Shimadzu Electronic Balances General Catalog

SHIMADZU
Excellence in Science

C054-E032N

Shimadzu Electronic Balances General Catalog

SHIMADZU

Shimadzu Corporation
www.shimadzu.com/an/

Printed in Japan 4595-01203-50ANS

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)

1971 **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

2007 **TX / TXB** UniBloc Top-Loading Balance

2010 **ATX / ATY** UniBloc Analytical Balance

2011 **MOC63u** UniBloc Moisture Balance

SHIMADZU
ELECTRONIC BALANCES

Professional in Measurement

New Product

UniBloc Moisture Analyzer
MOC63u debut!!

Excellent performance for a wide variety of applications in multiple industries

Food
- Quality Assurance
- Harvest Inspection

Environmental
- Polluted Sludge Measurement
- Biofuel Measurement

Chemical
- Paint Quality Control
- Material Inspection

Pharmaceutical
- Drug Quality Assurance
- Cosmetics Inspection

AUW/AUX/AUY Series

UW/UX Series

TW/TX/TXB Series

BW-K/BX-K Series

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 WindowsDirect 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 MOC63u series, High-performance Moisture Analyzer with advantages of UniBloc and applicable for a wide application area.

Contents

Excellent performance for multiple industries

Capacity/Minimum display

Pharmaceutical industry

- Sample preparation in R&D laboratories
- Quality assurance of drugs
- Material inspection

AUW220D
Capacity: 220g/82g
Minimum Display: 0.1mg/0.01mg
► P.10

UW1020H
Capacity: 1020g
Minimum Display: 0.001g
► P.14

UW6200H
Capacity: 6200g
Minimum Display: 0.01g

MOC63u
Capacity: 60g
Minimum Display: 0.001g/0.01%
► P.22

Food industry

- Quality assurance of processed food
- Inspection for harvest before export
- Packaging final products

MOC63u
Capacity: 60g
Minimum Display: 0.001g/0.01%
► P.22

AUW220
Capacity: 220g
Minimum Display: 0.1mg
► P.12

TX3202L
Capacity: 3200g
Minimum Display: 0.01g
► P.16

Chemical industry

- Reagent preparations
- Manufacturing process inspection

AUW220
Capacity: 220g
Minimum Display: 0.1mg
► P.12

UX420H
Capacity: 420g
Minimum Display: 0.001g

UX4200H
Capacity: 4200g
Minimum Display: 0.01g
► P.14

MOC63u
Capacity: 60g
Minimum Display: 0.001g/0.01%
► P.22

Electronic and semiconductor

- Piece counting for small parts in factories
- Measurement of thin film on the surface of silicon wafer
- Pass/fail by checkweighing

ATX224
Capacity: 220g
Minimum Display: 0.1mg
► P.13

UX420H
Capacity: 420g
Minimum Display: 0.001g

UX4200H
Capacity: 4200g
Minimum Display: 0.01g
► P.14

TX323L
Capacity: 320g
Minimum Display: 0.001g

TX3202L
Capacity: 3200g
Minimum Display: 0.01g
► P.16

BL320H
Capacity: 320g
Minimum Display: 0.001g
► P.19

ELB300
Capacity: 300g
Minimum Display: 0.01g
► P.20

Jewelry market

- Jewelry making
- In retail shop
- Purity check

TXC623L / TWC623L
Capacity: 620ct
Minimum Display: 0.001ct
► P.17

TX323L
Capacity: 320g
Minimum Display: 0.001g

TX3202L
Capacity: 3200g
Minimum Display: 0.01g
► P.17

UX420H
Capacity: 420g
Minimum Display: 0.001g

UX4200H
Capacity: 4200g
Minimum Display: 0.01g
► P.14

TXB622L
Capacity: 620g
Minimum Display: 0.01g
► P.17

Quick reference by capacity and minimum display

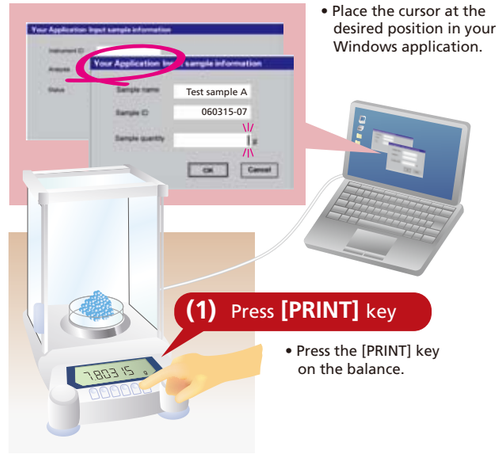
Capacity \ Minimum display	0.01mg	0.1mg	0.001g	0.01g	0.1g		1g
30g	AUW120D*	*Semi-micro Balances (P.11)*					
50g	AUW220D*	ATX84 ATY64					
100g		AUW120D* AUW/AUX/AUY120 AW/AX/AY120 ATX/ATY124		ELB120			
200g		AUW220D* AUW/AUX/AUY220 ATX/ATY224 AW/AY220 AX200	UW/UX220H BL220H TX/TW223L	ELB200 TXB222L			
300g	*Analytical Balances (P.12, P.13 and P.19)*	AUW/AUX320 AW320	BL320H TX/TW323L	ELB300 BL320S			
400g			UW/UX420H TX/TW423L	UW/UX420S TXB422L			
600g			UW/UX620H UW/UX820H UW/UX1020H	BL620S TXB622L UW/UX820S	ELB600 TXB621L	ELB600S	
1200g						ELB1200	*Portable Electronic Balances (P.20)*
2000g				UW/UX2200H BL2200H TX2202L	TXB2201L	ELB2000	
3000g				BL3200HL BL3200H TX3202L		ELB3000 BL3200S	
4000g		*Top-loading Balances* *UW/UX Series (P.14)* *TW/TX/TXB/TWC/TXC (P.16 and P.17)* *BL Series (P.19)*		UW/UX4200H TX4202L	TXB4201L	UW/UX4200S	
6000g				UW/UX6200H	TXB6201L	UW/UX8200S	ELB6000S TXB6200L
10000g						BW/BX12KH BW/BX22KH BW/BX32KH	ELB12K BW/BX32KS BW/BX52KS

Precision Platform Balances (P.18)

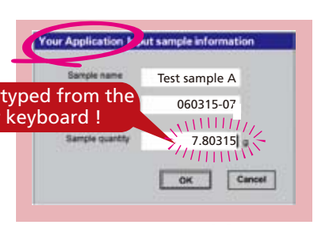
*Dual-range models appearing twice for both ranges.

