

# AS X2 Analytical Balances

'Advanced level' measurements, maximum operation comfort and countless display customization options



AS.X2, d = 0,01 mg



AS.X2, d = 0,1 mg



Communication interfaces



5" colour touch screen with customized keys layout

## Functions

Parts counting	Percent weighing	Density determination	GLP procedures	Ambient conditions measurement
Dosing	Statistics	Under hook weighing	Proximity sensors	Replaceable unit
Checkweighing	Animal weighing	Peak hold	Cooperation with titrators	Multilingual menu
Formulations	Autotest			

## Features

### High Quality Measurements and Weighing Performance

Combination of easy operation and excellent weighing accuracy makes AS X2 balances an ideal solution for most of the demanding applications in laboratory processes.

### Excellent Weighing Parameters and Comfort of Operation

Thanks to a clear and intuitive menu layout and 5" colour touch screen, maximum comfort and incredibly easy operation are both ensured.

### Customization via Widgets

AS X2 software enables designing screen widgets layout. Display customization allows you to run any selected function directly from the home screen.

### Numerous Options of Data Management

Extensive storage capacity enables record of all measurement data in a form of complex reports.

### Second to None Repeatability and Compliance with USP

AS X2 analytical balances feature the highest measurements accuracy, excellent repeatability and are compliant with USP requirements (Chapter 41 and 1251).

### Spacious Weighing Chamber

Large weighing chamber enables convenient operation using laboratory vessels of different dimensions.

### Touch-Free Operation

Two programmable proximity sensors can be assigned with any function or application. The given function when assigned is both run and operated touch-free.

## Technical Specifications

	AS 60/220.X2	AS 62.X2	AS 82/220.X2
Maximum capacity [Max]	60 g / 220 g	62 g	82 g / 220 g
Minimum load	1 mg	1 mg	1 mg
Readability [d]	0.01 mg / 0.1 mg	0.01 mg	0.01 mg / 0.1 mg
Verification scale interval [e]	1 mg	1 mg	1 mg
Tare range	–220 g	–62 g	–220 g
Repeatability (5% Max)*	0.015 mg (Rt ≤ 3 g)	0.015 mg (Rt ≤ 3 g)	0.015 mg (Rt ≤ 5 g)
Repeatability (Max)*	0.1 mg	0.03 mg	0.1 mg
Linearity	± 0.06 mg / ±0.2 mg	± 0.06 mg	± 0.06 mg / ±0.2 mg
Sensitivity temperature drift**	1 × 10 <sup>-6</sup> / °C × Rt	1 × 10 <sup>-6</sup> / °C × Rt	1 × 10 <sup>-6</sup> / °C × Rt
Minimum weight (U=1%, k=2)	3 mg	3 mg	3 mg
Minimum weight (USP)	30 mg	30 mg	30 mg
Stabilization time***	6 s / 2 s	6 s	6 s / 2 s
Adjustment	internal	internal	internal
Verification	Yes	Yes	Yes
OIML Class	I	I	I
Display	5" capacitive colour touch screen	5" capacitive colour touch screen	5" capacitive colour touch screen
Keypad	6 keys	6 keys	6 keys
Protection class	IP 43	IP 43	IP 43
Databases	7	7	7
Touch-free operation	2 programmable proximity sensors	2 programmable proximity sensors	2 programmable proximity sensors
USB-A	1	1	1
USB-B	1	1	1
RS 232	2	2	2
Wireless connection	802.11 b/g/n	802.11 b/g/n	802.11 b/g/n
Ethernet	10 / 100 Mbit	10 / 100 Mbit	10 / 100 Mbit
Power supply	12 ÷ 16 V DC	12 ÷ 16 V DC	12 ÷ 16 V DC
Power consumption	10 W	10 W	10 W
Operating temperature	+10 ÷ +40 °C	+10 ÷ +40 °C	+10 ÷ +40 °C
Atmospheric humidity****	40 ÷ 80%	40 ÷ 80%	40 ÷ 80%
Transport and storage temperature	–20 ÷ +50 °C	–20 ÷ +50 °C	–20 ÷ +50 °C
Weighing pan dimensions	ø 90 mm open-work ø 85 mm standard (option)*****	ø 90 mm open-work ø 85 mm standard (option)*****	ø 90 mm open-work ø 85 mm standard (option)*****
Weighing chamber dimensions	160 × 168 × 223 mm	160 × 168 × 223 mm	160 × 168 × 223 mm
Weighing device dimensions	333 × 206 × 355 mm	333 × 206 × 355 mm	333 × 206 × 355 mm
Net weight	5.3 kg	5.3 kg	5.3 kg
Gross weight	7.3 kg	7.3 kg	7.3 kg
Packaging dimensions	495 × 400 × 515 mm	495 × 400 × 515 mm	495 × 400 × 515 mm

