc Family of Balances	P 13 - Portable Electronic Balances	P 17 -Optional accessories list
	P 09 - UniBloc Top-Loading Balances	P 14 - Electronic Moisture Balances	P 18 -Physical Dimensions

# Quick reference by capacity and minimum display

Minimum display Capacity	0.01mg	0.1mg	0.001g	0.01g	0.1g	1g(Minimum display)
10g	<b>Semi-micro Balances (P.7)</b>					
50g	AUW120D <sup>※</sup>					
100g	AUW220D <sup>※</sup>	AUW120D <sup>※</sup> AUW/AUX/AUY120 AW/AX/AY120		EL/ELB120		
200g		AUW220D <sup>※</sup> AUW/AUX/AUY220 AW/AY220 AX200	UW/UX220H BL220H	EL/ELB200		
300g	<b>Analytical Balances (P.8 and P.12)</b>	AUW/AUX320 AW320		EL/ELB300		
400g			BL320H	BL320S		
600g			UW/UX420H	UW/UX420S	EL/ELB600	EL/ELB600S
			UW/UX620H	BL620S UW/UX820S		
1200g					EL/ELB1200	<b>Portable Electronic Balances (P.13)</b>
2000g			UW/UX2200H BL2200H		EL/ELB2000	
3000g			BL3200HL BL3200H		EL/ELB3000 BL3200S	
4000g			UW/UX4200H		UW/UX4200S	
6000g		<b>Top-loading Balances UW/UX Series (P.9) BL Series (P.12)</b>	UW/UX6200H		UW/UX8200S	EL/ELB6000S
10000g					BW/BX12KH BW/BX22KH BW/BX32KH	EL/ELB12K BW/BX32KS BW/BX52KS

※Dual-range models appearing twice for both ranges.  
(Capacity) UniBloc Family of Balances

**WindowsDirect** *Experience it!*

**(1) Press [PRINT] key**

- Place the cursor at the desired position in your Windows application.
- Press the [PRINT] key on the balance.

**(2) Sent as if typed from the computer keyboard!**

The weighed result will be directly typed there.

Any application on Windows® :  
e.g. Excel, Word etc.

All that you need to add is **just one cable!**  
**No communication software** is required!

## Features and Symbols

**REDUCE MANUAL CALIBRATION WORK**

**Perfect Self Calibration**  
The balance self-calibrates when it detects temperature changes that would affect accuracy. Operator is released from constantly monitoring surrounding conditions.

**Clock-CAL**  
Fully automated feature initiates self-calibration at set time intervals, using motor-driven internal calibration weight. Up to three automatic calibrations per day may be pre-set to coincide with work schedules or to meet specific quality goals.

**Internal Calibration**  
Calibration can be performed any time with a simple push-button operation.

**One-lever CAL**  
Single lever operation loads and unloads built-in calibration weight.

**GLP, GMP, AND ISO9000 CONFORMANCE**

**Calibration Report**  
With optional printer connected to the balance, calibration reports which meet the requirements of GLP, GMP, and ISO9000 can be produced.

**Built-in Clock**  
Date and time can be readily supplied by the balance.

**APPLICATION SPECIFIC FEATURES**

**WindowsDirect (See p.5)**  
Weighed result is directly typed at the cursor position of any application on Windows® OS. No communication software is required.

**Built-in RS-232C Interface**  
RS-232C interface is a standard feature.

**Piece Counting Mode**  
Piece counting function is a standard feature.

**Analog Bar Graph Display**  
Allows viewing of remaining capacity.

**Specific Gravity Measurement**  
Software for specific gravity measurement is pre-installed. Simply add optional specific gravity kit for efficient measurements.

**Standard Below-weigh Hook**  
Measurement beneath the balance is possible.

**Interval Timer Output**  
Data can be automatically output at pre-set time intervals.

**Auto Print**  
Data can be automatically output as each measurement is made.

**Checkweighing**  
Utilized in quality control applications.

**Dry Battery Operation**  
Portable for use in the field.

**OTHER FEATURES**

**UniBloc**  
Single-block technology brings high performance and durability.

**Backlight**  
Easy to read in any environment.

**All-metal Housing**  
All metal construction for high durability.

# UniBloc Family of Balances

## [ UniBloc Analytical Balances ]

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

## [ UniBloc Top-loading Balances ]

**UW/UX series**

## [ UniBloc Precision Platform Balances ]

**BW-K/BX-K series**



Shimadzu introduced one piece force cell technology for precision balances in 1989. Today's UniBloc is created by high-precision electric discharge wire processing applied to a block of aluminum alloy, and replaces the conventional electro-magnetic balance sensor assembly. UniBloc's compact, uniform structure ensures stable temperature characteristics, excellent response time and stable corner-load performance. The UniBloc design permits a consistency of production that assures reliability and a long operational life.

The updated UniBloc technology expanded the UniBloc balance line up, which now ranges from semi-micro with minimum display of 0.01mg to precision platform balances up to 52kg in capacity.

One piece force cell patented in USA in 1989, No.4799561, in China in 1991, No.12729, in Japan in 1995, No.1905686

# 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.
- Microprocessor digital control can be set to automatically provide the most suitable data processing for the installation environment and weighing application.

### User-friendly Features

- Weighing work is made easy by the smooth door movement. It is easy to remove and replace the door rails for cleaning.
- The embossed key panel sheet provides clear clicking response as operated. The key operations can be confirmed with a gentle beeping sound, too.
- Level adjustment can be performed with ease.