UniBloc Family of Balances

WindowsDirect ***Experience it!***



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

If you'd like to use "WindowsDirect" with "Windows 7" "Windows Vista", or USB port, please contact to our distributors.

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.9)
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.

Easy Setting
Best fit to weighing application

Menu Operation Key
Easy to operate key layout

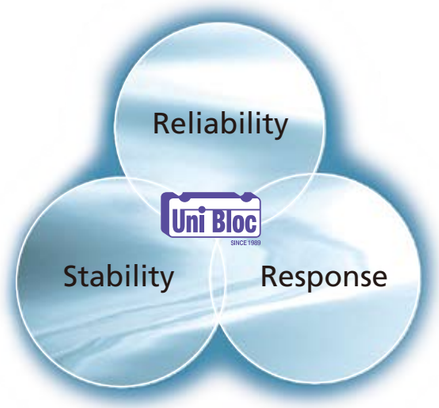
UniBloc Family of Balances

UniBloc Analytical Balances
AUW-D series dual-range semi-micro balances
AUW/AUX/AUY series
ATX/ATY series

UniBloc Top-loading Balances
UW/UX/TW/TWC/TX/TXC series

UniBloc Precision Platform Balances
BW-K/BX-K series

UniBloc Electronic Moisture Balances
MOC-120H/MOC63u



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 consistancy 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 0.01 mg to precision platform balances up to 52 kg 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.

  WindowsDirect works with Windows® 95, 98, NT4.0, 2000, ME and XP.
  PC must be IBM PC/AT compatible.

  If you'd like to use "WindowsDirect" with "Windows 7" "Windows Vista", or USB port, please contact to our distributors.
- Piece counting, various mass units, below-weigh hook, specific gravity measurement software are all standard features.

Dual-range semi-micro balances

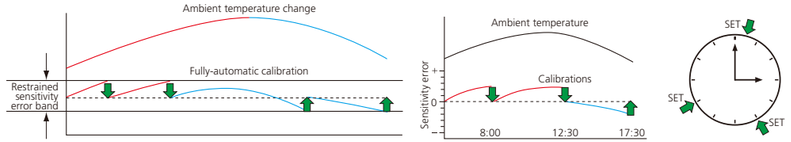
AUW-D Series

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.9)

Weighed data can be directly typed into any Windows application and no interface software is required.
If you'd like to use "WindowsDirect" with "Windows 7" "Windows Vista", or USB port, please contact to our distributors.

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 Analytical Balances

Analytical Balances

AUW/AUX/AUY Series

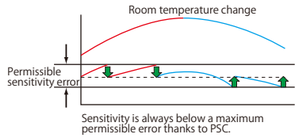
AUW

AUX

AUY

AUW/AUX/AUY models are the 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 model 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)
Meets requirements of GLP/GMP/ISO9000. Calibration reports can be output with date and time, provided by the built-in clock.

WindowsDirect (See p.9)
Weighed data can be directly typed into any Windows application and no interface software is required. If you'd like to use "WindowsDirect" with "Windows 7" "Windows Vista", or USB port, please contact to our distributors.

Data transfer port of AUW/AUX/AUY Series

Backlight LCD (AUW model only)
LCD with backlight can be read with ease and comfort under any lighting condition.

Static Remover STABLO-EX (p.25)

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

Analytical Balances

ATX/ATY Series

New ATX

New ATY

High specification and low cost with UniBloc.

Touch-key calibration
Automated calibration can be started by pressing keys. (ATX series)
Also, your external calibration weights can be used for span calibration. (All models)

Easy Setting Best fit to weighing application
Quickly adjust the desired ratio of stability and response for every application, even during measurement, with one-touch operation.

Expanded Piece Counting function
Unit weights of up to 5 different samples can be easily entered, stored and recalled for use.

Comparator function
Compare samples to target values or pass/fail criteria and clearly indicate the results.

Formulation mode
Convenient for making many measurements of minute samples and seeking the total mass.

WindowsDirect Communication Function
Send balance data to Excel or other Windows applications without any data communication software installation required. By combining standard AutoPrint functions with typical spreadsheet functions, even difficult applications can be easily automated
*I/O–RS cable is needed.

Very large size pan
It enables the use of a large flask. (91 dia)

Data transfer port of ATX/ATY Series

Model	Capacity	Minimum display	Pan Size (mm) approx.	Main Body Dimensions (mm) approx.	Weight (kg) approx.	Power Requirement	Internal Calibration
ATX84	82 g	0.1mg	91 dia	213(W)×356(D)×338(H)	6.2	12V, 1A	✓
ATX124	120 g	0.1mg	91 dia	213(W)×356(D)×338(H)	6.2	12V, 1A	✓
ATX224	220 g	0.1mg	91 dia	213(W)×356(D)×338(H)	6.2	12V, 1A	✓
ATY64	62 g	0.1mg	91 dia	213(W)×356(D)×338(H)	6.0	12V, 1A	
ATY124	120 g	0.1mg	91 dia	213(W)×356(D)×338(H)	6.0	12V, 1A	
ATY224	220 g	0.1mg	91 dia	213(W)×356(D)×338(H)	6.0	12V, 1A	

UniBloc Top-Loading Balances

Top-Loading Balances

UW/UX Series

UW

UX

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.

New Line up!

UW820H/UW1020H
UX820H/UX1020H

Large-pan model

Small-pan model
(minimum display 0.01g)

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

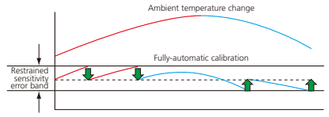
Select a target weight and tolerance. The display clearly indicates when they are reached.

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.

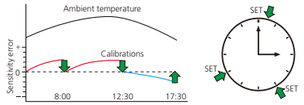
PSC, fully-automatic calibration (UW only)

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.



