RADWAG®

Balances & Scales

ARCHERCHEM INSTRUMENTS

Complete Laboratory Range

Laboratory balances

INNOVATIVE SOLUTIONS - NEW POSSIBILITIES

MICRO & ULTRA MICRO BALANCES
MYA 4Y / UYA 4Y

- PARTS COUNTING
- DOSING
- CHECKWEIGHING
- FORMULATION
- PERCENT WEIGHING [%]
- STATISTICS
- ANIMAL WEIGHING
- DIFFERENTIAL WEIGHING
- PIPETTES CALIBRATION
- SQC
- AUTOTEST
- AUTOMATIC DOOR
- AIR DENSITY CORRECTION
- GLP / GMP PROCEDURES
- INFRARED SENSORS
- AMBIENT COND. MONITORING
- UNITS

Electronic
Level Indicator

Functions:
- ALARM function
- graphic level indicator
- programmable acceptable tilts

Data exchange through
USB storage devices

- update balance software
- export weighing data
- export/import databases
- export/import balance settings
- exchange data between balances

INFRARED
PROXIMITY SENSORS

Optional Functions :
PRINT Function
TARE Function
sensor's sensitivity adjustment

Portability
Extra option :

Balances with
a wireless terminal

INTERFACES

- Ethernet
2 x USB
2 x RS 232
4 in / 4 out
WiFi 2, 4GHz b,g,n

New generation of ultra-microbalances UYA 4Y is designed to meet the highest requirements for determination of mass. Its built-in system of automatic internal adjustment/calibration maintains excellent measurement reliability and accuracy. The device comprises two major components (an indicator and a precise mechanical measuring system which are enclosed separately). Such design eliminates an influence of heat sourcing from instrument's electronics on its mechanical components and additionally protects it from shocks and vibrations caused by users operating the instrument. All the elements of a microbalance are made of glass and steel which eliminates an impact of electrostatics on weighing process.

- ✓ Innovative 2-point adjustment system
- ✓ Faster measurement with the new CPU
- ✓ Monitoring and elimination of electrostatics
- ✓ 8 GB RAM – more data management possibilities
- ✓ The best possible repeatability and USP regulations conformity
- ✓ Ergonomics and safety
- ✓ Remote control operation
- ✓ Data safety

APPLICATION

4Y series is a modern weighing device, especially useful when the measurement requires perfect accuracy and high speed.

ACCURACY

Measurement accuracy is guaranteed with an adjustment procedure carried out using an internal adjustment weight. This fully automatic process is controlled by a module intended to diagnose ambient conditions change (on-line). Adjustment processes (internal and external) can be performed in accordance with a specially designed schedule.

FUNCTIONALITY

4Y series microbalance is an optimized modern device which features an option of automatic level control (Level SENSING) as one of numerous functions. The practical effect of balance customization are individual user profiles and gradable permission levels for access to balance menu.Programmable proximity sensors offer wide range of possibilities: weighing chamber control, zeroing, tarring, printout. Several functions such as differential weighing facilitate multi-stage mass control of one and the same sample subjected to various processes. Pipettes calibration function is an ergonomic tool designed to calibrate and control piston pipettes with the use of gravimetric method. MEDIA module, as one of the greatest 4Y series assets, provides the user with an on-screen help and support.

COMPLIANCE WITH REGULATIONS

Owing to security system and possibility to document the process by means of printouts (standard/editable), the 4Y balance meets requirements imposed by GLP/GMP systems for various industries (pharmacy, petrochemistry, environmental protection).

MEDIA module

support within a reach of your hand A sheer novelty of 4Y microbalance is the MEDIA module. With it you can learn using videos providing information on any relevant matter. MEDIA module is a convenient way allowing you to broaden your knowledge on mass measurement but noe exlusively (recommendations, SOP, reminders, self-designed testing procedures).

Technical Specifications :

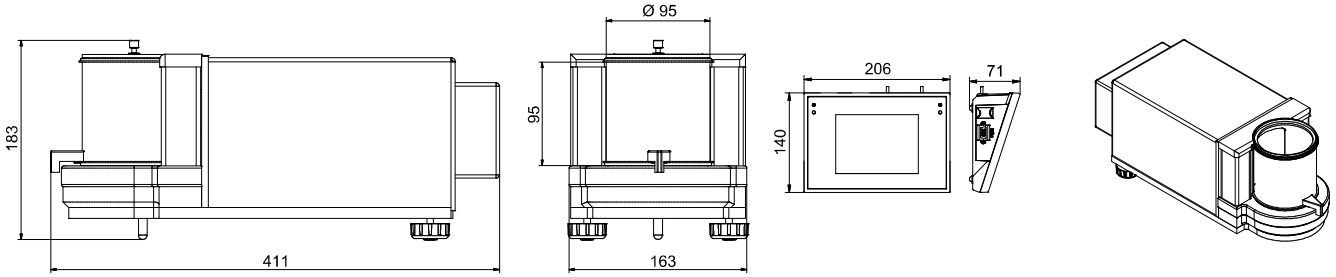
	UYA 2.4Y	MYA 2.4Y	MYA 5.4Y	MYA 11.4Y	MYA 21.4Y
Max load	2.1 g	2 g	5 g	11 g	21 g
Readability	0.1 µg	1 µg	1 µg	1 µg	1 µg
Repeatability *	0.4 µg (0.2 ~1g) 0.6 µg (1~2g)	1 µg	1 µg (Rt ≤ 2g) 1.6 µg (2g < Rt ≤ 5.1g)	1.5 µg (Rt ≤ 0.2g) 2.0 µg (0.2g < Rt ≤ 5g) 2.5 µg (5g < Rt ≤ 11g)	1.5 µg (Rt ≤ 0.2g) 2.0 µg (0.2g < Rt ≤ 5g) 2.5 µg (5g < Rt ≤ 11g) 3.0 µg (11g < Rt ≤ 21g)
Linearity	±1.5µg	±3 µg	±5 µg	±6 µg	±7 µg
Eccentric load deviation	1.5µg	3 µg	5 µg	6 µg	7 µg
Sensitivity offset	$1,5 \times 10^{-6} \times$ Rt	$1,5 \times 10^{-6} \times$ Rt	$1,5 \times 10^{-6} \times$ Rt	$3 \times 10^{-6} \times$ Rt	$4 \times 10^{-6} \times$ Rt
Sensitivity temperature drift	1×10^{-7} °C × Rt	1×10^{-7} °C × Rt	1×10^{-7} °C × Rt	1×10^{-7} °C × Rt	1×10^{-7} °C × Rt
Sensitivity stability		1×10^{-7} Rok × Rt	1×10^{-7} Rok × Rt	1×10^{-7} Rok × Rt	1×10^{-7} Rok × Rt
Minimum weight (USP)	0.9 mg	2 mg	2 mg	3,0 mg	3,0 mg
Minimum weight (U = 1%, k = 2)	0.08 mg	0,2 mg	0,2 mg	0,3 mg	0,3 mg
Pan size	ø 16 mm	ø 16 mm	ø 26 mm	ø 26 mm	ø 26 mm
Weighing chamber dimensions	ø 90 × 90 mm				
Stabilization time	10-20s	5 s			
Adjustment/Calibration	automatic (internal)				
Power supply	13,5 ~ 16 V DC / 2,1 A				
Casing of the terminal	ABS plastic				
Display	colour 5,7"(640x480) with a resistive touch screen				
Processor	2 × 1 GHz				
Memory	RAM: 256 MB DDR2, flash: 8 GB microSD				
Interface	2×USB host, 2×RS 232, Ethernet 10/100 Mbit, WiFi 802.11 b,g,n				
Audio module	YES (voice messages support)				
Video support	YES (videos and multimedia instructions)				
IN / OUT	4 in / 4 out (digital)				
Ambient conditions					
Working temperature	+10 ° ~ +30 °C		+10 ° ~ +40 °C		
Change rate of working temperature	±0,3°C/1h (±0.5°C/12h)		±0,3 °C/h (±1 °C/8h)		
Atmospheric humidity	40% ~ 80%		40% ~ 80%		
Change rate of atmospheric humidity	40% ~ 60% (±5% / 4h)		±1%/h (±4%/8h)		