### For Application

- Shimadzu's unique WindowsDirect is a standard feature for all the UniBloc Analytical Balances. Measurement results can be transmitted to Excel or other Windows applications without any software installation to your computer. All you have to add is one RS-232C cable. Windows® Direct works with Windows® 95, 98, NT4.0, 2000, ME and XP. PC must be IBM PC/AT compatible.
- Piece counting, various mass units, below-weigh hook, specific gravity measurement software are all standard features.



### dual-range semi-micro balances

#### AUW-D series



AUW-D dual-range semi-micro balances are the first five-decimal balances with the advantages of UniBloc one-piece force cell technology.

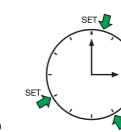
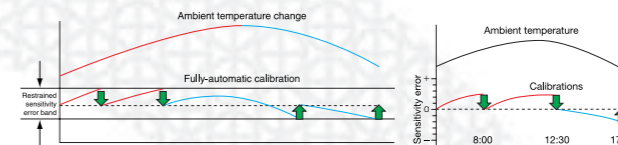


### Choose one of the two models according to your field requirements.

Excellent response, stability and zero return performance – in a semi-micro balance.

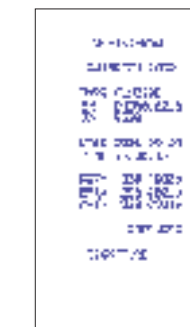
### Choice of fully-automatic calibrations : PSC and Clock-CAL

Operator can choose from two types of fully-automatic span calibration methods. "PSC" is initiated based on temperature change detection, and "Clock-CAL" operates at user pre-set times (up to three times a day).



### GLP/GMP/ISO calibration report

Calibration report can be automatically printed out with the optional electronic printer. Date and time are also output to meet GLP/GMP/ISO requirements.



### WindowsDirect (See p.5)

Weighed data can be directly typed into any Windows application and no interface software is required.

Model	Capacity	Minimum display	Pan size(mm)	Internal calibration	Internal calibration modes	WindowsDirect
AUW220D	220g/82g	0.1mg/0.01mg	80 dia	●	PSC, Clock-CAL, any time with key touch	●
AUW120D	120g/42g	0.1mg/0.01mg	80 dia	●	PSC, Clock-CAL, any time with key touch	●

# UniBloc Top-Loading Balances

## Analytical balances

### AUW/AUX/AUY series



AUW/AUX/AUY models are the newest single-range analytical balances engineered with the UniBloc technology. This provides especially fast response and superb stability.



#### PSC, fully-automatic calibration (AUW/AUX models)

Calibration is carried out when temperature change has been detected.

#### Clock-CAL, fully-automatic calibration (AUW models only)

Calibration carried out at user-preset times (up to three times a day). Operators can work without unexpected interruptions.

#### GLP/GMP/ISO calibration report (AUW/AUX models only)

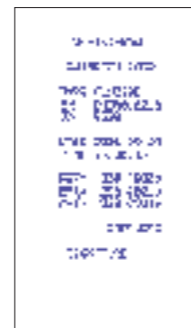
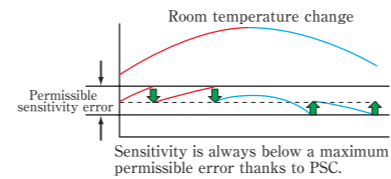
Meets requirements of GLP/GMP/ISO9000. Calibration reports can be output with date and time, provided by the built-in clock.

#### WindowsDirect (See p.5)

Weighed data can be directly typed into any Windows application and no interface software is required.

#### Backlight LCD (AUW models only)

LCD with backlight can be read with ease and comfort under any lighting condition.



Model	Capacity	Minimum display	Pan size(mm)	Internal calibration	Internal calibration modes	WindowsDirect
AUW320	320g	0.1mg	80 dia	●	PSC, Clock-CAL, any time with key touch	●
AUW220	220g	0.1mg	80 dia	●	PSC, Clock-CAL, any time with key touch	●
AUW120	120g	0.1mg	80 dia	●	PSC, Clock-CAL, any time with key touch	●
AUX320	320g	0.1mg	80 dia	●	PSC, any time with key touch	●
AUX220	220g	0.1mg	80 dia	●	PSC, any time with key touch	●
AUX120	120g	0.1mg	80 dia	●	PSC, any time with key touch	●
AUY220	220g	0.1mg	80 dia			●
AUY120	120g	0.1mg	80 dia			●

## Top-Loading Balances

### UW/UX Series



The new line of Shimadzu top-loading balances are engineered with the UniBloc mechanism resulting in unrivaled response, stability and durability. Powerful features support any imaginable weighing application. UW Series includes internal calibration and fully-automatic calibration functions.



Small-pan model (minimum display 0.001g)

\* The delivered windbreak may differ from the photo

#### GLP/GMP/ISO calibration report

Meets requirements of GLP/GMP/ISO9000. Calibration reports can be output with date and time, provided by the built-in clock.



Example of calibration record

#### Analog display modes

##### Bar graph display

Bar graph clearly indicates the total weight (including the tare) as a portion of the balance capacity.

##### Target weighing

Select a target weight and tolerance. The display clearly indicates when they are reached.

##### Checkweighing

Set an upper and lower threshold. The display continually indicates whether the sample is within the range "GO", over range "HI" or under range "LO". Choose one of two checkweighing bar graph display modes.

The results can also be output to external devices.

