



More information on the website  
radwag.com/en/info,w1,MD7

XA 82/220.5Y Analytical Balance, XA 220.5Y Analytical Balance, XA 110.5Y Analytical Balance,  
XA 210.5Y Analytical Balance, XA 310.5Y Analytical Balance, XA 52.5Y Analytical Balance, XA  
120/250.5Y Analytical Balance, XA 520.5Y Analytical Balance



XA 82/220.5Y Analytical Balance  
XA 110.5Y Analytical Balance  
XA 210.5Y Analytical Balance  
XA 52.5Y Analytical Balance  
XA 120/250.5Y Analytical Balance



XA 220.5Y Analytical Balance  
XA 310.5Y Analytical Balance  
XA 520.5Y Analytical Balance

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

## Functions



Autotest



Dosing



Percent Weighing



Parts counting



Peak hold



Formulation



Newton unit  
measurement



Statistics



Checkweighing



IR sensors



Under-pan weighing



GLP Procedures



Animal weighing



Pipettes Calibration



Air density correction



Density determination



Differential weighing



Ambient conditions  
monitoring



Statistical Quality Control



Packaged Goods Control



ALIBI Memory



Wi-Fi



Moveable range:  
- XA 82/220.5Y Analytical  
Balance  
- XA 120/250.5Y Analytical  
Balance

