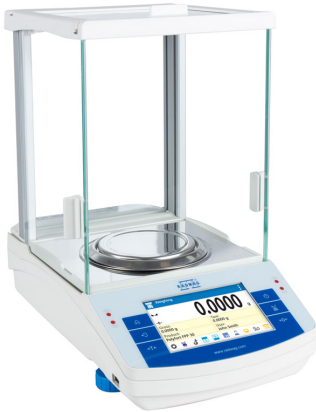




**AS 520.X2 PLUS Analytical Balance, AS 82/220.X2 PLUS Analytical Balance, AS 160.X2 PLUS Analytical Balance, AS 120.X2 PLUS Analytical Balance, AS 60/220.X2 PLUS Analytical Balance, AS 62.X2 PLUS Analytical Balance, AS 220.X2 PLUS Analytical Balance, AS 310.X2 PLUS Analytical Balance**

More information on the website  
radwag.com/en/info,w1,90N



AS 520.X2 PLUS Analytical Balance  
AS 160.X2 PLUS Analytical Balance  
AS 220.X2 PLUS Analytical Balance  
AS 310.X2 PLUS Analytical Balance



AS 82/220.X2 PLUS Analytical Balance  
AS 120.X2 PLUS Analytical Balance  
AS 60/220.X2 PLUS Analytical Balance  
AS 62.X2 PLUS Analytical Balance

The drawings, photos and graphics used are for illustrative purposes only.

## Functions



### Autotest:

- AS 60/220.X2 PLUS Analytical Balance
- AS 62.X2 PLUS Analytical Balance
- AS 82/220.X2 PLUS Analytical Balance
- AS 120.X2 PLUS Analytical Balance
- AS 160.X2 PLUS Analytical Balance
- AS 220.X2 PLUS Analytical Balance
- AS 310.X2 PLUS Analytical Balance
- AS 520.X2 PLUS Analytical Balance



### Dosing:

- AS 60/220.X2 PLUS Analytical Balance
- AS 62.X2 PLUS Analytical Balance
- AS 82/220.X2 PLUS Analytical Balance
- AS 120.X2 PLUS Analytical Balance
- AS 160.X2 PLUS Analytical Balance
- AS 220.X2 PLUS Analytical Balance
- AS 310.X2 PLUS Analytical Balance
- AS 520.X2 PLUS Analytical Balance



### Plus/Minus Control:

- AS 60/220.X2 PLUS Analytical Balance
- AS 62.X2 PLUS Analytical Balance
- AS 82/220.X2 PLUS Analytical Balance
- AS 120.X2 PLUS Analytical Balance
- AS 160.X2 PLUS Analytical Balance
- AS 220.X2 PLUS Analytical Balance
- AS 310.X2 PLUS Analytical Balance
- AS 520.X2 PLUS Analytical Balance



### Percent Weighing:

- AS 60/220.X2 PLUS Analytical Balance
- AS 62.X2 PLUS Analytical Balance
- AS 82/220.X2 PLUS Analytical Balance
- AS 120.X2 PLUS Analytical Balance
- AS 160.X2 PLUS Analytical Balance
- AS 220.X2 PLUS Analytical Balance
- AS 310.X2 PLUS Analytical Balance
- AS 520.X2 PLUS Analytical Balance



### Parts counting:

- AS 60/220.X2 PLUS Analytical Balance
- AS 62.X2 PLUS Analytical Balance
- AS 82/220.X2 PLUS Analytical Balance
- AS 120.X2 PLUS Analytical Balance
- AS 160.X2 PLUS Analytical Balance
- AS 220.X2 PLUS Analytical Balance
- AS 310.X2 PLUS Analytical Balance
- AS 520.X2 PLUS Analytical Balance



### Peak hold:

- AS 60/220.X2 PLUS Analytical Balance
- AS 62.X2 PLUS Analytical Balance
- AS 82/220.X2 PLUS Analytical Balance
- AS 120.X2 PLUS Analytical Balance
- AS 160.X2 PLUS Analytical Balance
- AS 220.X2 PLUS Analytical Balance
- AS 310.X2 PLUS Analytical Balance
- AS 520.X2 PLUS Analytical Balance