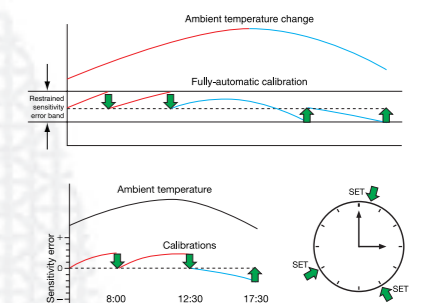


#### PSC, fully-automatic calibration (UW only)

Calibration is carried out when temperature change has been detected.

#### Clock-CAL, fully-automatic calibration (UW only)

Calibration carried out at user-preset times (up to three times a day). Operators can work without unexpected interruptions.



# UniBloc Precision Platform Balances

## WindowsDirect (See p.5)

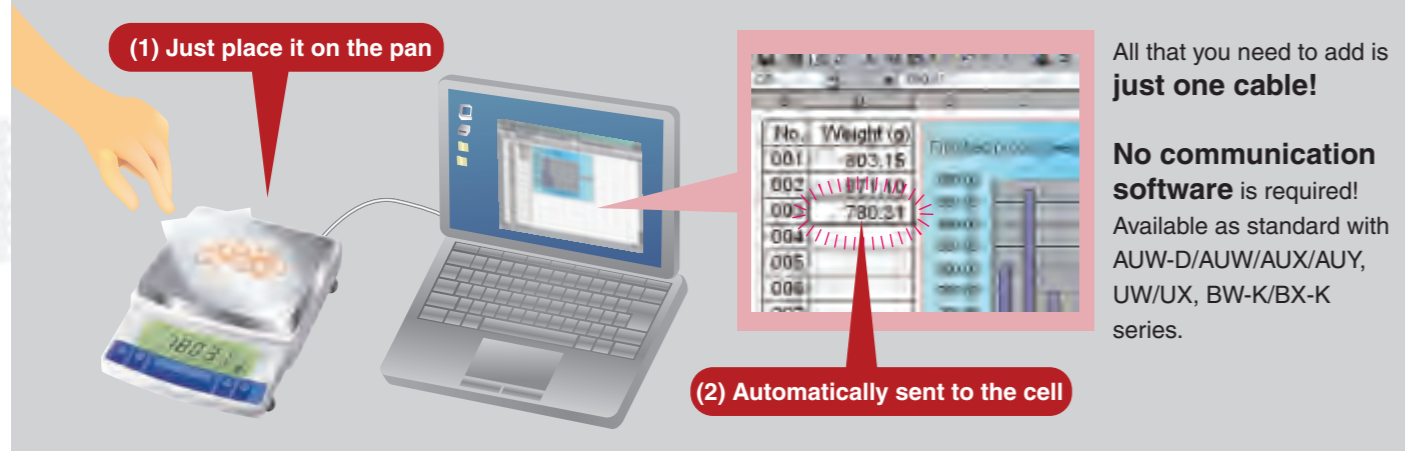
Weighed data can be directly typed into any Windows application and no interface software is required.

## Auto Print

Automatically outputs data as each measurement is made. Combination with WindowsDirect makes up a handy weigh-and-record system.



## Auto Print and WindowsDirect



## Back light LCD

LCD with back light can be read with ease and comfort under any lighting condition.

## Unit conversion and piece counting function

Weight value can be presented in 22 different units and modes, including percentage, carat, specific gravity, lb, oz, and others. Users can pre-register any combination of units depending on their needs.

Piece counting function is standard.

Model	Pan type	Capacity	Minimum display	Pan size(mm) approx.
UW420H*	Small-pan	220g	0.001g	108X105
UW420H*	Small-pan	420g	0.001g	108X105
UW620H*	Small-pan	620g	0.001g	108X105
UW2200H	Large-pan	2200g	0.01g	170X180
UW4200H	Large-pan	4200g	0.01g	170X180
UW6200H	Large-pan	6200g	0.01g	170X180
UW420S	Small-pan	420g	0.01g	108X105
UW820S	Small-pan	820g	0.01g	108X105
UW4200S	Large-pan	4200g	0.1g	170X180
UW8200S	Large-pan	8200g	0.1g	170X180

Model	Pan type	Capacity	Minimum display	Pan size(mm) approx.
UX220H*	Small-pan	220g	0.001g	108X105
UX420H*	Small-pan	420g	0.001g	108X105
UX620H*	Small-pan	620g	0.001g	108X105
UX2200H	Large-pan	2200g	0.01g	170X180
UX4200H	Large-pan	4200g	0.01g	170X180
UX6200H	Large-pan	6200g	0.01g	170X180
UX420S	Small-pan	420g	0.01g	108X105
UX820S	Small-pan	820g	0.01g	108X105
UX4200S	Large-pan	4200g	0.1g	170X180
UX8200S	Large-pan	8200g	0.1g	170X180

\*Models with minimum display of 0.001g come with a standard windbreak.

## Precision Platform Balances

### BW-K/BX-K Series



The Shimadzu Precision Platform balances have been engineered with the innovative UniBloc mechanism since 1989. Powerful features support any imaginable weighing application. BW-K Series includes internal calibration weight.

## GLP/GMP/ISO calibration report

Meets requirements of GLP/GMP/ISO9000. Calibration reports can be output with date and time, provided by the built-in clock.

## Analog display modes

### Bar graph display

Bar graph clearly indicates the total weight (including the tare) as a portion of the balance capacity.

### Target weighing

Select a target weight and tolerance. The display clearly indicates when they are reached.

### Checkweighing

Set an upper and lower threshold. The display continually indicates whether the sample is within the range "GO", over range "HI" or under range "LO". Choose one of two checkweighing bargraph display modes.

## WindowsDirect (See p.5)

Weighed data can be directly typed into any Windows application and no interface software is required.