Rt - net weight

* Repeatability is expressed as a standard deviation from 10 weighing cycles.

Data given in tables are values determined in typical laboratory conditions. In the actual operation conditions the values of these parameters may differ from those listed above because of the impact of ambient conditions and/or balance settings.

Dimensions :



ANALYTICAL BALANCES
XA 4Y Series

PARTS COUNTING
DOSING
CHECKWEIGHING
FORMULATION
PERCENT WEIGHING [%]
STATYSTICS
ANIMAL WEIGHING
DIFFERENTIAL WEIGHING
PIPETTES CALIBRATION
STATISTICAL QUALITY CONTROL
AUTOTEST
DENSITY
AIR DENSITY CORRECTION
COOPERATION WITH TITRATORS
GLP / GMP PROCEDURES
INFRARED SENSORS
AMBIENT COND. MONITORING
UNITS
MOVABLE RANGE

Electronic
Level Indicator

Functions:
- ALARM function
- graphic level indicator
- programmable acceptable tilts

Data exchange through
USB storage devices

- update balance software
- export weighing data
- export/import databases
- export/import balance settings
- exchange data between balances

OPTIONAL :
INFRARED PROXIMITY SENSORS

Optional Functions :
PRINT Function
TARE Function
sensor's sensitivity adjustment

INTERFACES

- Ethernet
2 x USB
2 x RS 232
4 in / 4 out
WiFi 2, 4GHz b,g,n

New generation of XA Series is designed to meet the highest requirements for determination of mass. Its built-in system of automatic internal adjustment/calibration maintains excellent measurement reliability and accuracy. The device comprises two major components (an indicator and a precise mechanical measuring system which are enclosed separately). Such design eliminates an influence of heat sourcing from instrument's electronics on its mechanical components and additionally protects it from shocks and vibrations caused by users operating the instrument.

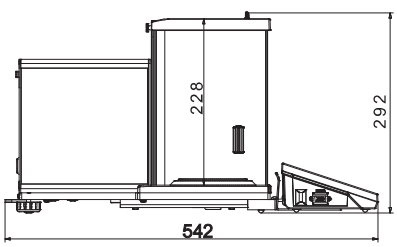
Above all it carries all the features of 4Y Series.

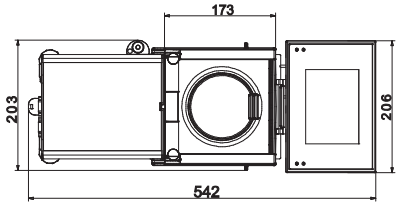
- ✓ Innovative 2-point adjustment system
- ✓ Faster measurement with the new CPU
- ✓ Monitoring and elimination of electrostatics
- ✓ 8 GB RAM – more data management possibilities
- ✓ The best possible repeatability and USP regulations conformity
- ✓ Ergonomics and safety
- ✓ Remote control operation
- ✓ Data safety

	XA 52.4Y M	XA 110.4Y M	XA 210.4Y M	XA 82/220.4Y** M	XA 120/250.4Y
Max capacity	52 g	110 g	210 g	82/220 g	120/250 g
Min load	1 mg	1 mg	1 mg	1 mg	1 mg
Readability	0,01 mg	0,01 mg	0,01 mg	0,01/0,1 mg	0,01/0,1 mg
Tare range	-52 g	-100 g	-210 g	-220 g	-250 g
Working temperature	+10° ~ +40°C				
Relative air humidity ***	40% ~ 80%				
Repeatability *	0.01 mg (Rt ≤ 20g) 0.12 mg (20 g < Rt ≤ 52 g)	0.01 mg (Rt ≤ 20g) 0.02 mg (20 g < Rt ≤ 50 g) 0.25 mg (50 g < Rt ≤ 82 g) 0.03 mg (82 g < Rt ≤ 110 g)	0.01 mg (Rt ≤ 20g) 0.02 mg (20 g < Rt ≤ 50 g) 0.25 mg (50 g < Rt ≤ 82 g) 0.03 mg (82 g < Rt ≤ 100 g) 0.04 mg (100 g < Rt ≤ 210 g)	0.01 mg (Rt ≤ 20g) 0.02 mg (20 g < Rt ≤ 50 g) 0.25 mg (50 g < Rt ≤ 82 g) 0.08 mg (82 g < Rt ≤ 220 g)	0.01 mg (Rt ≤ 20g) 0.02 mg (20 g < Rt ≤ 50 g) 0.25 mg (50 g < Rt ≤ 82 g) 0.03 mg (82 g < Rt ≤ 120 g) 0.08 mg (120 g < Rt ≤ 250 g)
Linearity	±0,03 mg	±0,06 mg	±0,1 mg	±0,06/0,2 mg	±0,06/0,2 mg
Eccentric load deviation	0,03 mg	0,06 mg	0,1 mg	0,2 mg	0,2 mg
Sensitivity offset	$2 \times 10^{-6} \times Rt$				
Sensitivity temperature drift	1×10^{-6} / °C × Rt				
Sensitivity time drift	1×10^{-6} / Year × Rt				
Minimum weight (USP)	20 mg	20 mg			
Minimum weight (U = 1%, k = 2)	2 mg	2 mg			
Stabilization time	~ 4 s				
Interface	2×USB, 2×RS 232, 1×Ethernet, Wi-Fi 802.11 b/g/n, 4in / 4out (digital)				
Power supply	13,5 ~ 16 V DC / 2,1 A				
Adjustment / Calibration	internal (automatic)				
Pan size	ø 85 mm				
Weighing chamber dimensions	170 × 200 × 220 mm				
Net weight/Gross weight	12.7 kg / 16.4 kg				
Packaging size	715 × 385 × 485 mm				