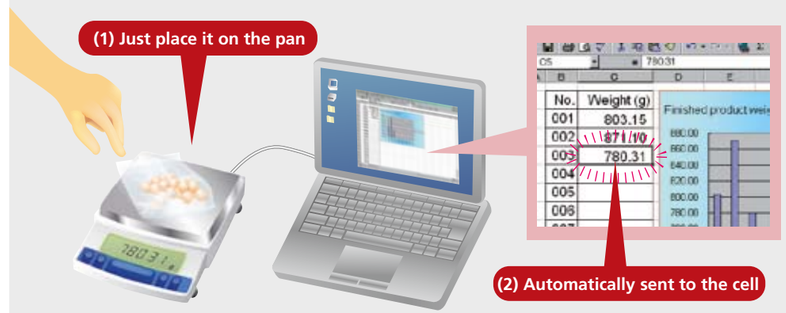
WindowsDirect (See p.9)

Weighed data can be directly typed into any Windows application and no interface software is required. If you'd like to use "WindowsDirect" with "Windows 7" "Windows Vista", or USB port, please contact to our distributors.

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



All that you need to add is **just one cable!**

No communication software is required!
Available as standard with
AUW-D/AUW/AUX/AUY,
ATX/ATY, UW/UX,
TW/TX/TWC/TXC/TXB,
BW-K/BX-K series,
MOC-120H, MOC63u

If you'd like to use "WindowsDirect" with "Windows 7" "Windows Vista", or USB port, please contact to our distributors.

Backlight LCD

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

Unit coversion 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.

Data transfer port of UW/UX Series

Model	Pan type	Capacity	Minimum display	Pan size (mm) approx.
UW220H*	Small-pan	220 g	0.001 g	108×105
UW420H*	Small-pan	420 g	0.001 g	108×105
UW620H*	Small-pan	620 g	0.001 g	108×105
New **UW820H**	Small-pan	820 g	0.001 g	108×105
New **UW1020H**	Small-pan	1020 g	0.001 g	108×105
UW2200H	Large-pan	2200 g	0.01 g	170×180
UW4200H	Large-pan	4200 g	0.01 g	170×180
UW6200H	Large-pan	6200 g	0.01 g	170×180
UW420S	Small-pan	420 g	0.01 g	108×105
UW820S	Small-pan	820 g	0.01 g	108×105
UW4200S	Large-pan	4200 g	0.1 g	170×180
UW8200S	Large-pan	8200 g	0.1 g	170×180

Model	Pan type	Capacity	Minimum display	Pan size (mm) approx.
UX220H*	Small-pan	220 g	0.001 g	108×105
UX320G	Small-pan	320 g	0.001 g	108×105
UX420H*	Small-pan	420 g	0.001 g	108×105
UX620H*	Small-pan	620 g	0.001 g	108×105
New **UX820H**	Small-pan	820 g	0.001 g	108×105
New **UX1020H**	Small-pan	1020 g	0.001 g	108×105
UX2200H	Large-pan	2200 g	0.01 g	170×180
UX3200G	Large-pan	3200 g	0.01 g	170×180
UX4200H	Large-pan	4200 g	0.01 g	170×180
UX6200H	Large-pan	6200 g	0.01 g	170×180
UX420S	Small-pan	420 g	0.01 g	108×105
UX820S	Small-pan	820 g	0.01 g	108×105
UX4200S	Large-pan	4200 g	0.1 g	170×180
UX8200S	Large-pan	8200 g	0.1 g	170×180

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

UniBloc Top-Loading Balances

Top-Loading Balances

TW/TX/TXB Series

TW/TX series only

TW

TX

TXB

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

Internal Calibration (TW series only)

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

Easy Setting

Easy Setting Best fit to weighing application

Quickly adjust the desired ratio of stability and response for every application, even during measurement, with one touch operation.provided by the built-in clock.

Menu Operation Key

Menu Operation Key Easy to operate key layout

Menu navigation keys are separated from weighing operation keys and arranged in a familiar 5-way navigation circle. Up, Down, Right, Left and Enter are the simple steps of menu operation.

WindowsDirect (*See* p.9)

Weighed data can be directly typed into any Windows application and no interface software is required.
If you'd like to use "WindowsDirect" with "Windows 7" "Windows Vista", or USB port, please contact to our distributors.

Can be used anywhere with battery power (TXB only)

Battery power the TXB series balances by AC adapter or batteries.

Power saving function

If you don't operate for a given length time, power (TXB) or display (TX) can be turned off automatically.

Model	Pan type	Capacity	Minimum display	Pan size (mm) approx.
TX223L	Small-pan	220 g	0.001 g	ø110
TX323L	Small-pan	320 g	0.001 g	ø110
TX423L	Small-pan	420 g	0.001 g	ø110
TX2202L	Large-pan	2200 g	0.01 g	167(W)×181(D)
TX3202L	Large-pan	3200 g	0.01 g	167(W)×181(D)
TX4202L	Large-pan	4200 g	0.01 g	167(W)×181(D)
TW223L	Small-pan	220 g	0.001 g	ø110
TW323L	Small-pan	320 g	0.001 g	ø110
TW423L	Small-pan	420 g	0.001 g	ø110

Model	Pan type	Capacity	Minimum display	Pan size (mm) approx.
TXB222L	Small-pan	220 g	0.01 g	ø110
TXB422L	Small-pan	420 g	0.01 g	ø110
TXB622L	Small-pan	620 g	0.01 g	ø110
TXB2201L	Large-pan	2200 g	0.1 g	ø160
TXB4201L	Large-pan	4200 g	0.1 g	ø160
TXB6201L	Large-pan	6200 g	0.1 g	ø160
TXB621L	Small-pan	620 g	0.1 g	ø110
TXB6200L	Large-pan	6200 g	1 g	ø160

Jewelry & Gold Balances

TWC/TXC/TW/TX/TXB Series

TWC/TXC/TW/TX series only

TWC

TXC

TW

TX

TXB

Weighing gold in a local unit

Various weighing units including Tael (Hong Kong, Taiwan, Singapore, Malaysia, China) plus user-defined unit are available.

Counting coins or parts

Piece counting function is standard.

Pass/fail checkweighing

According to the user-preset thresholds, GO (pass), HI (over) or LO (under) will be displayed.