# Datasheet

|                                     | XA 52.5Y Analytical Balance<br>WL-110-0009                                                                                  | XA 82/220.5Y Analytical Balance<br>WL-110-1001                                                                              | XA 110.5Y Analytical Balance<br>WL-110-0010                                                                                 |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Metrological parameters             |                                                                                                                             |                                                                                                                             |                                                                                                                             |
| Maximum capacity [Max]              | 52 g                                                                                                                        | 82 / 220 g                                                                                                                  | 110 g                                                                                                                       |
| Minimum load                        | 1 mg                                                                                                                        | 1 mg                                                                                                                        | 1 mg                                                                                                                        |
| Readability [d]                     | 0,01 mg                                                                                                                     | 0,01 / 0,1 mg                                                                                                               | 0,01 mg                                                                                                                     |
| Verification unit [e]               | 1 mg                                                                                                                        | 1 mg                                                                                                                        | 1 mg                                                                                                                        |
| Tare range                          | -52 g                                                                                                                       | -220 g                                                                                                                      | -110 g                                                                                                                      |
| Standard repeatability [5% Max]     | 0,005 mg                                                                                                                    | 0,005 mg                                                                                                                    | 0,005 mg                                                                                                                    |
| Standard repeatability [Max]        | 0,01 mg                                                                                                                     | 0,06 mg                                                                                                                     | 0,02 mg                                                                                                                     |
| Standard minimum weight (USP)       | 10 mg                                                                                                                       | 10 mg                                                                                                                       | 10 mg                                                                                                                       |
| Standard minimum weight (U=1%, k=2) | 1 mg                                                                                                                        | 1 mg                                                                                                                        | 1 mg                                                                                                                        |
| Permissible repeatability [5% Max]  | 0,012 mg                                                                                                                    | 0,012 mg                                                                                                                    | 0,012 mg                                                                                                                    |
| Permissible repeatability [Max]     | 0,02 mg                                                                                                                     | 0,08 mg                                                                                                                     | 0,03 mg                                                                                                                     |
| Linearity                           | ±0,03 mg                                                                                                                    | ±0,06 / 0,2 mg                                                                                                              | ±0,06 mg                                                                                                                    |
| Eccentric load deviation            | 0,03 mg                                                                                                                     | 0,2 mg                                                                                                                      | 0,06 mg                                                                                                                     |
| Sensitivity time drift              | $1 \times 10^{-6} / \text{Year} \times \text{Rt}$                                                                           | $1 \times 10^{-6} / \text{Year} \times \text{Rt}$                                                                           | $1 \times 10^{-6} / \text{Year} \times \text{Rt}$                                                                           |
| Stabilization time                  | 4 s                                                                                                                         | 4 s                                                                                                                         | 4 s                                                                                                                         |
| Adjustment                          | internal (automatic)                                                                                                        | internal (automatic)                                                                                                        | internal (automatic)                                                                                                        |
| OIML Class                          | I                                                                                                                           | I                                                                                                                           | I                                                                                                                           |
| Physical parameters                 |                                                                                                                             |                                                                                                                             |                                                                                                                             |
| Leveling system                     | semi-automatic – LevelSENSING                                                                                               | semi-automatic – LevelSENSING                                                                                               | semi-automatic – LevelSENSING                                                                                               |
| Display                             | 10" graphic colour touchscreen                                                                                              | 10" graphic colour touchscreen                                                                                              | 10" graphic colour touchscreen                                                                                              |
| Weighing chamber doors              | manual                                                                                                                      | manual                                                                                                                      | manual                                                                                                                      |
| Delivery components                 | Analytical Balance, weighing pan, weighing pan shield, centring ring, bottom cover, brush, fabric dust cover, power supply. | Analytical Balance, weighing pan, weighing pan shield, centring ring, bottom cover, brush, fabric dust cover, power supply. | Analytical Balance, weighing pan, weighing pan shield, centring ring, bottom cover, brush, fabric dust cover, power supply. |
| Weighing chamber dimensions         | 168×160×228 mm                                                                                                              | 168×160×228 mm                                                                                                              | 168×160×228 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 W x D x H      | 750×492×595 mm                                                                                                              | 750×492×595 mm                                                                                                              | 750×492×595 mm                                                                                                              |
| Net weight                          | 10,5 kg                                                                                                                     | 9,8 kg                                                                                                                      | 9,8 kg                                                                                                                      |
| Gross weight                        | 15,5 kg                                                                                                                     | 16 kg                                                                                                                       | 16 kg                                                                                                                       |
| Construction                        |                                                                                                                             |                                                                                                                             |                                                                                                                             |
| Protection class                    | IP 43                                                                                                                       | IP 43                                                                                                                       | IP 43                                                                                                                       |
| Communication interface             |                                                                                                                             |                                                                                                                             |                                                                                                                             |
| Communication interface             | 2×USB-A, USB-C, RS 232 (COM3), HDMI, Ethernet, Wi-Fi, Hotspot                                                               | 2×USB-A, USB-C, RS 232 (COM3), HDMI, Ethernet, Wi-Fi, Hotspot                                                               | 2×USB-A, USB-C, RS 232 (COM3), HDMI, Ethernet, Wi-Fi, Hotspot                                                               |
| Electrical parameters               |                                                                                                                             |                                                                                                                             |                                                                                                                             |
| Power supply                        | Adapter: 100 – 240V AC 50/60Hz 1A; 15V DC 2,4A<br>Balance: 12 – 15V DC 1,6A max*                                            | Adapter: 100 – 240V AC 50/60Hz 1A; 15V DC 2,4A<br>Balance: 12 – 15V DC 1,6A max*                                            | Adapter: 100 – 240V AC 50/60Hz 1A; 15V DC 2,4A<br>Balance: 12 – 15V DC 1,6A max*                                            |
| Environmental conditions            |                                                                                                                             |                                                                                                                             |                                                                                                                             |
| Operating temperature               | +10 – +40 °C                                                                                                                | +10 – +40 °C                                                                                                                | +10 – +40 °C                                                                                                                |
| Operating temperature change rate   | ±0,3 °C / 1 h (±1 °C / 8 h)                                                                                                 | ±0,3 °C / 1 h (±1 °C / 8 h)                                                                                                 | ±0,3 °C / 1 h (±1 °C / 8 h)                                                                                                 |
| Relative humidity                   | 20% – 80%                                                                                                                   | 20% – 80%                                                                                                                   | 20% – 80%                                                                                                                   |
| Relative humidity change rate       | ±1% / h (±4% / 8 h)                                                                                                         | ±1% / h (±4% / 8 h)                                                                                                         | ±1% / h (±4% / 8 h)                                                                                                         |

Repeatability is expressed as a standard deviation from 10 cycles of mass standard weighing. Stabilization time depends on the ambient conditions and the dynamics of weighing pan loading; specified for FAST profile. \* The power supply can be connected to the socket on the

back of the balance housing or to the terminal.