	XA 100.4Y M	XA 160.4Y M	XA 220.4Y M	XA 310.4Y M
Max capacity	100 g	160 g	220 g	310 g
Min load	10 mg	10 mg	10 mg	10 mg
Readability	0,1 mg	0,1 mg	0,1 mg	0,1 mg
Tare range	-100 g	-160 g	-220 g	-310 g
Working temperature	+10° ~ +40°C			
Relative air humidity ***	40% ~ 80% (non-condensing conditions)			
Repeatability *	0,08 mg	0,08 mg	0,08 mg	0,08 mg (Rt ≤ 220 g) 0.2 mg (220 g < Rt ≤ 310 g)
Linearity	±0,2 mg	±0,2 mg	±0,2 mg	±0,3 mg
Eccentric load deviation	0,2 mg	0,2 mg	0,2 mg	0,3 mg
Sensitivity offset	$2 \times 10^{-6} \times Rt$			
Sensitivity temperature drift	1×10^{-6} / °C × Rt			
Sensitivity time drift	1×10^{-6} / Rok × Rt			
Minimum weight (USP)	160 mg			
Minimum weight (U = 1%, k = 2)	16 mg			
Stabilization time	2.5 s			
Interface	2×USB, 2×RS 232, 1×Ethernet, Wi-Fi 802.11 b/g/n, 4in / 4out (digital)			
Power supply	13,5 ~ 16 V DC / 2,1 A			
Adjustment / Calibration	internal (automatic)			
Pan size	ø 100 mm			
Weighing chamber dimensions	170×200×220 mm			
Net weight/Gross weight	9,8 kg / 14,3 kg			
Packaging size	715×385×485 mm			

Dimensions :





*All the above XA 4Y Balances with suffix 'A' are also available with Auto-Door opening & IR Sensors

ANALYTICAL BALANCES
AS.X2 Series

- Parts counting
- Dosing
- Checkweighing
- Formulation
- Percent deviations
- Statistics
- Animal weighing
- Autotest (GLP, Filter)
- Density determination
- Air buoyancy compensation
- GLP procedures
- Under hook weighing
- Peak hold
- Infrared sensors
- Ambient conditions monitoring
- Newton unit measurement
- Replaceable units
- ALIBI Memory
- Mass for titrator

The AS.X2 series represents a new advanced level for analytical balances.
The X2 series balances feature the latest generation capacitive display providing the maximum comfort of use, available right at your fingertips. Ease of operation, clear menu and practical arrangement of the display guarantee the best ergonomics for your everyday tasks. A wide array of available interfaces facilitate selection of the most optimal means for communication. The X2 series balances offer unlimited possibilities for cooperation with external devices, providing printing, copying, archiving and data transfer. Built-in IR sensors allow numerous operations (e.g. tarring, transmitting the result to a printer or selecting successive steps of a particular process, etc.) to be performed handsfree, by simply moving a hand across the sensor. The housing is made of plastic, and the pan is made of stainless steel.

The data is registered in 7 databases:
- ✓ Users (up to 100 users),
- ✓ Products (up to 5000 products),
- ✓ Weighments (up to10 000 weighments),
- ✓ Packaging (up to 100 packaging types),
- ✓ Formulas (up to 100 formulas),
- ✓ Clients (up to 100 clients),
- ✓ ALIBI memory (up to 500000 weighments).

The X2 series features option of making reports of 3 different categories:
- ✓ Reports on formulas (up to 200 reports),
- ✓ Reports on density determination (up to 500 reports),
- ✓ Reports on pipettes calibration (up tp 500 reports).

ALIBI Memory
The X2 series balances feature ALIBI memory that is a warranty for safety and automatic recording of your measurements. Options such as data preview, copying and archiving are available to users as well.

The ALIBI memory allows to record up to 500 000 weighment records.
Personalization taken to the next level

The X2 is the only balance available on the market that provides a user with the option to design display using wide selection of widgets. Customised display of X2 series offers direct access to the results of your work and other important information directly from the home screen.

Weighing Data Management
USB interface facilitates quick transfer and copying of any results of your work (measurements, reports, databases) to other balances. Network management of the weighing data increases effectivity, productivity and safety of the important data to the maximum.