Production/sales management using computer

WindowsDirect function directly types the weighed results to any Windows application you are using (e.g. Excel) without interface software required. (TX series)
If you'd like to use "WindowsDirect" with "Windows 7" "Windows Vista", or USB port, please contact to our distributors.

Data transfer port of TWC/TXC/TW/TX Series

Data transfer port of TXB Series

Internal Calibration (TW/TWC series only)

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

Battery operation (TXB)

TXB may be operated with dry batteries. Suitable for sites where reliable power supply is not available.

*1 If you need PSC or timer calibration, please select UW series.
*2 If a second display is required, please select UX/UW series.

Model	Capacity	Minimum display	Pan size (mm) approx.
TXC323L	320 ct	0.001 ct	80 dia
TXC623L	620 ct	0.001 ct	80 dia
TWC323L	320 ct	0.001 ct	80 dia
TWC623L	620 ct	0.001 ct	80 dia
TX223L	220 g	0.001 g	110 dia
TX323L	320 g	0.001 g	110 dia
TX423L	420 g	0.001 g	110 dia
TX2202L	2200 g	0.01 g	167(W)×181(D)
TX3202L	3200 g	0.01 g	167(W)×181(D)
TX4202L	4200 g	0.01 g	167(W)×181(D)
TW223L	220 g	0.001 g	110 dia
TW323L	320 g	0.001 g	110 dia
TW423L	420 g	0.001 g	110 dia

Model	Capacity	Minimum display	Pan size (mm) approx.
TXB222L	220 g	0.01 g	110 dia
TXB422L	420 g	0.01 g	110 dia
TXB622L	620 g	0.01 g	110 dia
TXB2201L	2200 g	0.1 g	160 dia
TXB4201L	4200 g	0.1 g	160 dia
TXB6201L	6200 g	0.1 g	160 dia
TXB621L	620 g	0.1 g	110 dia
TXB6200L	6200 g	1 g	160 dia

UniBloc Precision Platform Balances

Precision Platform Balances

BW-K/BX-K Series

BW-K

BX-K

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.

BW-K Series

Data transfer port of BW-K/BX-K Series

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.9)

Weighed data can be directly typed into any Windows application and no interface software is required.
If you'd like to use "WindowsDirect" with "Windows 7" "Windows VIista", or USB port, please contact to our distributors.

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	12 kg	0.1 g	345×250	Built-in
BW22KH	22 kg	0.1 g	345×250	Built-in
BW32KH	32 kg	0.1 g	345×250	Built-in
BW32KS	32 kg	1 g	345×250	Built-in
BW52KS	52 kg	1 g	345×250	Built-in

Model	Capacity	Minimum display	Pan size (mm) approx.	Calibration weight
BX12KH	12 kg	0.1 g	345×250	External
BX22KH	22 kg	0.1 g	345×250	External
BX32KH	32 kg	0.1 g	345×250	External
BX32KS	32 kg	1 g	345×250	External
BX52KS	52 kg	1 g	345×250	External

Analytical Balances, Top-Loading Balances

Analytical Balances

AW/AX/AY Series

AW

AX

AY

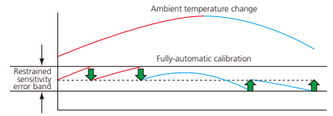
AW Series

AX Series

AY Series

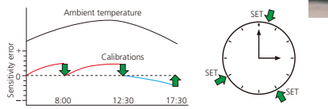
Fully-automatic calibration; PSC (AW only)

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.



Data transfer port of AW/AX/AY Series

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.9)

Weighed data can be directly typed into any Windows application and no interface software is required.
If you'd like to use "WindowsDirect" with "Windows 7" "Windows Vista", or USB port, please contact to our distributors.

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	320 g	0.1 mg	80 dia	✓	PSC, Clock-CAL, any time with key	✓
AW220	220 g	0.1 mg	80 dia	✓	PSC, Clock-CAL, any time with key	✓
AW120	120 g	0.1 mg	80 dia	✓	PSC, Clock-CAL, any time with key	✓
AX200	200 g	0.1 mg	80 dia	✓	any time with key touch	✓
AX120	120 g	0.1 mg	80 dia	✓	any time with key touch	✓
AY220	220 g	0.1 mg	80 dia			✓
AY120	120 g	0.1 mg	80 dia			✓

Top-Loading Balances

BL Series

BL3200HL only

High-resolution balances made affordable

Large-pan model

Small-pan model

Small-pan model with windbreak

BL3200HL

Quick response

Very fast response for operator comfort and efficiency.

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.

Data transfer port of BL Series

Model	Pan type	Capacity	Minimum display	Pan size (mm) approx.
BL220H *	Small-pan	220 g	0.001 g	100×100
BL320H *	Small-pan	320 g	0.001 g	100×100
BL2200H	Large-pan	2200 g	0.01 g	164×124
BL3200H	Large-pan	3200 g	0.01 g	164×124
BL3200HL	Large-pan	3200 g	0.01 g	164×124
BL320S	Small-pan	320 g	0.01 g	100×100
BL620S	Large-pan	620 g	0.01 g	164×124
BL3200S	Large-pan	3200 g	0.1 g	164×124

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

Portable Electronic Balances

Portable Electronic Balances

ELB Series

Optional battery operation 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)
Battery operation makes it portable

Data transfer port of ELB Series

Model	Pan type	Capacity	Minimum display	Calibration weight
ELB120	Small-pan	120 g	0.01 g	110 dia
ELB200	Small-pan	200 g	0.01 g	110 dia
ELB300	Small-pan	300 g	0.01 g	110 dia
ELB600	Large-pan	600 g	0.05 g	170×130
ELB600S	Large-pan	600 g	0.1 g	170×130
ELB1200	Large-pan	1,200 g	0.1 g	170×130
ELB2000	Large-pan	2,000 g	0.1 g	170×130
ELB3000	Large-pan	3,000 g	0.1 g	170×130
ELB6000S	Large-pan	6,000 g	1 g	170×130
ELB12K	Large-pan	12,000 g	1 g	170×130

Totally portable

This whole system can be operated with dry batteries.

Application Balances

UniBloc Electronic Moisture Balance

MOC-120H

Large sample pan and capacity allow any sample to be placed for the best drying conditions. Reliable UniBloc weighing mechanism and unique continuous auto-tare system assure accurate measurements.