## Datasheet

|                                            | XA 120/250.5Y Analytical Balance<br>WL-110-1002                                                                             | XA 210.5Y Analytical Balance<br>WL-110-0011                                                                                 | XA 220.5Y Analytical Balance<br>WL-110-0012                                                                  |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <b>Metrological parameters</b>             |                                                                                                                             |                                                                                                                             |                                                                                                              |
| <b>Maximum capacity [Max]</b>              | 120 / 250 g                                                                                                                 | 210 g                                                                                                                       | 220 g                                                                                                        |
| <b>Minimum load</b>                        | 1 mg                                                                                                                        | 1 mg                                                                                                                        | 10 mg                                                                                                        |
| <b>Readability [d]</b>                     | 0,01 / 0,1 mg                                                                                                               | 0,01 mg                                                                                                                     | 0,1 mg                                                                                                       |
| <b>Verification unit [e]</b>               | 1 mg                                                                                                                        | 1 mg                                                                                                                        | 1 mg                                                                                                         |
| <b>Tare range</b>                          | -250 g                                                                                                                      | -210 g                                                                                                                      | -220 g                                                                                                       |
| <b>Standard repeatability [5% Max]</b>     | 0,005 mg                                                                                                                    | 0,005 mg                                                                                                                    | 0,05 mg                                                                                                      |
| <b>Standard repeatability [Max]</b>        | 0,06 mg                                                                                                                     | 0,025 mg                                                                                                                    | 0,08 mg                                                                                                      |
| <b>Standard minimum weight (USP)</b>       | 10 mg                                                                                                                       | 10 mg                                                                                                                       | 100 mg                                                                                                       |
| <b>Standard minimum weight (U=1%, k=2)</b> | 1 mg                                                                                                                        | 1 mg                                                                                                                        | 10 mg                                                                                                        |
| <b>Permissible repeatability [5% Max]</b>  | 0,012 mg                                                                                                                    | 0,012 mg                                                                                                                    | 0,07 mg                                                                                                      |
| <b>Permissible repeatability [Max]</b>     | 0,1 mg                                                                                                                      | 0,035 mg                                                                                                                    | 0,1 mg                                                                                                       |
| <b>Linearity</b>                           | ±0,06 / 0,2 mg                                                                                                              | ±0,1 mg                                                                                                                     | ±0,2 mg                                                                                                      |
| <b>Eccentric load deviation</b>            | 0,2 mg                                                                                                                      | 0,1 mg                                                                                                                      | 0,2 mg                                                                                                       |
| <b>Sensitivity time drift</b>              | $1 \times 10^{-6} / \text{Year} \times \text{Rt}$                                                                           | $1 \times 10^{-6} / \text{Year} \times \text{Rt}$                                                                           | $1 \times 10^{-6} / \text{Year} \times \text{Rt}$                                                            |
| <b>Stabilization time</b>                  | 3 s                                                                                                                         | 4 s                                                                                                                         | 1,3 s                                                                                                        |
| <b>Adjustment</b>                          | internal (automatic)                                                                                                        | internal (automatic)                                                                                                        | internal (automatic)                                                                                         |
| <b>OIML Class</b>                          | I                                                                                                                           | I                                                                                                                           | I                                                                                                            |
| <b>Physical parameters</b>                 |                                                                                                                             |                                                                                                                             |                                                                                                              |
| <b>Leveling system</b>                     | semi-automatic – LevelSENSING                                                                                               | semi-automatic – LevelSENSING                                                                                               | semi-automatic – LevelSENSING                                                                                |
| <b>Display</b>                             | 10" graphic colour touchscreen                                                                                              | 10" graphic colour touchscreen                                                                                              | 10" graphic colour touchscreen                                                                               |
| <b>Weighing chamber doors</b>              | manual                                                                                                                      | manual                                                                                                                      | manual                                                                                                       |
| <b>Delivery components</b>                 | Analytical Balance, weighing pan, weighing pan shield, centring ring, bottom cover, brush, fabric dust cover, power supply. | Analytical Balance, weighing pan, weighing pan shield, centring ring, bottom cover, brush, fabric dust cover, power supply. | Analytical Balance, weighing pan, weighing pan shield, bottom cover, brush, fabric dust cover, power supply. |
| <b>Weighing chamber dimensions</b>         | 168×160×228 mm                                                                                                              | 168×160×228 mm                                                                                                              | 168×160×228 mm                                                                                               |
| <b>Weighing pan dimensions</b>             | ø90 open-work pan + ø85 (option) mm                                                                                         | ø90 open-work pan + ø85 (option) mm                                                                                         | ø100 mm                                                                                                      |
| <b>Packaging dimensions W x D x H</b>      | 750×492×595 mm                                                                                                              | 750×492×595 mm                                                                                                              | 750×492×595 mm                                                                                               |
| <b>Net weight</b>                          | 9,8 kg                                                                                                                      | 9,8 kg                                                                                                                      | 9,8 kg                                                                                                       |
| <b>Gross weight</b>                        | 14,3 kg                                                                                                                     | 16,5 kg                                                                                                                     | 16,5 kg                                                                                                      |
| <b>Construction</b>                        |                                                                                                                             |                                                                                                                             |                                                                                                              |
| <b>Protection class</b>                    | IP 43                                                                                                                       | IP 43                                                                                                                       | IP 43                                                                                                        |
| <b>Communication interface</b>             |                                                                                                                             |                                                                                                                             |                                                                                                              |
| <b>Communication interface</b>             | 2×USB-A, USB-C, RS 232 (COM3), HDMI, Ethernet, Wi-Fi, Hotspot                                                               | 2×USB-A, USB-C, RS 232 (COM3), HDMI, Ethernet, Wi-Fi, Hotspot                                                               | 2×USB-A, USB-C, RS 232 (COM3), HDMI, Ethernet, Wi-Fi, Hotspot                                                |
| <b>Electrical parameters</b>               |                                                                                                                             |                                                                                                                             |                                                                                                              |
| <b>Power supply</b>                        | Adapter: 100 – 240V AC 50/60Hz 1A; 15V DC 2,4A<br>Balance: 12 – 15V DC 1,6A max*                                            | Adapter: 100 – 240V AC 50/60Hz 1A; 15V DC 2,4A<br>Balance: 12 – 15V DC 1,6A max*                                            | Adapter: 100 – 240V AC 50/60Hz 1A; 15V DC 2,4A<br>Balance: 12 – 15V DC 1,6A max*                             |
| <b>Environmental conditions</b>            |                                                                                                                             |                                                                                                                             |                                                                                                              |
| <b>Operating temperature</b>               | +10 – +40 °C                                                                                                                | +10 – +40 °C                                                                                                                | +10 – +40 °C                                                                                                 |
| <b>Operating temperature change rate</b>   | ±0,3 °C / 1 h (±1 °C / 8 h)                                                                                                 | ±0,3 °C / 1 h (±1 °C / 8 h)                                                                                                 | ±0,3 °C / 1 h (±1 °C / 8 h)                                                                                  |
| <b>Relative humidity</b>                   | 20% – 80%                                                                                                                   | 20% – 80%                                                                                                                   | 20% – 80%                                                                                                    |
| <b>Relative humidity change rate</b>       | ±1% / h (±4% / 8 h)                                                                                                         | ±1% / h (±4% / 8 h)                                                                                                         | ±1% / h (±4% / 8 h)                                                                                          |