Rt net weight

\* repeatability is expressed as a standard deviation from 10 weighing cycles

\*\* parameter determined in the following temperature range: +15 ÷ +35 °C

\*\*\* stabilization time depends on external conditions and dynamics of placing loads on a pan, determined for FAST profile

\*\*\*\* non-condensing conditions

\*\*\*\*\* ø 85 mm standard weighing pan on purchase order

Values of parameters provided in Technical Specifications table, have been determined under stable laboratory conditions. Due to ambient conditions impact or/and balance setup, the above parameters may vary for environments other than laboratory.

	AS 110.X2	AS 160.X2	#36273 AS 220.X2	AS 310.X2
Maximum capacity [Max]	110 g	160 g	220 g	310 g
Minimum load	10 mg	10 mg	10 mg	10 mg
Readability [d]	0.1 mg	0.1 mg	0.1 mg	0.1 mg
Verification scale interval [e]	1 mg	1 mg	1 mg	1 mg
Tare range	-110 g	-160 g	-220 g	-310 g
Repeatability (5% Max)*	0.07 mg (Rt ≤ 10 g)	0.07mg (Rt ≤ 10 g)	0.07 mg (Rt ≤ 10 g)	0.07 mg (Rt ≤ 15 g)
Repeatability (Max)*	0.1 mg	0.1 mg	0.1 mg	0.15 mg
Linearity	± 0.2 mg	± 0.2 mg	± 0.2 mg	± 0.3 mg
Sensitivity temperature drift**	$1 \times 10^{-6} / ^\circ\text{C} \times \text{Rt}$	$1 \times 10^{-6} / ^\circ\text{C} \times \text{Rt}$	$1 \times 10^{-6} / ^\circ\text{C} \times \text{Rt}$	$1 \times 10^{-6} / ^\circ\text{C} \times \text{Rt}$
Minimum weight (U=1%, k=2)	14 mg	14 mg	14 mg	14 mg
Minimum weight (USP)	140 mg	140 mg	140 mg	140 mg
Stabilization time***	2 s	2 s	2 s	2,5 s
Adjustment	internal	internal	internal	internal
Verification	Yes	Yes	Yes	Yes
OIML Class	I	I	I	I
Display	5" capacitive colour touch screen	5" capacitive colour touch screen	5" capacitive colour touch screen	5" capacitive colour touch screen
Keypad	6 keys	6 keys	6 keys	6 keys
Protection class	IP 43	IP 43	IP 43	IP 43
Databases	7	7	7	7
Touch-free operation	2 programmable proximity sensors	2 programmable proximity sensors	2 programmable proximity sensors	2 programmable proximity sensors
USB-A	1	1	1	1
USB-B	1	1	1	1
RS 232	2	2	2	2
Wireless connection	802.11 b/g/n	802.11 b/g/n	802.11 b/g/n	802.11 b/g/n
Ethernet	10 / 100 Mbit	10 / 100 Mbit	10 / 100 Mbit	10 / 100 Mbit
Power supply	12 ÷ 16 V DC	12 ÷ 16 V DC	12 ÷ 16 V DC	12 ÷ 16 V DC
Power consumption	10 W	10 W	10 W	10 W
Operating temperature	+10 ÷ +40 °C	+10 ÷ +40 °C	+10 ÷ +40 °C	+10 ÷ +40 °C
Atmospheric humidity****	40 ÷ 80%	40 ÷ 80%	40 ÷ 80%	40 ÷ 80%
Transport and storage temperature	-20 ÷ +50 °C	-20 ÷ +50 °C	-20 ÷ +50 °C	-20 ÷ +50 °C
Weighing pan dimensions	ø 100 mm	ø 100 mm	ø 100 mm	ø 100 mm
Weighing chamber dimensions	160 × 168 × 227 mm	160 × 168 × 227 mm	160 × 168 × 227 mm	160 × 168 × 227 mm
Weighing device dimensions	333 × 206 × 355 mm	333 × 206 × 355 mm	333 × 206 × 355 mm	333 × 206 × 355 mm
Net weight	5.3 kg	5.3 kg	5.3 kg	5.3 kg
Gross weight	7.3 kg	7.3 kg	7.3 kg	7.3 kg
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Rt net weight