### Formulation:

- AS 60/220.X2 PLUS Analytical Balance
- AS 62.X2 PLUS Analytical Balance
- AS 82/220.X2 PLUS Analytical Balance
- AS 120.X2 PLUS Analytical Balance
- AS 160.X2 PLUS Analytical Balance
- AS 220.X2 PLUS Analytical Balance
- AS 310.X2 PLUS Analytical Balance
- AS 520.X2 PLUS Analytical Balance



### Newton unit measurement:

- AS 60/220.X2 PLUS Analytical Balance
- AS 62.X2 PLUS Analytical Balance
- AS 82/220.X2 PLUS Analytical Balance
- AS 120.X2 PLUS Analytical Balance
- AS 160.X2 PLUS Analytical Balance
- AS 220.X2 PLUS Analytical Balance
- AS 310.X2 PLUS Analytical Balance
- AS 520.X2 PLUS Analytical Balance



## Datasheet

	AS 60/220.X2 PLUS Analytical Balance WL-104-1053	AS 62.X2 PLUS Analytical Balance WL-104-0183	AS 82/220.X2 PLUS Analytical Balance WL-104-1050
<b>Metrological parameters</b>			
Maximum capacity [Max]	60 / 220 g	62 g	82 / 220 g
Minimum load	1 mg	1 mg	1 mg
Readability [d]	0,01 / 0,1 mg	0,01 mg	0,01 / 0,1 mg
Verification unit [e]	1 mg	1 mg	1 mg
Tare range	-220 g	-62 g	-220 g
Standard repeatability [5% Max]	0,01 mg	0,01 mg	0,01 mg
Standard repeatability [Max]	0,06 mg	0,017 mg	0,06 mg
Standard minimum weight (USP)	20 mg	20 mg	20 mg
Standard minimum weight (U=1%, k=2)	2 mg	2 mg	2 mg
Permissible repeatability [5% Max]	0,02 mg	0,02 mg	0,02 mg
Permissible repeatability [Max]	0,1 mg	0,03 mg	0,1 mg
Linearity	±0,05 / 0,2 mg	±0,05 mg	±0,05 / 0,2 mg
Stabilization time	2 s	3 s	2 s
Adjustment	internal (automatic)	internal (automatic)	internal (automatic)
OIML Class	I	I	I
<b>Physical parameters</b>			
Leveling system	semi-automatic – LevelSENSING	semi-automatic – LevelSENSING	semi-automatic – LevelSENSING
Display	5" graphic color touchscreen	5" graphic color touchscreen	5" graphic color touchscreen
Weighing chamber doors	manual	manual	manual
Delivery components	Balance, weighing pan, osłona weighing pans, centring ring, bottom cover, power supply, fabric dust cover.	Balance, weighing pan, osłona weighing pans, centring ring, bottom cover, power supply, fabric dust cover.	Balance, weighing pan, osłona weighing pans, centring ring, bottom cover, power supply, fabric dust cover.
Weighing chamber dimensions	190×190×222 mm	190×190×222 mm	190×190×222 mm
Weighing pan dimensions	ø90 open-work pan + ø85 (option) mm	ø90 open-work pan + ø85 (option) mm	ø90 open-work pan + ø85 (option) mm
Packaging dimensions	545×455×575 mm	545×455×575 mm	545×455×575 mm
Net weight	7,3 kg	7,31 kg	7,14 kg
Gross weight	10,5 kg	10,5 kg	10,5 kg
<b>Construction</b>			
Protection class	IP 43	IP 43	IP 43
<b>Components and software</b>			
Database capacity	Products, Users, Packaging, Customers, Formulations, Formulations reports, Ambient Conditions, Weighings, Alibi memory	Products, Users, Packaging, Customers, Formulations, Formulations reports, Ambient Conditions, Weighings, Alibi memory	Products, Users, Packaging, Customers, Formulations, Formulations reports, Ambient Conditions, Weighings, Alibi memory
<b>Features of use</b>			
Touch-free operation	2 IR Sensors	2 IR Sensors	2 IR Sensors
<b>Communication interface</b>			
Communication interface	2×RS232 <sup>1</sup> , 2×USB-A (interchangeable), USB-B, Wi-Fi, Ethernet	2×RS232 <sup>1</sup> , 2×USB-A (interchangeable), USB-B, Wi-Fi, Ethernet	2×RS232 <sup>1</sup> , 2×USB-A (interchangeable), USB-B, Wi-Fi, Ethernet
<b>Electrical parameters</b>			
Power supply	Adapter: 100 – 240V AC 50/60Hz 0,6A; 12V DC 1,2A Balance: 12 – 15V DC 0,8A max	Adapter: 100 – 240V AC 50/60Hz 0,6A; 12V DC 1,2A Balance: 12 – 15V DC 0,8A max	Adapter: 100 – 240V AC 50/60Hz 0,6A; 12V DC 1,2A Balance: 12 – 15V DC 0,8A max
Power consumption max.	4 W	4 W	4 W
<b>Environmental conditions</b>			
Operating temperature	+10 – +40 °C	+10 – +40 °C	+10 – +40 °C
Ambient conditions monitoring (option)	THBR 2.0 System, THBR BOX, THB P, THB W, THB S	THBR 2.0 System, THBR BOX, THB P, THB W, THB S	THBR 2.0 System, THBR BOX, THB P, THB W, THB S
Relative humidity	40% – 80%	40% – 80%	40% – 80%