Data transfer port of MOC-120H

MOC-120H with 130-mm sample pan

Large sample pan and continuous auto-tare 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 continuous auto-tare 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 can be predicted from the drying process, saving time in repeated measurements.

WindowsDirect (*See* p.9)
Complete sample data and instrument settings can be directly typed into any application on Windows and no interface software is required.
If you'd like to use "WindowsDirect" with "Windows 7" "Windows Vista", or USB port, please contact to our distributors.

Measuring method	Heat drying and weight loss
Sample pan size	130 mm dia
Sample pan material	Stainless steel
Minimum display in weighing	0.001 g
Measurement range of moisture content	0.01% to 100.00 %
Moisture content minimum display	0.01%
Sample capacity	120 g
Measurement modes	Automatic or Timed ending modes, Standard, Rapid, Slow and Step drying modes, Predictive Measuring mode
Drying heater	Mid-wave infrared quartz heater
Temperature range	30 to 200°C (by 1°C increments)
Digital output	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).
Dimensions	220W × 415D × 190H (mm)
Weight	4.5 kg
Operational temperature and humidity range	5 to 40°C, 85% RH or lower
Power requirements	AC100 to 127 / 220 to 240V, 640W maximum
Stored procedures	10
Standard accessories	Sample pan 2 pcs, Sample pan handler 2 pcs, Aluminum sheet 20 pcs, Spoon, Spatula
Optional accessories	Temperature calibration kit, Electronic printer, RS-232C Cable
Consumables	Aluminum sheet 500 pcs, Printer paper for optional electronic printer

Read instruction manual and understand before use of this instrument.
- Use this instrument for measurements in which water vaporizes from the sample under heating.
- The temperature of the heater installed in this instrument becomes higher than the set heating temperature for the sample.
- Any sample that is explosive, inflammable or may cause hazardous reaction under heating must not be measured with this instrument.

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.

Application Balances

UniBloc Electronic Moisture Balance

New **MOC63u**

Easy operation —Automatic starting mode

Easy-to-operate software and key layout. Automatic starting mode saves measurement time.

Backlight display

Illuminated display provides comfortable display visibility in all settings.

Compact design

MOC63u is one of the most compact instruments in its class. Width is only 202 (mm).

Large pan size

Large sample pan: 95-mm diameter

Long lifetime halogen heater

Halogen heater promises you quick and accurate measurement.

Data management —WindowsDirect and USB connection

The measurement conditions and data can be stored in MOC63u. Data I/O for printer, RS-232C and USB connection for PC are available as standard. Send balance data to Excel or other Windows applications.

Data transfer port of MOC63u

Maintenance

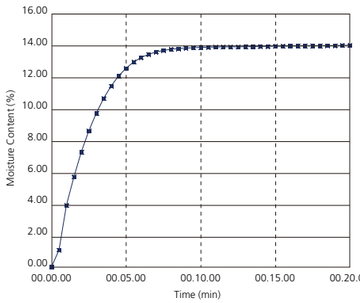
It's very easy to clean up and replace the halogen lamp.

Measurement data

With WindowsDirect

For food industry

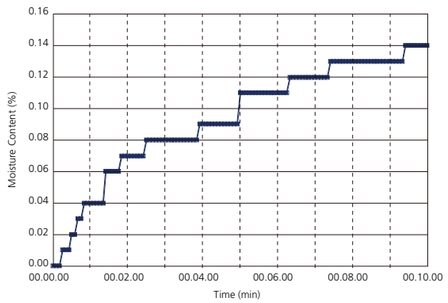
Measurement data of soft flour



Soft flour

For chemical industry

Measurement data of resin pellet



Resin pellet

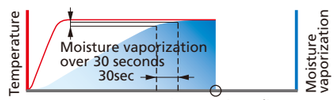
Measurement modes of MOC63u

Choose the right measuring mode for your application.

Ending modes

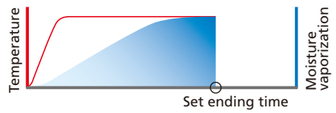
Automatic ending mode

Automatically ends measurement when moisture loss over the previous 30 seconds becomes smaller than specified percentage.



Timed ending mode

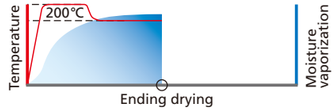
Automatically ends measurement when the specified amount of time has elapsed.



Alternate drying modes

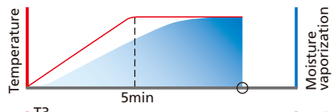
Rapid drying mode

First dries with the highest temperature for the specified period, then shifts to the specified temperature shortening measurement time.



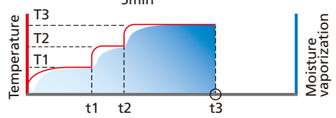
Slow drying mode

Gently heats samples that might solidify at the surface or samples that reduce under high temperature.



Step drying mode

Allows step-by-step changes in drying conditions. This feature is useful when measuring samples that contain a large amount of water.



Starting mode

Automatic starting mode

Starts measurement immediately after closing the lid. It will save time in repeated measurement.

Capacity	**Max**	60 g
	Min	0.02 g
Minimum readability		0.001 g
		0.01/0.1% (Selectable)
Repeatability		0.15% (2 g)
		0.05% (5 g)
		0.02% (10 g)
Drying Heater		Straight type halogen heater
Power		400 W
Temperature range setting		50–200°C (1°C increments) (There is a time restriction when exceeding 180°C.)
Display		LCD with backlight
Pan size		ø95 mm
Dimensions (W×D×H) mm		202 × 336 × 157
Weight		4 kg
Operational temperature and humidity range		5 to 40°C, 85%RH or lower

Measurement modes	Standard (Easy start/Automatic end/Timed end)
	Rapid drying (Easy start/Automatic end/Timed end)
	Slow drying (Easy start/Automatic end/Timed end)
	Step drying (Easy start/Automatic end/Timed end)
Timer setting	1–120 minutes or continuous (max 12 hours)
Interface	RS-232C (9-pin connector) I/O port
	USB port
Measurement conditions data memory	10
Data memory	100
Temperature calibration kit	Option

Application Balances

SMK Specific Gravity Measurement Kits

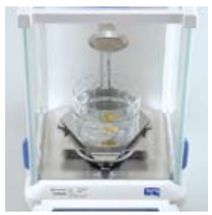
Simple specific gravity meters based on precision balances.