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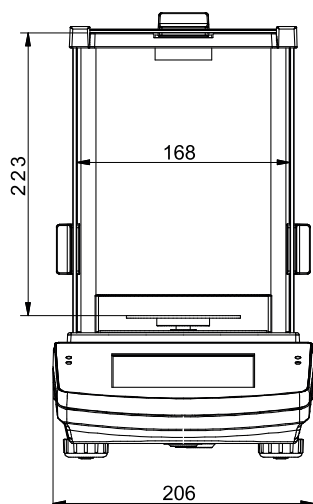
\*\* parameter determined in the following temperature range: +15 ÷ +35 °C

\*\*\* stabilization time depends on external conditions and dynamics of placing loads on a pan, determined for FAST profile

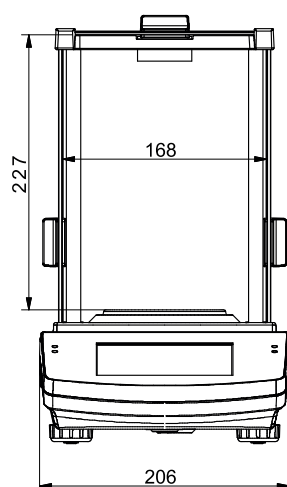
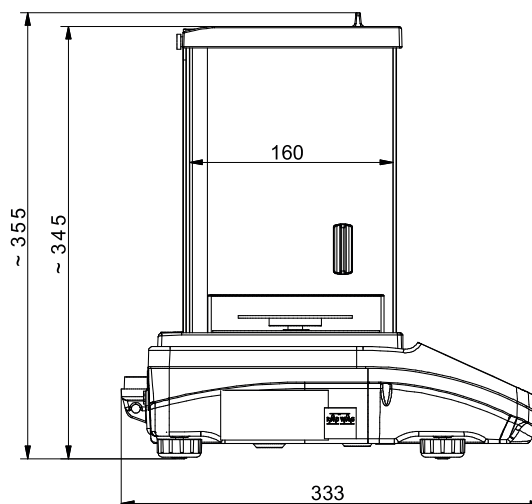
\*\*\*\* non-condensing conditions

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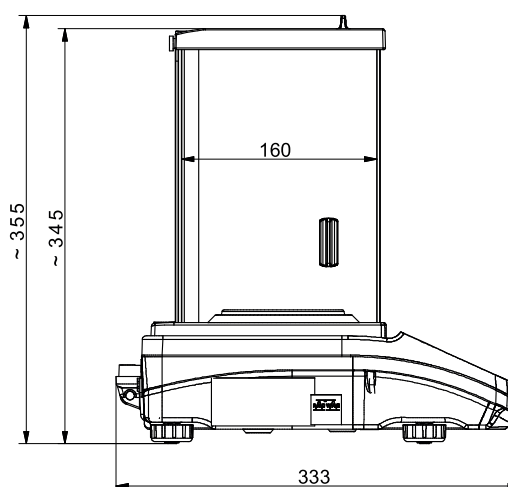
## Dimensions



AS X2, d = 0.01 mg



AS X2, d = 0.1 mg



## Accessories

### Weighing Tables

- granite antivibration table
- antivibration tables for laboratory balances
- professional weighing table
- workstation for pipettes calibration

### Professional Weighing

- laboratory ware holders
- KIT 85 density determination kit
- under-hook weighing rack

### Ambient Conditions

- DJ-04 anti-static ioniser
- THB-X ambient conditions modules

### Peripheral Devices

- Epson dot matrix printer
- barcode scanners
- WD-6 LCD display

### Cables, Converters

- P0108: RS 232 cable (balance-computer)
- P0151: RS 232 cable (balance - Epson printer)
- USB cable type A-B

### Electrical Accessories

- ZR-02 power supply with battery

## Dedicated Software

### LabView Driver

- operation of RADWAG balances in LabView environment

### Alibi Reader

- readout of data saved to Alibi memory
- export of data saved to Alibi memory
- data filtering and reports generating
- saving Alibi database to CSV file

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### R-LAB

- collecting measurements
- carrying out statistical analysis of measurements
- customized graphs and reports

[www.radwag.com](http://www.radwag.com)