Repeatability is expressed as a standard deviation from 10 weighing cycles. Stabilization time depends on the ambient conditions and the dynamics of weighing pan loading; specified for FAST profile. 1 Barcode scanners, available as weighing instrument accessory, communicate with the instrument via RS232 interface exclusively.

# Datasheet

		<b>AS 120.X2 PLUS Analytical Balance</b> WL-104-0190	<b>AS 160.X2 PLUS Analytical Balance</b> WL-104-0181
<b>Metrological parameters</b>			
<b>Maximum capacity [Max]</b>		120 g	160 g
<b>Minimum load</b>	—	1 mg	10 mg
<b>Readability [d]</b>		0,01 mg	0,1 mg
<b>Verification unit [e]</b>	—	1 mg	1 mg
<b>Tare range</b>		-120 g	-160 g
<b>Standard repeatability [5% Max]</b>	—	0,01 mg	0,06 mg
<b>Standard repeatability [Max]</b>		0,025 mg	0,07 mg
<b>Standard minimum weight (USP)</b>	—	20 mg	120 mg
<b>Standard minimum weight (U=1%, k=2)</b>		2 mg	12 mg
<b>Permissible repeatability [5% Max]</b>	—	0,02 mg	0,09 mg
<b>Permissible repeatability [Max]</b>		0,04 mg	0,1 mg
<b>Linearity</b>	—	±0,07 mg	±0,2 mg
<b>Stabilization time</b>		2 s	2 s
<b>Adjustment</b>	—	internal (automatic)	internal (automatic)
<b>OIML Class</b>		I	I
<b>Physical parameters</b>			
<b>Leveling system</b>		semi-automatic – LevelSENSING	semi-automatic – LevelSENSING
<b>Display</b>	—	5" graphic color touchscreen	5" graphic color touchscreen
<b>Weighing chamber doors</b>		manual	manual
<b>Delivery components</b>	—	Balance, weighing pan, osłona weighing pans, centring ring, bottom cover, power supply, fabric dust cover.	Balance, weighing pan, osłona weighing pans, centring ring, bottom cover, power supply.
<b>Weighing chamber dimensions</b>		190×190×222 mm	190×190×226 mm
<b>Weighing pan dimensions</b>	—	ø90 open-work pan + ø85 (option) mm	ø100 mm
<b>Packaging dimensions</b>		545×455×575 mm	490×400×520 mm
<b>Net weight</b>	—	7,3 kg	7,3 kg
<b>Gross weight</b>		9,3 kg	9 kg
<b>Construction</b>			
<b>Protection class</b>		IP 43	IP 43
<b>Components and software</b>			
<b>Database capacity</b>		Products, Users, Packaging, Customers, Formulations, Formulations reports, Ambient Conditions, Weighings, Alibi memory	Products, Users, Packaging, Customers, Formulations, Formulations reports, Ambient Conditions, Weighings, Alibi memory
<b>Features of use</b>			
<b>Touch-free operation</b>		2 IR Sensors	2 IR Sensors
<b>Communication interface</b>			
<b>Communication interface</b>		2×RS232 <sup>1</sup> , 2×USB-A (interchangeable), USB-B, Wi-Fi, Ethernet	2×RS232 <sup>1</sup> , 2×USB-A (interchangeable), USB-B, Wi-Fi, Ethernet
<b>Electrical parameters</b>			
<b>Power supply</b>		Adapter: 100 – 240V AC 50/60Hz 0,6A; 12V DC 1,2A Balance: 12 – 15V DC 0,8A max	Adapter: 100 – 240V AC 50/60Hz 0,6A; 12V DC 1,2A Balance: 12 – 15V DC 0,8A max
<b>Power consumption max.</b>	—	4 W	4 W
<b>Environmental conditions</b>			
<b>Operating temperature</b>	—	+10 – +40 °C	+10 – +40 °C
<b>Ambient conditions monitoring (option)</b>		THBR 2.0 System, THBR BOX, THB P, THB W, THB S	THBR 2.0 System, THBR BOX, THB P, THB W, THB S
<b>Relative humidity</b>	—	40% – 80%	40% – 80%