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 / AUY, AW / AX / AY, UW / UX, and 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 ELB Series).

SMK-101



SMK-401

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

A sinker is additionally needed for liquid density measurement.

Electronic Balances for Weighing Animals

Animal Balances

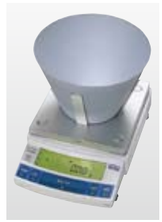
UW

UX

BW-K

BX-K

* When animal weighing mode is not used, all the functions indicated on p.14 and p.18 are available.



UW Series

BW-K plus Medium-size Animal Bucket

BW-K plus Large Animal Bucket

Dedicated software functions quick and reliable results in live animal weighing applications

Upon removing the weighed animal, the balance is automatically reset to zero regardless of deposited material. Display response and stability can be optimized for the level of animal movement conditions.

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

*1 Capacity is reduced about 2 kg.
*2 Capacity is reduced about 6 kg.

Optional Accessories

Electronic Printer

EP-80

EP-90

EP-80

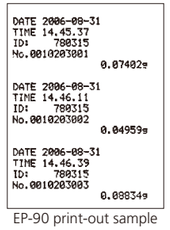
EP-90

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 with one 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

Shimadzu's unique 2-WAY ionizer

Hand-held / On stand

Secure static removal

The excellent ion polarity balance achieved by the alternating 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

Accessories for Shimadzu Balances

	AUW-D AUW AUX AUY	ATX ATY	AW AX AY	UW UX	TX	TXB	BL	ELB	BW-K BX-K	MOC-120H	MOC63u
EP-80 	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
EP-90 											
Printer for MOC-120H 										✓	
IFB-102A-UNC 	[no need]	✓	[no need]	[no need]	[no need]	[no need]	✓	✓	[no need]	[no need]	
I/O–RS Cable 	[no need]	✓	[no need]	[no need]	[no need]	[no need]	✓	✓	[no need]	[no need]	[no need]
AKB-301 Application key board 	✓			✓					✓		
Windbreak WBC-102 for UW/UX small-pan type				✓							
Large size windbreak WBC-502 for UW/UX Series 				✓							

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
	RS-232C Cable, for IBM PC/AT Compatibles (25P-9P, Null modem, 1.5m)
	In-use Protective Cover (5 pcs)
ATX / ATY Series	Electronic Printer EP-80 / EP-90
	IFB-102A-UNC
	USB Conversion Kit
	In-use Protective Cover (5 pcs)
	I/O–RS Cable
AW / AX / AY Series	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
TX / TW / TXB / TXC / TWC Series	Electronic Printer EP-80 / EP-90
	In-use Protective Cover (5 pcs)
	RS-232C Cable
BL Series	Electronic Printer EP-80 / EP-90
	In-use Protective Cover (5 pcs)
	Simple Windbreak
	Lid for Simple Windbreak
	IFB-102A-UNC
ELB Series	Electronic Printer EP-80 / EP-90
	RS-232C Interface IFB-102A-UNC
	In-use Protective Cover (5 pcs)
	Specific Gravity Measurement Kit SMK-201 (Cannot be used with small-pan models)

Balances	Optional accessories
BW-K / BX-K Series	Electronic Printer EP-80 / EP-90
	RS-232C Interface IFB-102A (for multiple connection)
	Foot Switch FSB-102PK (For printing)
	Application Keyboard AKB-301

		AUW-D AUW AUX AUY	ATX ATY	AW AX AY	UW UX	TX	TXB	BL	ELB	BW-K BX-K	MOC-120H	MOC63u
USB conversion kit with RS-232C cable		✓	✓	✓	✓	✓	✓	✓	✓	✓	*1	✓
Foot switch	for print **FSB-102PK**	✓			✓					✓		
	for TARE **FSB-102TK**	✓			✓					✓		
	for print **FSB-101P**			✓								
	for TARE **FSB-101T**			✓								
Specific gravity measurement kit	**SMK-101, -102** (*See* p. 24) 				✓							
	SMK-201 for ELB large-pan model								✓			
	SMK-301 (*See* p. 24) 			✓								
	SMK-401 (*See* p. 24) AUW Series with SMK-401	✓										
Battery for Balance The down trance is needed. 		✓	✓	✓	✓	✓	✓	✓		✓		
Interface for comparator IFB-RY1 					✓							
Comparator lamps 100V *2 (needs IFB-RY1 and RY1 Connection Cable) 					✓							
Comparator buzzer (needs IFB-RY1 and RY1 Connection Cable)					✓							

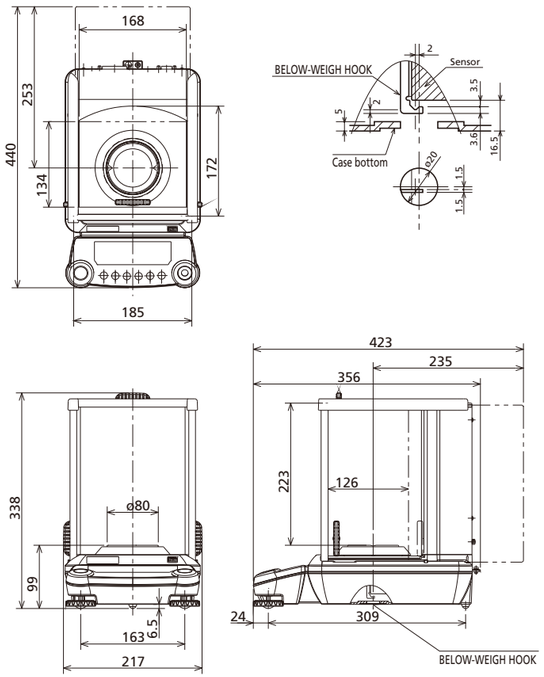
*1 USB serial adaptor and RS-232C cable for MOC are needed.
*2 Not available in EU.