## Large-size calibration weight (BW-K only)

For accurate internal calibration. Calibration can be performed by simple lever operation.

Model	Capacity	Minimum display	Pan size(mm) approx.	Calibration weight
BW12KH	12kg	0.1g	345X250	Built-in
BW22KH	22kg	0.1g	345X250	Built-in
BW32KH	32kg	0.1g	345X250	Built-in
BW32KS	32kg	1g	345X250	Built-in
BW52KS	52kg	1g	345X250	Built-in

Model	Capacity	Minimum display	Pan size(mm) approx.	Calibration weight
BX12KH	12kg	0.1g	345X250	External
BX22KH	22kg	0.1g	345X250	External
BX32KH	32kg	0.1g	345X250	External
BX32KS	32kg	1g	345X250	External
BX52KS	52kg	1g	345X250	External

# Analytical Balances

## Analytical Balances

### AW/AX/AY Series



#### PSC Fully-automatic calibration; PSC (AW only)

Calibration is carried out when temperature change has been detected.

#### Clock-CAL function (AW only)

Calibration carried out at user-preset times (up to three times a day). Operators can work without unexpected interruptions.

#### ISO GLP/GMP/ISO calibration report

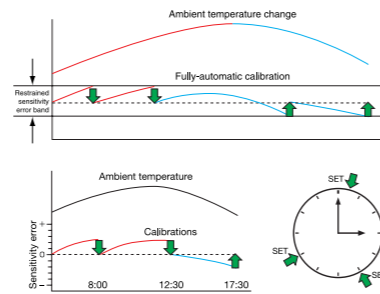
Meets requirements of GLP/GMP/ISO9000. Calibration reports can be output with date and time, provided by the built-in clock.

#### WindowsDirect (See p.5)

Weighed data can be directly typed into any Windows application and no interface software is required.

#### Unit conversion

Automatic unit conversion at the push of a button. Carat, and other units are standard.

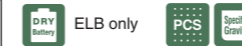


Model	Capacity	Minimum display	Pan size (mm)	Internal calibration	Internal calibration modes	Windows Direct
AW320	320g	0.1mg	80 dia	●	PSC, Clock-CAL, any time with key	●
AW220	220g	0.1mg	80 dia	●	PSC, Clock-CAL, any time with key	●
AW120	120g	0.1mg	80 dia	●	PSC, Clock-CAL, any time with key	●
AX200	200g	0.1mg	80 dia	●	any time with key touch	●
AX120	120g	0.1mg	80 dia	●	any time with key touch	●
AY220	220g	0.1mg	80 dia			●
AY120	120g	0.1mg	80 dia			●

# Portable Electronic Balances

## Portable Electronic Balances

### EL/ELB Series



Optional built-in battery makes it readily portable with no compromise in accuracy.



#### High sensitivity and stability

Improved internal resolution provides extra accuracy.

#### Quick response

Stable results are quickly displayed.

#### Various application modes

Piece counting, percent display, and specific gravity modes are easily accessible.

#### Standard specific gravity software

Optional specific gravity kit is available for extra efficiency.

#### Digital stability control

User-selectable parameters for high-vibration environments provide dependable results.

#### Two-way power supply (AC or Battery operation)

Optional built-in rechargeable battery (EL Series) or dry battery operation (ELB Series) makes it portable

Series	AC operation	Dry battery operation	Rechargeable battery operation
EL Series	AC adaptor is required	N/A	optional
ELB Series	AC adaptor is required	standard	N/A

Model	Pan type	Capacity	Minimum display	Calibration weight
EL120/ELB120	Small-pan	120g	0.01g	110dia
EL200/ELB200	Small-pan	200g	0.01g	110dia
EL300/ELB300	Small-pan	300g	0.01g	110dia
EL600/ELB600	Large-pan	600g	0.05g	170X130
EL600S/ELB600S	Large-pan	600g	0.1g	170X130
EL1200/ELB1200	Large-pan	1,200g	0.1g	170X130
EL2000/ELB2000	Large-pan	2,000g	0.1g	170X130
EL3000/ELB3000	Large-pan	3,000g	0.1g	170X130
EL6000S/ELB6000S	Large-pan	6,000g	1g	170X130
EL12K/ELB12K	Large-pan	12,000g	1g	170X130

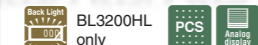
#### Totally portable



# Top-Loading Balances

## Top-Loading Balances

### BL Series



High-resolution balances made affordable

#### Quick response

Very fast response for operator comfort and efficiency.

#### PCS Piece counting function

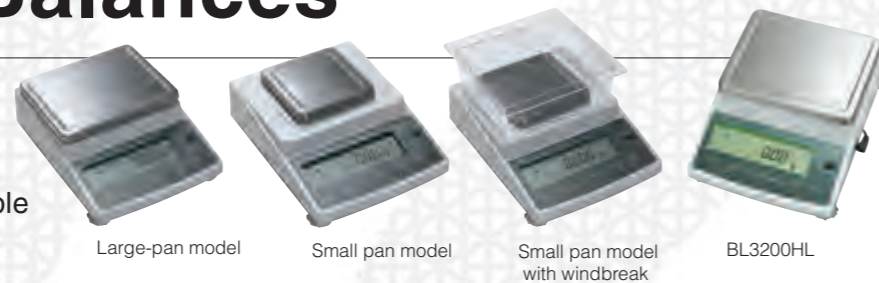
Piece counting function is standard.

#### Analog bar graph display

Remaining weighing capacity can be seen at a glance.