	AS 62.X2 M	AS 60/220.X2 M	AS 82/220.X2 M
Max capacity	62 g	60 g / 220 g	82 g / 220 g
Minimum load	1 mg	1 mg	1 mg
Readability	0,01 mg	0,01 mg / 0,1 mg	0,01 mg / 0,1 mg
Tare range	- 62 g	-220 g	-220 g
Repeatability *	0.015 mg (Rt ≤ 20g) 0.02 mg (20 g < Rt ≤ 50 g) 0.03 mg (50 g < Rt ≤ 62 g)	0.015 mg (Rt ≤ 20g) 0.02 mg (20 g < Rt ≤ 50 g) 0.03 mg (50 g < Rt ≤ 60 g) 0.13 mg (60 g < Rt ≤ 220 g)	0.015 mg (Rt ≤ 20g) 0.02 mg (20 g < Rt ≤ 50 g) 0.03 mg (50 g < Rt ≤ 82 g) 0.13 mg (82 g < Rt ≤ 220 g)
Linearity	± 0,06 mg	± 0.06 mg (to 60 g) ± 0.03 mg (60 g ~ 220 g)	± 0.06 mg (to 82 g) ± 0.03 mg (82 g ~ 220 g)
Pan size	Open-work pan Ø 90 mm + (Ø 85 mm - option)		
Working temperature	+10° ~ +40°C		
Relative air humidity **	40% ~ 80%		
Stabilization time	6 s	6 s / 3,5 s	6 s / 3,5 s
Sensitivity drift	1 ppm/°C in temperature +10° ~ +40°C		
Minimum Weight (USP)	30 mg		
Minimum Weight (U = 1% , k = 2)	3 mg		
Interface	2 × RS 232, USB-A, USB-B, WiFi - option		
Power supply***	12 ~ 16 V DC / 2,1 A		
Adjustment/calibration	internal (automatic)		
Display	5" colour capacitive touchscreen		
Net weight/Gross weight	5.4 kg / 7.5 kg		
Packaging size	495 x 400 x 515 mm		

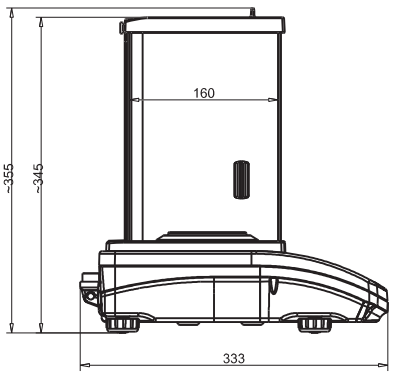
	AS 110.X2 M	AS 160.X2 M	AS 220.X2 M	AS 310.X2 M
Max capacity	110 g	160 g	220 g	310 g
Minimum load	10 mg	10 mg	10 mg	10 mg
Readability	0,1 mg	0,1 mg	0,1 mg	0,1 mg
Tare range	-110 g	-160 g	-220 g	-310 g
Repeatability *	0.1 mg (Rt 50g) 0.13 mg (50g ~ 110 g)	0.1 mg (Rt 50g) 0.13 mg (50g ~ 160 g)	0.1 mg (Rt 50g) 0.13 mg (50g ~ 220 g)	0.1 mg (Rt 50g) 0.13 mg (50g ~ 220 g) 0.25 mg (220g ~ 310 g)
Linearity	± 0,2 mg	± 0,2 mg	± 0,2 mg	± 0,3 mg
Pan size	Ø 100 mm			
Working temperature	+10° ~ +40°C			
Relative air humidity **	40% ~ 80%			
Stabilization time	3,5 s			
Sensitivity drift	1 ppm/°C in temperature +10° ~ +40°C			
Minimum Weight (USP)	200 mg			
Minimum Weight (U = 1% , k = 2)	20 mg			
Interface	2 × RS 232, USB-A, USB-B, WiFi - option			
Power supply***	12 ~ 16 V DC / 2,1 A			
Adjustment/calibration	internal (automatic)			
Display	5" colour capacitive touchscreen			
Net weight/Gross weight	5.4 kg / 7.5 kg			
Packaging size	495 x 400 x 515 mm			

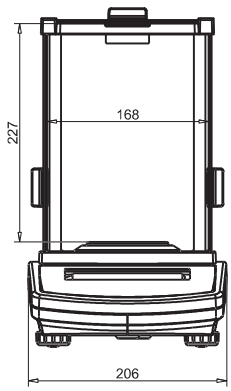
* Repeatability is expressed as a standard deviation from 10 weighing cycles.

** Non-condensing conditions

*** 250 mA for balances without WiFi module, 350 mA for balances with installed WiFi module

Dimensions :





PRECISION BALANCES
PS.X2 Series

- Parts counting
- Dosing
- Checkweighing
- Formulation
- Percent deviations
- Statistics
- Animal weighing
- Autotest (GLP, Filter)
- Density determination
- GLP procedures
- Under hook weighing
- Peak hold
- Infrared sensors
- Ambient conditions monitoring
- Newton unit measurement
- Replaceable units
- ALIBI Memory

The PS.X2 series represents a new advanced level for precision balances.

The X2 series balances feature the latest generation capacitive display providing the maximum comfort of use, available right at your fingertips. Ease of operation, clear menu and practical arrangement of the display guarantee the best ergonomics for your everyday tasks. A wide array of available interfaces facilitate selection of the most optimal means for communication. The X2 series balances offer unlimited possibilities for cooperation with external devices, providing printing, copying, archiving and data transfer.

Built-in IR sensors allow numerous operations (e.g. tarring, transmitting the result to a printer or selecting successive steps of a particular process, etc.) to be performed handsfree, by simply moving a hand across the sensor. The housing is made of plastic, and the pan is made of stainless steel.

Personalization taken to the next level

The X2 is the only balance available on the market that provides a user with the option to design display using wide selection of widgets. Customised display of X2 series offers direct access to the results of your work and other important information directly from the home screen.

The data is registered in 7 databases:

- ✓ Users (up to 100 users),
- ✓ Products (up to 5000 products),
- ✓ Weighments (up to 10000 weighments),
- ✓ Packaging (up to 100 packaging types),
- ✓ Formulas (up to 100 formulas),
- ✓ Clients (up to 100 clients),
- ✓ ALIBI memory (up to 500 000 weighments).

The X2 series features option of making reports of 3 different categories:

- ✓ Reports on formulas (up to 200 reports),
- ✓ Reports on density determination (up to 500 reports),
- ✓ Reports on pipettes calibration (up tp 500 reports).

ALIBI Memory

The X2 series balances feature ALIBI memory that is a warranty for safety and automatic recording of your measurements. Option such as data preview, copying and archiving are available to users, as well. The used ALIBI memory allows to record up to 500000 weighment records.