Repeatability is expressed as a standard deviation from 10 weighing cycles. Stabilization time depends on the ambient conditions and the

dynamics of weighing pan loading; specified for FAST profile. 1 Barcode scanners, available as weighing instrument accessory, communicate with the instrument via RS232 interface exclusively.

## Datasheet

		<b>AS 220.X2 PLUS Analytical Balance</b> WL-104-0169	<b>AS 310.X2 PLUS Analytical Balance</b> WL-104-0182
<b>Metrological parameters</b>			
Maximum capacity [Max]		220 g	310 g
Minimum load	—	10 mg	10 mg
Readability [d]		0,1 mg	0,1 mg
Verification unit [e]	—	1 mg	1 mg
Tare range		-220 g	-310 g
Standard repeatability [5% Max]	—	0,06 mg	0,07 mg
Standard repeatability [Max]		0,07 mg	0,1 mg
Standard minimum weight (USP)	—	120 mg	140 mg
Standard minimum weight (U=1%, k=2)		12 mg	14 mg
Permissible repeatability [5% Max]	—	0,09 mg	0,12 mg
Permissible repeatability [Max]		0,1 mg	0,15 mg
Linearity	—	±0,2 mg	±0,3 mg
Stabilization time		2 s	2,5 s
Adjustment	—	internal (automatic)	internal (automatic)
OIML Class		I	I
<b>Physical parameters</b>			
Leveling system		semi-automatic – LevelSENSING	semi-automatic – LevelSENSING
Display	—	5" graphic color touchscreen	5" graphic color touchscreen
Weighing chamber doors		manual	manual
Delivery components	—	Balance, weighing pan, ošlona weighing pans, bottom cover, power supply.	Balance, weighing pan, ošlona weighing pans, bottom cover, power supply.
Weighing chamber dimensions		190×190×226 mm	190×190×226 mm
Weighing pan dimensions	—	ø100 mm	ø100 mm
Packaging dimensions		490×400×520 mm	490×400×520 mm
Net weight	—	7,06 kg	7,32 kg
Gross weight		8,5 kg	9 kg
<b>Construction</b>			
Protection class		IP 43	IP 43
<b>Components and software</b>			
Database capacity		Products, Users, Packaging, Customers, Formulations, Formulations reports, Ambient Conditions, Weighings, Alibi memory	Products, Users, Packaging, Customers, Formulations, Formulations reports, Ambient Conditions, Weighings, Alibi memory
<b>Features of use</b>			
Touch-free operation		2 IR Sensors	2 IR Sensors
<b>Communication interface</b>			
Communication interface		2×RS232 <sup>1</sup> , 2×USB-A (interchangeable), USB-B, Wi-Fi, Ethernet	RS232, 2×USB-A (interchangeable), USB-B, Wi-Fi, Ethernet
<b>Electrical parameters</b>			
Power supply		Adapter: 100 – 240V AC 50/60Hz 0,6A; 12V DC 1,2A Balance: 12 – 15V DC 0,8A max	Adapter: 100 – 240V AC 50/60Hz 0,6A; 12V DC 1,2A Balance: 12 – 15V DC 0,8A max
Power consumption max.	—	4 W	4 W
<b>Environmental conditions</b>			
Operating temperature	—	+10 – +40 °C	+10 – +40 °C
Ambient conditions monitoring (option)		THBR 2.0 System, THBR BOX, THB P, THB W, THB S	THBR 2.0 System, THBR BOX, THB P, THB W, THB S
Relative humidity	—	40% – 80%	40% – 80%