#### Compact body

This electro-magnetic precision balance is as compact as a portable scale.



Model	Pan type	Capacity	Minimum display	Pan size(mm) approx.
BL220H *	Small-pan	220g	0.001g	100X100
BL320H *	Small-pan	320g	0.001g	100X100
BL2200H	Large-pan	2200g	0.01g	164X124
BL3200H	Large-pan	3200g	0.01g	164X124
BL3200HL	Large-pan	3200g	0.01g	164X124
BL320S	Small-pan	320g	0.01g	100X100
BL620S	Large-pan	620g	0.01g	164X124
BL3200S	Large-pan	3200g	0.1g	164X124

\*Models with minimum display of 0.001g come with a standard windbreak.

# Application Balances

## Electronic Moisture Balance

**MOC-120H**



Large sample pan and capacity allow any sample to be laid out for the best drying conditions.

Reliable UniBloc weighing mechanism and unique auto-taring system enable accurate measurements.

### Large sample pan and auto-taring mechanism

A larger sample pan contributes to accurate measurements, but the larger heat capacity of it normally results in a larger zero drift in the precision weighing.

The MOC-120H is equipped with a unique auto-taring mechanism, which eliminates the zero drift continuously and ensures high accuracy, even with a larger sample pan.

### UniBloc technology for precision weighing

Shimadzu's UniBloc cell is used as the core mechanism of the weighing part.

Its uniform structure maintains the high performance of precision weighing under repeated heating / cooling.

### Mid-wave infrared quartz heater

Mid-wave infrared quartz heater provides effective drying for a wide range of samples. Besides the excellent drying performance, it offers a long operational life of 20,000 to 30,000 hours.

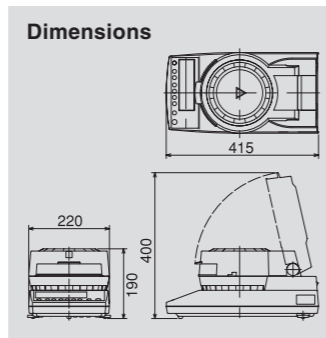
Therefore, the long-term operational cost is much lower than halogen lamp heaters.

### Predictive measuring mode

The final result is predicted from the drying process, saving time in repeated measurements.

### WindowsDirect

Complete sample data and instrument settings can be directly typed into any application on Windows® and no interface software is required.



MOC-120H with 130mm sample pan

<b>Measuring method</b>	Heat drying and weight loss
<b>Sample pan size</b>	130 mm dia
<b>Sample pan material</b>	Stainless steel
<b>Minimum display in weighing</b>	0.001g
<b>Measurement range of moisture content</b>	0.01% to 100.00 %
<b>Moisture content minimum display</b>	0.01%
<b>Sample capacity</b>	120g
<b>Measurement modes</b>	Automatic or Timed ending modes, Standard, Rapid, Slow and Step drying modes, Predictive Measuring mode
<b>Drying heater</b>	Mid-wave infrared quartz heater
<b>Temperature range</b>	30 to 200°C (by 1°C increments)
<b>Digital output</b>	Complete test data including instrument settings can be output. Optional electronic printer prints the data in tabular or graphical style. Excel® Spread Sheets can receive the data without communication software (WindowsDirect).
<b>Dimensions</b>	220W X 415D X 190H (mm)
<b>Weight</b>	4.5kg
<b>Operational temperature and humidity range</b>	5 to 40°C, 85% RH or lower
<b>Power requirements</b>	AC100 to 127 / 220 to 240V, 640W maximum
<b>Stored procedures</b>	10
<b>Standard accessories</b>	Sample pan 2pcs, Sample pan handler 2pcs, Aluminum sheet 20pcs, Spoon, Spatula
<b>Optional accessories</b>	Temperature calibration kit, Electronic printer, RS-232C Cable
<b>Consumables</b>	Aluminum sheet 500pcs, Printer paper for optional electronic printer

## Optional Accessories

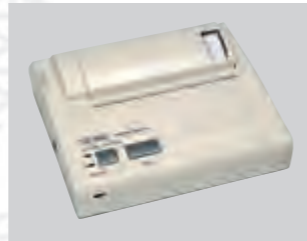
### Temperature calibration kit

The temperature at the sample position can be directly measured.



### Electronic printer

Measurements can be printed out in tabular or graphical style.



## SMK Specific Gravity Measurement Kits

Simple specific gravity meters based on precision balances.

Combine your Shimadzu balance with a specific gravity measurement kit for handy specific gravity measurements. Software for specific gravity measurement is pre-installed in all AUW-D / AUW / AUX / AUJ, AW / AX / AY, UW / UX, and EL / ELB Series.

Order one of the balances and the corresponding specific gravity measurement kit.

Liquid density can also be measured with a sinker (except for EL/ELB Series).



SMK-101



SMK-401

Model	Balance Series	Reduced Capacity (approx.)	Sample Phase	
			Solid	Liquid
SMK-401	AUW-D/AUW/AUX/AUJ	0g	●	●
SMK-301	AW/AX/AY	0g	●	●
SMK-101	UW/UX (Capacity 2200g or more)	100g	●	●
SMK-102	UW/UX (Capacity 420g-820g)	270g	●	●
SMK-201	EL/ELB (Capacity 600g-6000g)	200g	●	

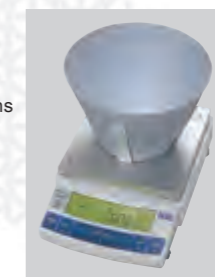
A sinker is additionally needed for liquid density measurement.