Technical data:

	PS 200/2000.X2 M	PS 210.X2 M	PS 360.X2 M	PS 600.X2 M	PS 750.X2 M	PS 1000.X2 M
Max capacity	200 / 2000 g	210 g	360 g	600 g	750 g	1000 g
Minimum load	20 mg	20 mg	20 mg	20 mg	20 mg	20 mg
Readability	1 / 10 mg	1 mg	1 mg	1 mg	1 mg	1 mg
Tare range	-2000 g	-210 g	-360 g	-600 g	-750 g	-1000 g
Repeatability *	1 / 10 mg	1 mg	1 mg	1 mg	1,5 mg	1,5 mg
Linearity	±2 / ±20 mg	±2 mg	±2 mg	±3 mg	±3 mg	±3 mg
Pan size	128×128 mm					
Working temperature	+10 ~ +40 °C					
Stabilization time	2 s / 1,5 s	2 s				
Sensitivity drift	2 ppm/°C in temperature +10 ~ +40 °C					
Interface	2 × RS 232, USB-A, USB-B, WiFi - option					
Power supply**	12 ~ 16 V DC / 2,1 A					
Adjustment/calibration	internal (automatic)					
Display	5" colour capacitive touchscreen					
Net weight/Gross weight	3,5 / 5,5 kg					
Packaging size	470×380×336 mm					

* Repeatability is expressed as a standard deviation from 10 weighing cycles.

** 250 mA for balances without WiFi module, 350 mA for balances with installed WiFi module

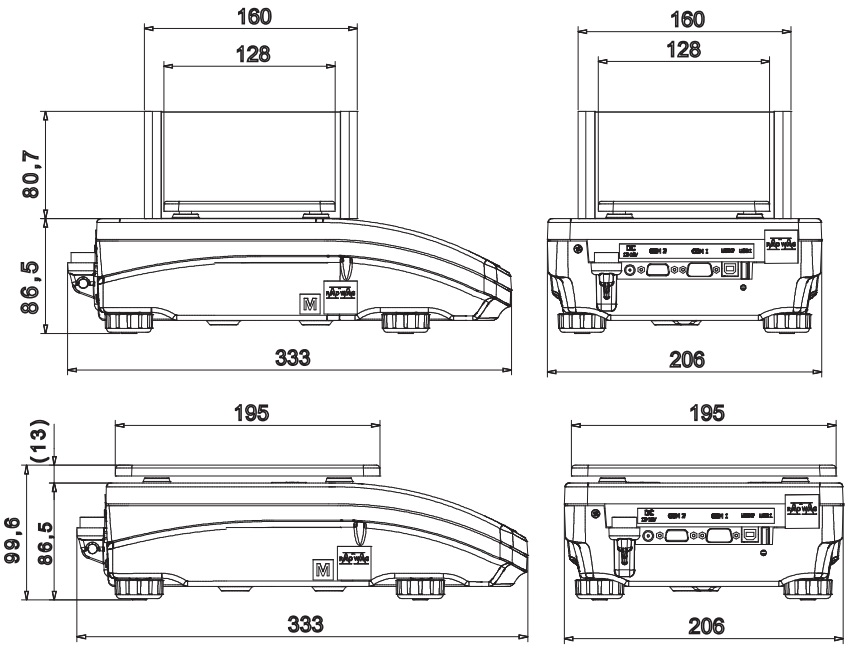
Technical data:

	PS 1200.X2 M	PS 2100.X2 M	PS 3500.X2 M	PS 4500.X2 M	PS 6000.X2 M	PS 6001.X2 M
Max capacity	1200 g	2100 g	3500 g	4500 g	6000 g	6000 g
Minimum load	500 mg	500 mg	500 mg	500 mg	500 mg	500 mg
Readability	10 mg	10 mg	10 mg	10 mg	10 mg	10 mg
Tare range	-1200 g	-2100 g	-3500 g	-4500 g	-6000 g	-6000 g
Repeatability *	10 mg	10 mg	10 mg	10 mg	15 mg	100 mg
Linearity	±20 mg	±20 mg	±20 mg	±20 mg	±30 mg	± 100 mg
Pan size	195×195 mm					
Working temperature	+10 ~ +40 °C					
Stabilization time	1,5 s					
Sensitivity drift	2 ppm/°C in temperature +10 ÷ +40 °C					
Interface	2 × RS 232, USB-A, USB-B, WiFi - option					
Power supply**	12 ~ 16 V DC / 2,1 A					
Adjustment/calibration	internal (automatic)					
Display	5" colour capacitive touchscreen					
Net weight/Gross weight	3,6 / 5,1 kg					4,8 / 6.3 kg
Packaging size	470×380×336 mm					

* Repeatability is expressed as a standard deviation from 10 weighing cycles.

** 250 mA for balances without WiFi module, 350 mA for balances with installed WiFi module

Dimensions :



ANALYTICAL BALANCES
AS.R Series

- Parts counting
- Dosing
- Checkweighing
- Percent deviations
- Statistics
- Animal weighing
- Pipettes calibration
- Statistical Quality Control
- Autotest (GLP, Filter)
- GLP procedures
- Under hook weighing
- Totalizing
- Density determination
- Peak hold
- Packaged Goods Control
- Newton unit measurement
- Replaceable units
- ALIBI Memory

The AS.R2 series represents a new standard level for analytical balances.

The feature a new, readable LCD display which allows a clearer presentation of the weighing results. Besides, the display has a new text information line allowing to show additional messages and data, e.g. product name or tare value.

Additionally, the new R series balances by means of pictograms signal the activated working mode, connection with Internet, the battery charge level, balance service functions. Also a number of displayed service functions. Also a number of displayed measuring units has been increased.

The balance precision and the measurement accuracy is assured by automatic internal adjustment, which takes into consideration temperature changes and time flow.

The data is registered in 5 databases:
- ✓ Users (up to 10 users),
- ✓ Products (up to 1000 products),
- ✓ Weighments (up to 5000 weighments),
- ✓ tares (up to 100 tares),
- ✓ ALIBI memory (up to 100 000 weighments).

There is two directions **data exchange** within the system thanks to a quick USB interface. New balances allow to import and export databases using **USB pen drives**.

R Series balances fulfill GLP requirements.

Quick access to information
Direct access to functions and databases is possible from the level of keyboard.
Database - a direct access to databases
Function - a direct access to the basic functions
F1 to F4 - programmable function and navigation keys on the menu

AS.R series balances feature serveral communication interface :
2 x Rs232
Type A USB
Type B USB and
Optional WiFi.