Balances	Optional accessories	
UW / UX Series	Electronic Printer EP-80 / EP-90	Comparator Lamps 100V (needs IFB-RY1 and RY1 Connection Cable)*2
	RS-232C Interface IFB-102A (for multiple connection)	Interface for comparator IFB-RY1 100V
	Small Size Windbreak (for models with capacity of 300 to 620 g only) (Std Acc. for models with readability of 1 mg)	Foot Switch FSB-102PK (For printing)
		Foot Switch FSB-102TK (For taring)
	Glass Windbreak (for models with capacity of 220 to 820 g only)	RS-232C Cable, for IBM PC/AT Compatibles (25P-9P, Null modem, 1.5 m)
	Large Size Windbreak (for all models)	RS-232C Cable, for multiple connection (25P-25P, Null modem, 1.5 m)
	Specific Gravity Measurement Kit SMK-101 (for models with capacity of 2200 g and up only)	Application Keyboard AKB-301
		Remote Display Unit RDB-201 with operation keys
	Specific Gravity Measurement Kit SMK-102 (for models with capacity of 420 to 820 g only)	Remote Display Unit RDB-202
		Angle Adjuster and Wall Hook for Remote Display
	In-use Protective Cover (5 pcs)	Stand for Remote Display (1-m high)
MOC63u	Printer EP-80	Temperature calibration kit
	Printer EP-90	Sample pan (SUS)
	In-use protection cover for display (5 pcs)	RS-232C cable
	Aluminum sheet	USB connection cable
	Fiberglass sheet	Halogen heater for replacement

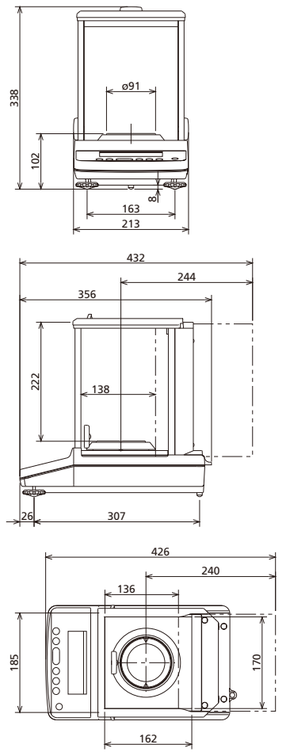
Physical Dimensions

Measurements in mm. 1mm=.03937"