## Animal Balances

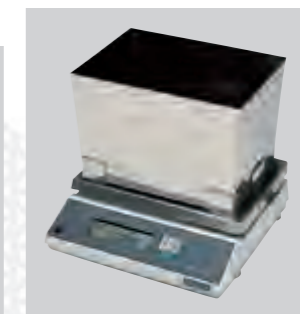


\* When animal weighing mode is not used, all the functions indicated on p.9 or p.11 are available.

### Electronic Balances for Weighing Animals



UW Series



BW-K plus Medium-size Animal Bucket



BW-K plus Large Animal Bucket

### Dedicated software brings quick and reliable results of live animal weighing

Upon removing the weighed animal, the weight of remaining feces and output are automatically tared off, and the balance presents zero for the next animal.

Display response and stability can be optimized according to the level of animal movement and the environmental conditions.

Model	Balance Series	Reduced Capacity (approx.)
Small Animal Bucket set	UW/UX (Capacity 2200g or more)	Bottom 110dia, Top 200dia, Height 130
Medium-size Animal Bucket set *1	BW-K	Bottom 305 X 215, Top 377 X 245, Height 215
	BX-K	
Large Animal Bucket set *2	BW-K (Capacity 22kg or more)	Bottom 335 X 245, Top 445 X 395, Height 345
	BX-K (Capacity 22kg or more)	

\*1 Capacity is reduced about 2kg  
\*2 Capacity is reduced about 6kg  
\*1,2 Production on demand



# Optional Accessories

## Electronic Printer

EP-80

EP-90

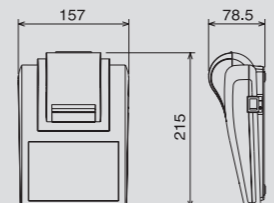


EP-80



EP-90

### Dimensions



### Common features for EP-80 and EP-90

- Simple connection to balances using the cable provided.
- Uses normal paper, suitable for long-term storage compatible with GLP/GMP/ISO (dot impact method).
- Operation can be powered by AC adapter or dry batteries
- Hassle-free long-use printer paper rolls (8000 lines of printing without roll).
- High-speed printing at approx. 3 lines/sec (printer mechanism performance).
- Installed with statistical calculation function as standard.
- Can be used simultaneously with Shimadzu's unique WindowsDirect function (output to computer).

### EP-90 Capable of Attaching Sample/ID Numbers, Date and Time to Each Measurement Result

- Equipped with keyboard, capable of defining ID number (fixed input number), and sample number (number input and then increased automatically with each printing).
- Printing of date and time (when connected to an electronic balance with a built-in clock) can be controlled from the printer.
- Multiplication and comparator functionality built-in.



EP-90 print-out sample

## Static Remover

STABLO-EX

NEW Shimadzu's unique 2-WAY ionizer

Hand-held / On stand

### Secure static removal

The excellent ion polarity balance achieved by the AC method ensures :

- No inverse charging
- Wide angle static removal
- High performance maintained over a long period of use

### Space saving design

Compact main unit requires minimal space. Holder height and angle are adjustable.



Quickly discharge container or bulk samples with fan ON.



For powdered samples, fan can be turned OFF.



As a handheld unit

## Optional accessories list

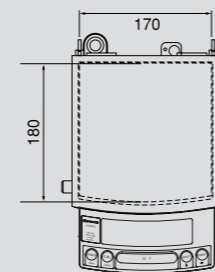
Balances	Optional accessories
AUW-D/ AUW / AUX / AUY Series	Electronic Printer EP-80 / EP-90
	Foot Switch FSB-102TK (For taring)
	Foot Switch FSB-102PK (For printing)
	Specific Gravity Measurement Kit SMK-401
	Application Keyboard AKB-301
AW / AX/ AY Series	RS-232C Cable, for IBM PC/AT Compatibles, (25P-9P, Null modem, 1.5m)
	Electronic Printer EP-80 / EP-90
	Foot Switch FSB-102TK (For taring)
	Foot Switch FSB-102PK (For printing)
	Specific Gravity Measurement Kit SMK-301
	RS-232C Cable, for IBM PC/AT Compatibles, (25P-9P, Null modem, 1.5m)

Balances	Optional accessories
BL Series	Electronic Printer EP-80 / EP-90
	In-use Protective Cover (5 pcs)
	Simple Windbreak
	Lid for Simple Windbreak
EL / ELB Series	Electronic Printer EP-80 / EP-90
	RS-232C Interface IFB-102A
	Rechargeable Built-in Battery (Not for ELB Series)
	In-use Protective Cover (5 pcs)
	Specific Gravity Measurement Kit SMK-201 (Cannot be used with small-pan models)

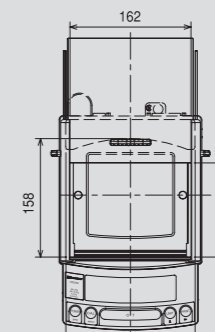
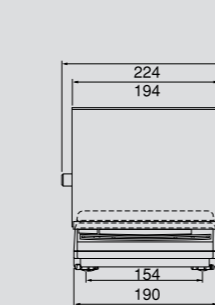
Balances	Optional accessories
UW / UX Series	Electronic Printer EP-80 / EP-90 ●
	RS-232C Interface IFB-102A (for multiple connection) ●
BW-K / BX-K Series (items with ● only)	Small Size Windbreak (for models with capacity of 300g to 620g only) (Std.Acc. for models with readability of 1mg)
	Glass Windbreak (for models with capacity of 220g to 820g only)
	Large Size Windbreak (for all models)
	Specific Gravity Measurement Kit SMK-101 (for models with capacity of 2200g and up only)
	Specific Gravity Measurement Kit SMK-102 (for models with capacity of 420g to 820g only)
	In-use Protective Cover (5 pcs)
	Comparator Lamps 100V (needs IFB-RY1 and RY1 Connection Cable)*
	Interface for comparator IFB-RY1 100V
	Foot Switch FSB-102PK (For printing) ●
	Foot Switch FSB-102TK (For taring)
	RS-232C Cable, for IBM PC/AT Compatibles, (25P-9P, Null modem, 1.5m)
	RS-232C Cable, for multiple connection (25P-25P, Null modem, 1.5m)
	Application Keyboard AKB-301 ●
	Remote Display Unit RDB-201 with operation keys
	Remote Display Unit RDB-202
Angle Adjuster and Wall Hook for Remote Display	
Stand for Remote Display (1m high)	