The balances have a possibility to weigh products out of the pan (under hook weighing) - the load hangs under the pan.

ALIBI Memory
The used ALIBI memory is ad data secure area and allows to record up to 100000 weighment records. It ensures security of constant data register in the long time period.

	AS 62.R2 M	AS 60/220.R2 M	AS 82/220.R2 M
Max capacity	62 g	60 g / 220 g	82 g / 220 g
Minimum load	1 mg	1 mg	1 mg
Readability	0,01 mg	0,01 mg / 0,1 mg	0,01 mg / 0,1 mg
Tare range	- 62 g	-220 g	-220 g
Repeatability *	0.015 mg (Rt ≤ 20 g) 0.02 mg (20 g < Rt ≤ 50 g) 0.03 mg (50 g < Rt ≤ 62 g)	0.015 mg (Rt ≤ 20g) 0.02 mg (20 g < Rt ≤ 50 g) 0.03 mg (50 g < Rt ≤ 60 g) 0.13 mg (60 g < Rt ≤ 220 g)	0.015 mg (Rt ≤ 20g) 0.02 mg (20 g < Rt ≤ 50 g) 0.03 mg (50 g < Rt ≤ 82 g) 0.13 mg (82 g < Rt ≤ 220 g)
Linearity	± 0,06 mg	± 0.06 mg (to 60 g) ± 0.03 mg (60 g ~ 220 g)	± 0.06 mg (to 82 g) ± 0.03 mg (82 g ~ 220 g)
Pan size	Open-work pan Ø 90 mm + (Ø 85 mm - option)		
Working temperature	+10° ~ +40°C		
Relative air humidity **	40% ~ 80%		
Stabilization time	6 s	6 s / 3,5 s	6 s / 3,5 s
Sensitivity drift	1 ppm/°C in temperature +10° ~ +40°C		
Minimum Weight (USP)	30 mg		
Minimum Weight (U = 1% , k = 2)	3 mg		
Interface	2 × RS 232, USB-A, USB-B, WiFi - option		
Power supply***	12 ~ 16 V DC / 2,1 A		
Adjustment/calibration	internal (automatic)		
Display	LCD (backlit)		
Net weight/Gross weight	5.4 kg / 7.5 kg		
Packaging size	495 x 400 x 515 mm		

* Repeatability is expressed as a standard deviation from 10 weighing cycles.

** Non-condensing conditions

*** 250 mA for balances without WiFi module, 350 mA for balances with installed WiFi module

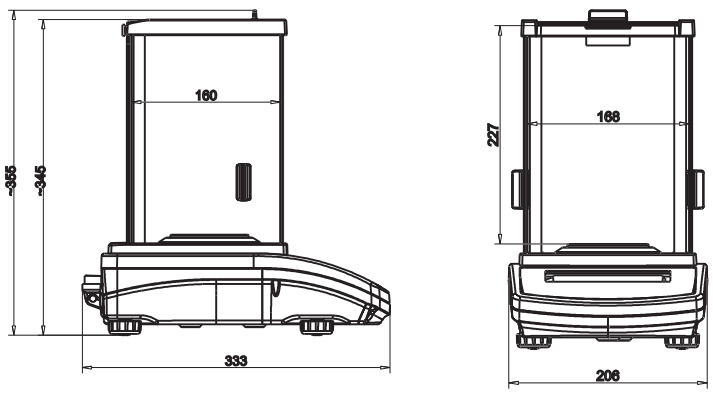
	AS 110.R2 M	AS 160.R2 M	AS 220.R2 M	AS 310.R2 M
Max capacity	110 g	160 g	220 g	310 g
Minimum load	10 mg	10 mg	10 mg	10 mg
Readability	0,1 mg	0,1 mg	0,1 mg	0,1 mg
Tare range	-110 g	-160 g	-220 g	-310 g
Repeatability *	0.1 mg (Rt 50g) 0.13 mg (50g ~ 110 g)	0.1 mg (Rt 50g) 0.13 mg (50g ~ 160 g)	0.1 mg (Rt 50g) 0.13 mg (50g ~ 220 g)	0.1 mg (Rt 50g) 0.13 mg (50g ~ 220 g) 0.25 mg (220g ~ 310 g)
Linearity	± 0,2 mg	± 0,2 mg	± 0,2 mg	± 0,3 mg
Pan size	Ø100 mm			
Working temperature	+10° ~ +40°C			
Relative air humidity **	40% ~ 80%			
Stabilization time	3,5 s			
Sensitivity drift	1 ppm/°C in temperature +10° ~ +40°C			
Interface	2 × RS 232, USB-A, USB-B, WiFi - option			
Power supply***	12 ~ 16 V DC / 2,1 A			
Adjustment/calibration	internal (automatic)			
Display	LCD (backlit)			
Net weight/Gross weight	5.4 kg / 7.5 kg			
Packaging size	495 x 400 x 515 mm			

* Repeatability is expressed as a standard deviation from 10 weighing cycles.

** Non-condensing conditions

*** 250 mA for balances without WiFi module, 350 mA for balances with installed WiFi module

Dimensions :



PRECISION BALANCES
PS.R Series

- Parts counting
- Dosing
- Checkweighing
- Percent deviations
- Statistics
- Animal weighing
- Statistical Quality Control
- Autotest (GLP, Filter)
- GLP procedures
- Newton unit measurement
- Replaceable units
- Summing function
- Caps lock of max indication
- Density determination
- Under-hook weighing
- ALIBI Memory

PS.R2 series balances represent a new standard of precision balances. They **Feature a new, readable LCD display** which allows a clearer presentation of the weighing results. Besides, the display has a new text information line allowing to show additional messages and data, e.g. product name or tare value.

New PS.R2 balances, like previously designed PS series balances, have pan in two possible series balances, have pans in two possible dimensions : 128 x 128mm or 195 x 195 mm. balances with a smaller pan have a draft shield. The balance precision and the measurement accuracy is assured by automatic internal adjustment, which takes into consideration temperature changes and time flow.

The data is registered in 5 databases:
- ✓ Users (up to 10 users),
- ✓ Products (up to 1000 products),
- ✓ Weighments (up to 5000 weighments),
- ✓ tares (up to 100 tares),
- ✓ ALIBI memory (up to 100 000 weighments).