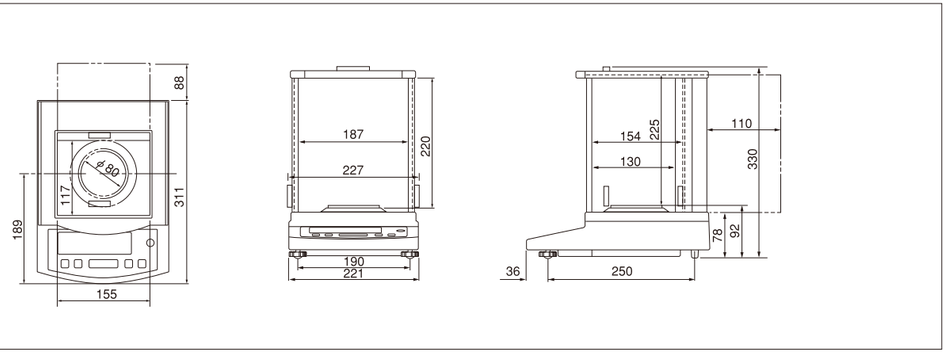
AUW-D/AUW/AUX/AUY Series



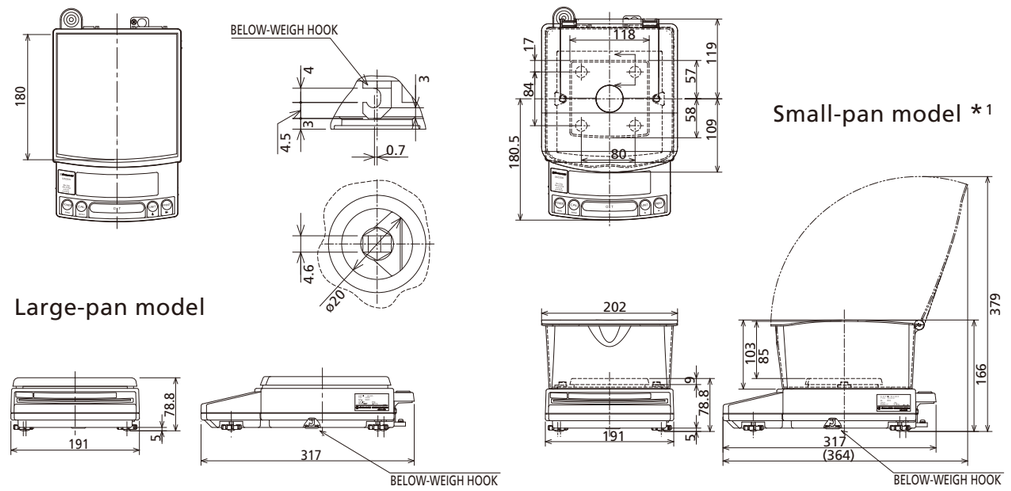
ATX/ATY Series



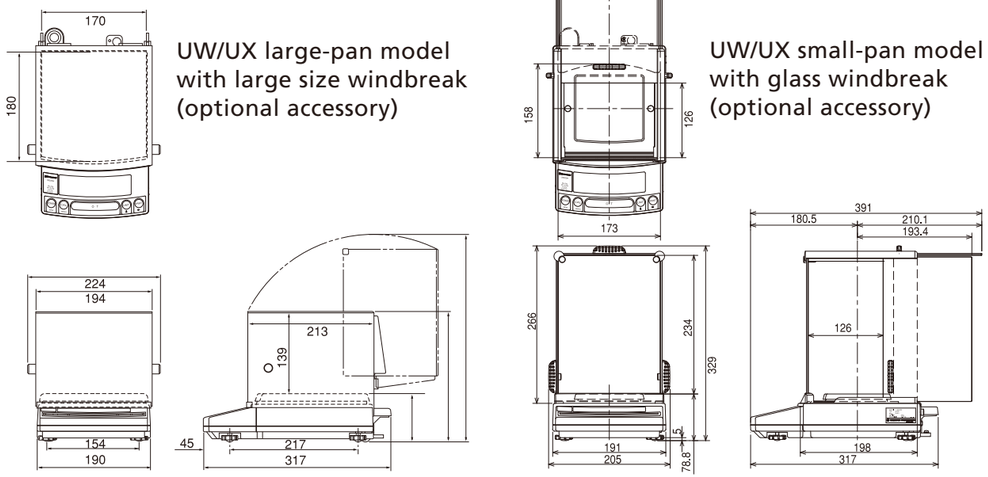
AW/AX/AY Series



UW/UX Series



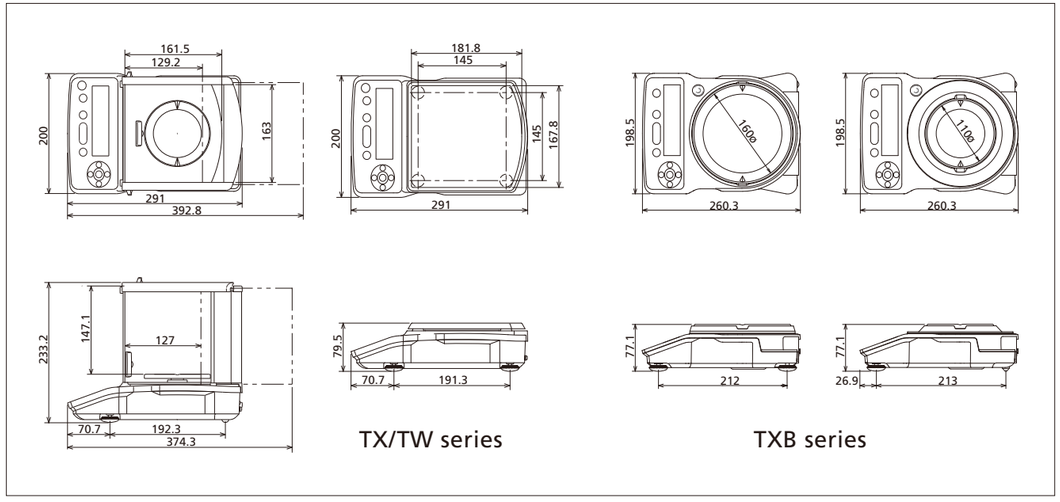
*1 Figure shows combination with simple windbreak (standard only for models with minimum display of 0.001g)
The delivered windbreak may differ slightly in size and shape.



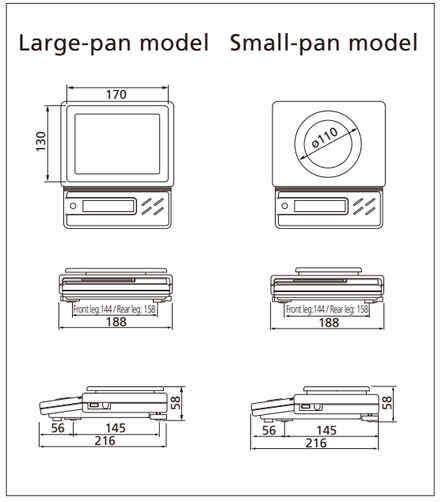
Physical Dimensions

Measurements in mm. 1mm=.03937"

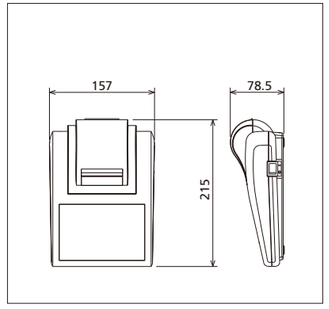
TW/TX/TXB/TWC/TXC Series



ELB Series



EP-80/EP-90



BL Series

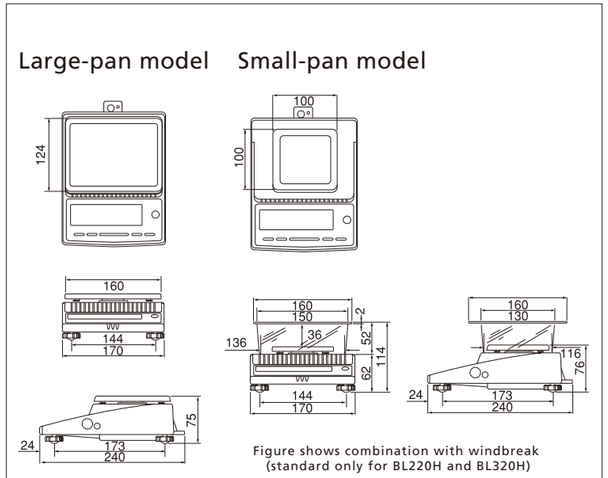
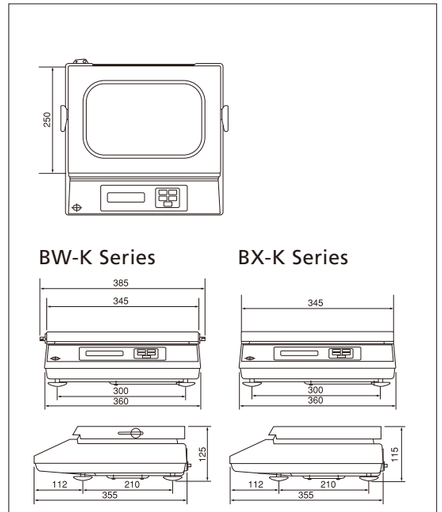
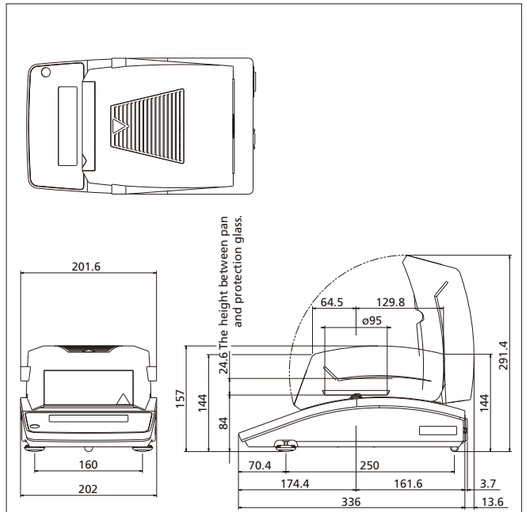


Figure shows combination with windbreak
(standard only for BL220H and BL320H)

BW-K/BX-K Series



MOC63u



MOC-120H