Repeatability is expressed as a standard deviation from 10 weighing cycles. Stabilization time depends on the ambient conditions and the dynamics of weighing pan loading; specified for FAST profile. 1 Barcode scanners, available as weighing instrument accessory, communicate with the instrument via RS232 interface exclusively.

## Datasheet

<b>AS 520.X2 PLUS Analytical Balance</b> WL-104-0184	
<b>Metrological parameters</b>	
Maximum capacity [Max]	520 g
Minimum load	-
Readability [d]	0,1 mg
Verification unit [e]	-
Tare range	-520 g
Standard repeatability [5% Max]	0,07 mg
Standard repeatability [Max]	0,2 mg
Standard minimum weight (USP)	140 mg
Standard minimum weight (U=1%, k=2)	14 mg
Permissible repeatability [5% Max]	0,12 mg
Permissible repeatability [Max]	0,4 mg
Linearity	±0,6 mg
Stabilization time	2,5 s
Adjustment	internal (automatic)
OIML Class	I
<b>Physical parameters</b>	
Leveling system	semi-automatic – LevelSENSING
Display	5" graphic color touchscreen
Weighing chamber doors	manual
Delivery components	Balance, weighing pan, osłona weighing pans, bottom cover, power supply.
Weighing chamber dimensions	190×190×226 mm
Weighing pan dimensions	ø100 mm
Packaging dimensions	490×400×520 mm
Net weight	7,3 kg
Gross weight	9 kg
<b>Construction</b>	
Protection class	IP 43
<b>Components and software</b>	
Database capacity	Products, Users, Packaging, Customers, Formulations, Formulations reports, Ambient Conditions, Weighings, Alibi memory
<b>Features of use</b>	
Touch-free operation	2 IR Sensors
<b>Communication interface</b>	
Communication interface	2×RS232 <sup>1</sup> , 2×USB-A (interchangeable), USB-B, Wi-Fi, Ethernet
<b>Electrical parameters</b>	
Power supply	Adapter: 100 – 240V AC 50/60Hz 0,6A; 12V DC 1,2A Balance: 12 – 15V DC 0,8A max
Power consumption max.	4 W
<b>Environmental conditions</b>	
Operating temperature	+10 – +40 °C
Ambient conditions monitoring (option)	THBR 2.0 System, THBR BOX, THB P, THB W, THB S
Relative humidity	40% – 80%

Repeatability is expressed as a standard deviation from 10 weighing cycles. Stabilization time depends on the ambient conditions and the dynamics of weighing pan loading; specified for FAST profile. 1 Barcode scanners, available as weighing instrument accessory, communicate with the instrument via RS232 interface exclusively.