There is two directions data exchange within the system thanks to a quick USB interface. New balances allow to import and export databases using USB pen drives.

Quick access to information
Direct access to functions and databases is possible from the level of keyboard.
Database - a direct access to databases
Function - a direct access to the basic functions
F1 to F4 - programmable function and navigation keys on the menu

PS.R2 balances feature serveral communication interface :
2 x Rs232
Type A USB
Type B USB and
Optional WiFi.

The housing is mode of plastic, and the pan is made of plastic, and the pan is made stainless steel. The balances have a possibility to weigh products out of the pan (under hook weighing) - the load hangs under the pan.

ALIBI Memory
The used ALIBI memory is ad data secure area and allows to record up to 100000 weighment records. It ensures security of constant data register in the long time period.

Technical data:

	PS 200/2000.R2 M	PS 210.R2 M	PS 360.R2 M	PS 600.R2 M	PS 750.R2 M	PS 1000.R2 M
Max capacity	200 / 2000 g	210 g	360 g	600 g	750 g	1000 g
Minimum load	20 mg	20 mg	20 mg	20 mg	20 mg	20 mg
Readability	1 / 10 mg	1 mg	1 mg	1 mg	1 mg	1 mg
Tare range	-2000 g	-210 g	-360 g	-600 g	-750 g	-1000 g
Repeatability *	1 / 10 mg	1 mg	1 mg	1 mg	1,5 mg	1,5 mg
Linearity	±2 / ±20 mg	±2 mg	±2 mg	±3 mg	±3 mg	±3 mg
Pan size	128×128 mm					
Working temperature	+10 ~ +40 °C					
Stabilization time	2 s / 1,5 s	2 s				
Sensitivity drift	2 ppm/°C in temperature +10 ~ +40 °C					
Interface	2 × RS 232, USB-A, USB-B, WiFi - option					
Power supply**	12 ~ 16 V DC / 2,1 A					
Adjustment/calibration	internal (automatic)					
Display	LCD (backlit)					
Net weight/Gross weight	3,5 / 5,5 kg					
Packaging size	470×380×336 mm					

* Repeatability is expressed as a standard deviation from 10 weighing cycles.

** 250 mA for balances without WiFi module, 350 mA for balances with installed WiFi module

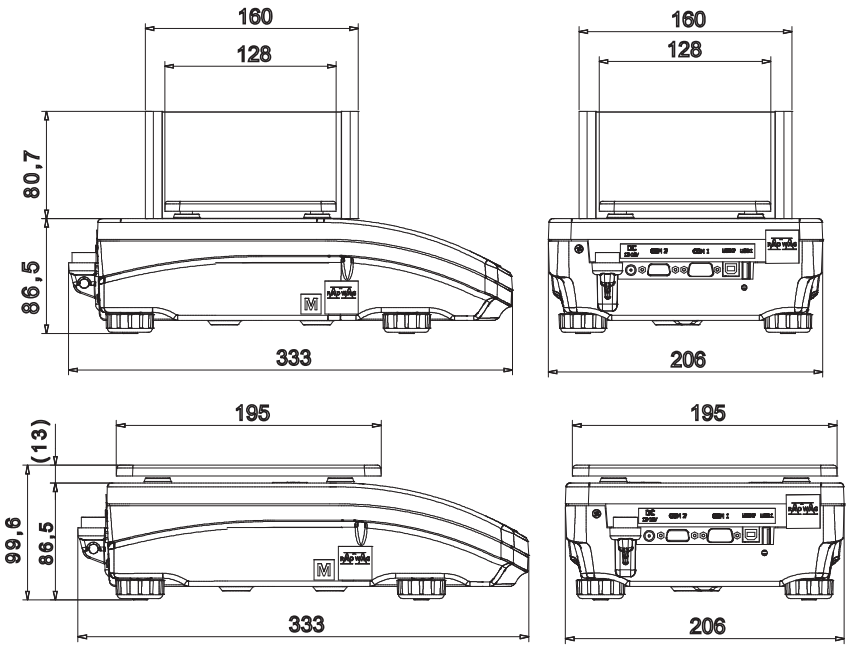
Technical data:

	PS 1200.R2 M	PS 2100.R2 M	PS 3500.R2 M	PS 4500.R2 M	PS 6000.R2 M	PS 6001.R2 M
Max capacity	1200 g	2100 g	3500 g	4500 g	6000 g	6000 g
Minimum load	500 mg	500 mg	500 mg	500 mg	500 mg	500 mg
Readability	10 mg	10 mg	10 mg	10 mg	10 mg	10 mg
Tare range	-1200 g	-2100 g	-3500 g	-4500 g	-6000 g	-6000 g
Repeatability *	10 mg	10 mg	10 mg	10 mg	15 mg	100 mg
Linearity	±20 mg	±20 mg	±20 mg	±20 mg	±30 mg	± 100 mg
Pan size	195×195 mm					
Working temperature	+10 ~ +40 °C					
Stabilization time	1,5 s					
Sensitivity drift	2 ppm/°C in temperature +10 ÷ +40 °C					
Interface	2 × RS 232, USB-A, USB-B, WiFi - option					
Power supply**	12 ~ 16 V DC / 2,1 A					
Adjustment/calibration	internal (automatic)					
Display	LCD (backlit)					
Net weight/Gross weight	3,6 / 5,1 kg					4,8 / 6.3 kg
Packaging size	470×380×336 mm					

* Repeatability is expressed as a standard deviation from 10 weighing cycles.

** 250 mA for balances without WiFi module, 350 mA for balances with installed WiFi module

Dimensions :



MOISTURE ANALYZER
MA.R Series

Moisture analyzer is a laboratory measuring instrument intended to determine relative humidity for small samples of different materials. MA.R series redefines moisture analyzers standards. This series has been equipped with brand new readable LCD display providing an extra text line for information such as supplementary messages and data, e.g. product name or tare value. The moisture analyzer, using respective pictograms, signalizes currently activated mode, computer connection and functions, both balance and service ones.

The MA.R series is enriched with various interfaces: RS232, USB type A, USB type B and Wifi as an option. The moisture analyzer is housed in a plastic casing.

Databases:
Information system of R series moisture analyzers is based on 6 databases, allowing many operators to operate product database comprising many samples. Collected measurements may be subjected to subsequent analysis.