\* Not available in EU.

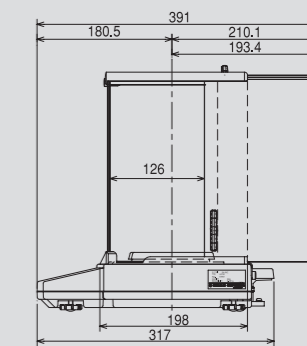
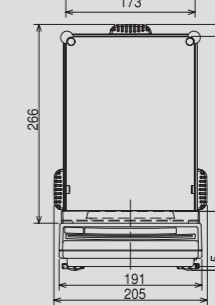
## Optional accessories Dimensions



UW/UX large-pan model with large size windbreak (optional accessory)



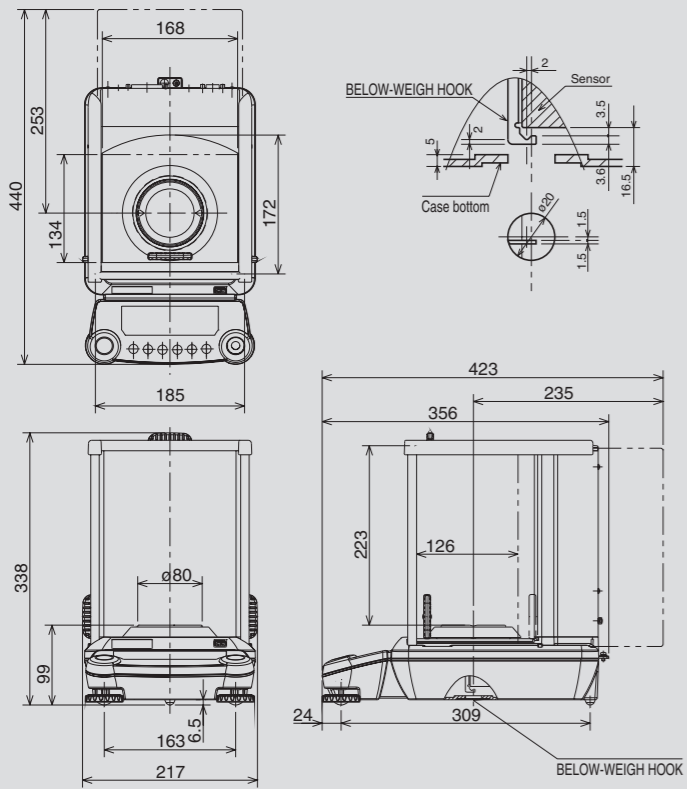
UW/UX small-pan model with glass windbreak (optional accessory)



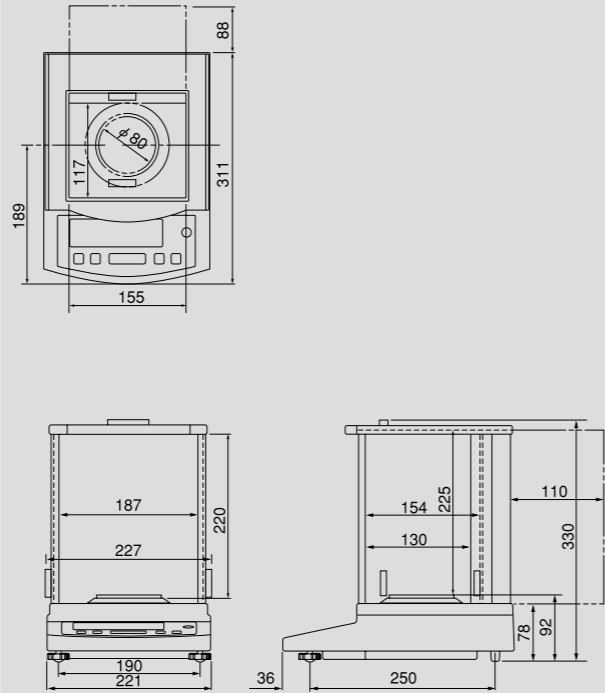
# Physical Dimensions

Measurements in mm. 1mm=.03937"