\* Wi-Fi® is a registered trademark of Wi-Fi® Alliance.



Additional fee for verification



## Accessories (Additional Fee)

Antivibration Tables  
Holders for laboratory flasks  
Power Adapters  
Cigarette lighter receptacle power supply cables  
Density determination KIT  
USB cable (scale - printer)  
Professional Weighing Tables  
Barcode scanners  
Holders for test tubes and filters  
Workstation for Pipettes Calibration  
RS 232, RS 485 cables

THBR 2.0 System - Ambient Conditions Monitoring  
Displays  
Protective cover for balances  
Weighing dishes  
Antistatic ionizer  
Receipt Printer  
RS 232, RS 485 cables  
Additional modules  
Under-pan weighing  
RS 232 cables (scale - printer)  
RS 232 – RS 485 Converter

## Software (Additional Fee)

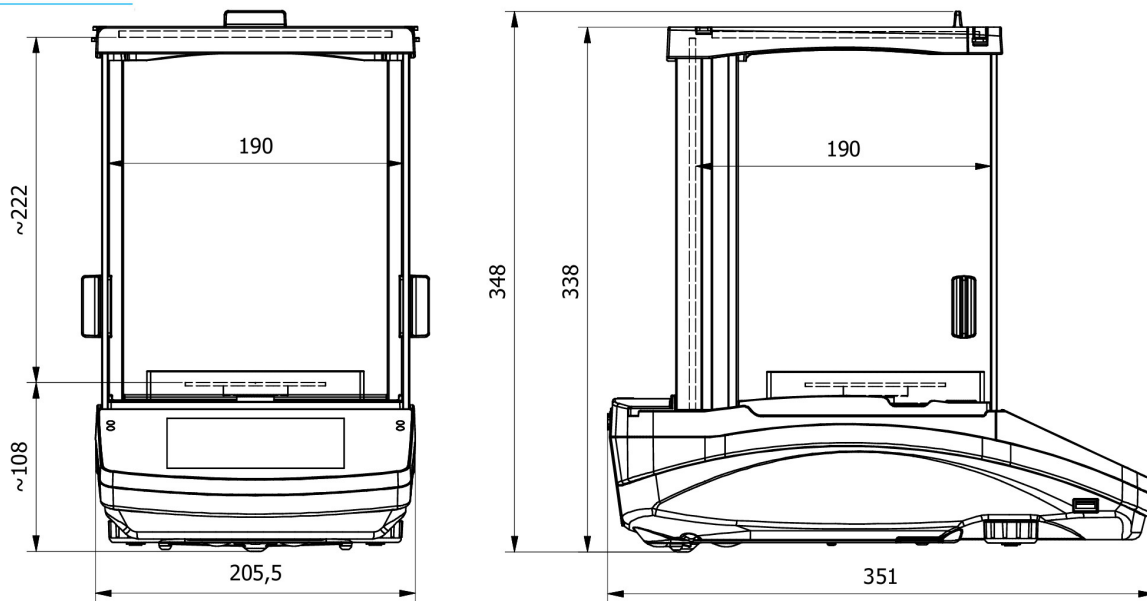
RAD-KEY  
R-LAB  
RADWAG Development Studio

Alibi Reader  
Scales Editor 2.1

## Device dimensions

AS 520.X2 PLUS Analytical Balance, AS 82/220.X2 PLUS Analytical Balance, AS 160.X2 PLUS Analytical Balance, AS 120.X2 PLUS Analytical Balance, AS 60/220.X2 PLUS Analytical Balance, AS 62.X2 PLUS Analytical Balance, AS 220.X2 PLUS Analytical Balance, AS 310.X2 PLUS Analytical Balance

AS X2 PLUS, d = 0.01 mg



AS X2 PLUS, d = 0.1 mg