Collected data is registered in 6 databases:
- ✓ Users (up to 100 users),
- ✓ Products (up to 1 000 products),
- ✓ Weighments (up to 1 000 weighments),
- ✓ Tares (up to 100 tares)
- ✓ Programs (up to 100 drying programs)
- ✓ Drying process reports (up to 1000 reports)

Direct access to information
It is possible to access functions and databases directly, using keyboard soft keys.
Database – access to databases
Function – access to basic functions
F1 and F2 – programmable function keys and menu navigation keys
Reports – access to database of drying process reports
Profile – access to parameters settings
Sample – access to products database

Exchange of information within the system is performed by means of USB port on bi-directional basis. It is possible to import and export databases using memory sticks.

Technical data:

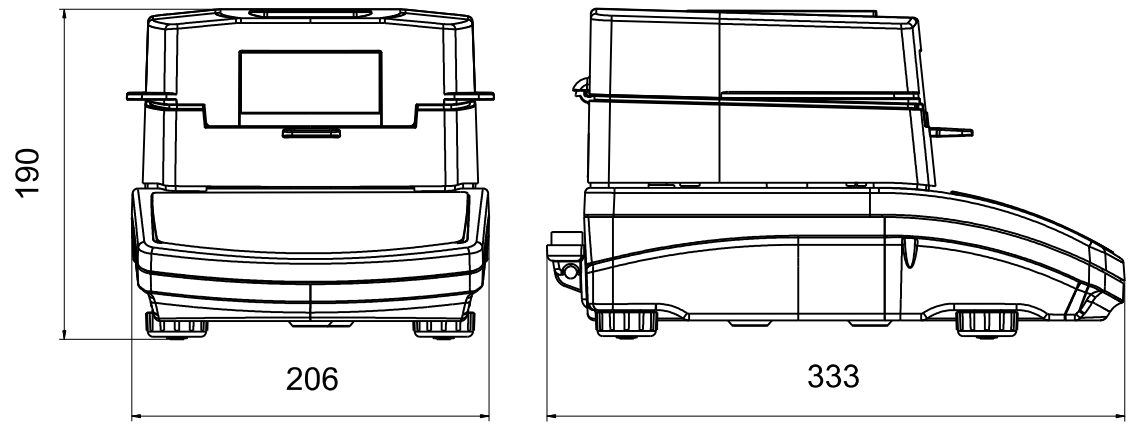
	MA 50/1.4R	MA 50.R	MA 110.R	MA 210.R
Max capacity	50 g	50 g	110 g	210 g
Reading unit	0.1 mg	1 mg	1 mg	1 mg
Tare range	-50 g	-50 g	-110 g	-210 g
Max sampling mass	50 g	50 g	110 g	210 g
Accuracy of moisture readout	0.0001 %	0.001 %	0.001 %	0.001 %
Repeatability of moisture readout	0,05% (sample 2 g), 0,01% (sample 10 g)			
Maximal height of the tested sample	h= 20 mm			
Pan size	ø 90 mm, h= 8 mm			
Range of drying temperature *	max. 160° C			
Heating module **	IR emitter			
Drying modes	4 options (manual, automatic, time defined, user defined)			
Auto switch off options	3 modes (manual, automatic, time defined)			
Additional functions	sample identification, drying diagram			
Working temperature	+10° ~ +40 °C			
Power suply	230V			
Display	LCD (backlit)			
Interface	1 x RS 232, USB-A, USB-B, WiFi (option)			
Net weight/Gross weight	4.9 / 6,4 kg			
Packaging size	470 x 380 x 336 mm			

* Heating element options: WH - halogen (max = 250°C), NS - metal heater (max = 160°C)

Accessories :

Antivibration table for laboratory balances	GT105k-12/Z Control Thermometer
EPSON Printer	Adjustment Weight
Disposable Weighing Pans	PW-WIN, RAD-KEY PC Software
PC - USB Keyboard	Cable RS 232 (balance - computer) “P0108”
Water Vapour Permeability Determination Set	Cable RS 232 (balance - Epson, Citizen Printer) “P0151”

Dimensions :



Weight Box & Weights

1 mg ~ 200g
E1, E2, F1, F2
Weight Box

Individual Weights
1 mg ~ 20 kg of class E1, E2, F1, F2

We follow stringent quality measures as per ISO/IEC/17025 and OIML - R-111-2004 recommendations. The calibration procedures are derived from OIML - R-111-2004 and the Intermediate checking is performed at regular intervals with OIML-R-76 recommendations.

	Range	Class	MOC	Density
1.	1mg-500mg	E-1	Austenitic Stainless Steel	8.0g/cm^3
2.	1mg-200mg	E-1	Austenitic Stainless Steel	8.0g/cm^3
3.	1mg-500mg	E-2	Austenitic Stainless Steel	7.94-7.96g/cm^3
4.	1mg-200mg	E-2	Austenitic Stainless Steel	7.94-7.96g/cm^3
5.	1mg-200mg	F-1	Austenitic Stainless Steel	7.94-7.96g/cm^3
6.	1mg-200mg	F-2	Austenitic Stainless Steel	7.94-7.96g/cm^3
7.	1mg-20kg	F-1, F-2 & M-1	Stainless Steel	7.9g/cm^3

Anti-Viberation Table

Table SAL/STONE/C is designed for ensuring stable operating conditions for high precision measurements. The table top is manufactured from polished granite and it is based on mild steel, metal construction. Robust construction of the table along with special vibration absorbers ensure excellent isolation of measuring instruments from possible vibrations, sourcing from environmental factors.

Accessories:

Antivibration weighing bench	Bar code scanner RS232
Professional weighing bench	Bar code scanner USB HID
Epson impact printer	Density determination kit for solids and liquids
Citizen label printer	LCD display "WD-6"
Holders for glass vessels	USB PC keyboard
"Tare" or "Print" foot button	Additional adapter for pipettes calibration
"PW-WIN" computer software	Power adapter ZR-02
"RAD-KEY" computer software	Mass standard
"Pipettes" computer software	Cable RS 232 (balance - computer) "P0108"
Antistatic ioniser DJ-02	Cable RS 232 (balance - Epson, Citizen printer) "P0151"
USB PCL printer	Cable USB A - USB B (balance - computer, balance - PCL printer)
USB flash drive (FAT file format)	

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