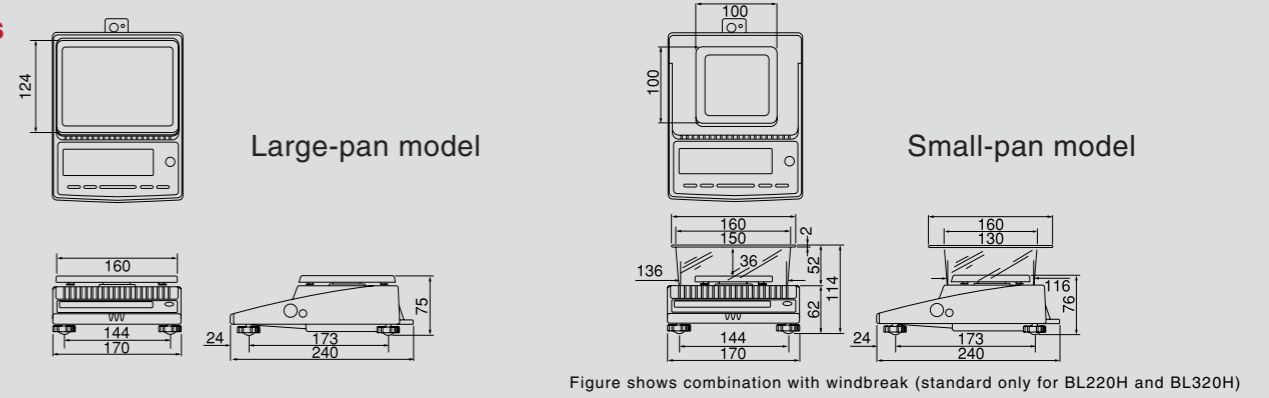
## AUW-D/AUW/AUX/AUY Series



## AW/AX/AY Series



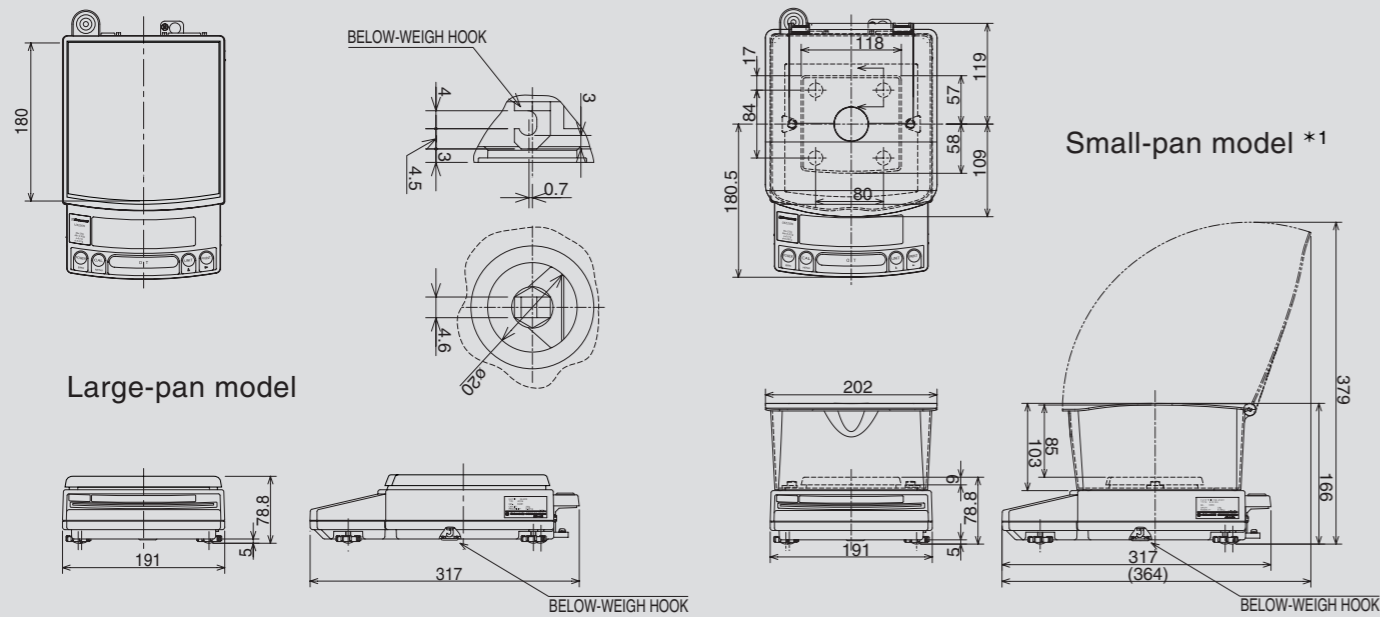
## BL Series



## EL/ELB Series

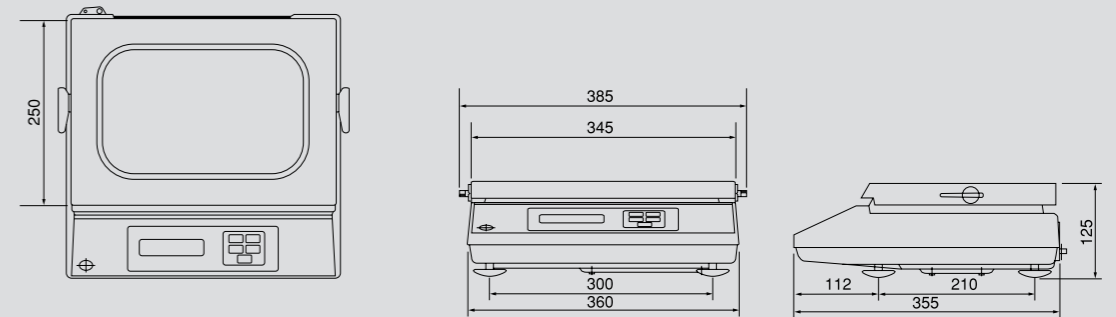


## UW/UX Series



\*1 Figure shows combination with simple windbreak (standard only for models with minimum display of 0.001g)  
\*1 The actually delivered windbreak may slightly differ in size and shape.

## BW-K Series



## BX-K Series