Repeatability is expressed as a standard deviation from 10 cycles of mass standard weighing. Stabilization time depends on the ambient conditions and the dynamics of weighing pan loading; specified for FAST profile. \* The power supply can be connected to the socket on the back of the balance housing or to the terminal.

## Datasheet

|                                            | <b>XA 310.5Y Analytical Balance</b><br>WL-110-0013                                                           | <b>XA 520.5Y Analytical Balance</b><br>WL-110-0014                                                           |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <b>Metrological parameters</b>             |                                                                                                              |                                                                                                              |
| <b>Maximum capacity [Max]</b>              | 310 g                                                                                                        | 520 g                                                                                                        |
| <b>Minimum load</b>                        | 10 mg                                                                                                        | -                                                                                                            |
| <b>Readability [d]</b>                     | 0,1 mg                                                                                                       | 0,1 mg                                                                                                       |
| <b>Verification unit [e]</b>               | 1 mg                                                                                                         | -                                                                                                            |
| <b>Tare range</b>                          | -310 g                                                                                                       | -520 g                                                                                                       |
| <b>Standard repeatability [5% Max]</b>     | 0,05 mg                                                                                                      | 0,07 mg                                                                                                      |
| <b>Standard repeatability [Max]</b>        | 0,1 mg                                                                                                       | 0,18 mg                                                                                                      |
| <b>Standard minimum weight (USP)</b>       | 100 mg                                                                                                       | 140 mg                                                                                                       |
| <b>Standard minimum weight (U=1%, k=2)</b> | 10 mg                                                                                                        | 14 mg                                                                                                        |
| <b>Permissible repeatability [5% Max]</b>  | 0,07 mg                                                                                                      | 0,12 mg                                                                                                      |
| <b>Permissible repeatability [Max]</b>     | 0,15 mg                                                                                                      | 0,25 mg                                                                                                      |
| <b>Linearity</b>                           | ±0,2 mg                                                                                                      | ±0,5 mg                                                                                                      |
| <b>Eccentric load deviation</b>            | 0,3 mg                                                                                                       | 0,4 mg                                                                                                       |
| <b>Sensitivity time drift</b>              | $1 \times 10^{-6} / \text{Year} \times \text{Rt}$                                                            | $1 \times 10^{-6} / \text{Year} \times \text{Rt}$                                                            |
| <b>Stabilization time</b>                  | 1,3 s                                                                                                        | 1,3 s                                                                                                        |
| <b>Adjustment</b>                          | internal (automatic)                                                                                         | internal (automatic)                                                                                         |
| <b>OIML Class</b>                          | I                                                                                                            | -                                                                                                            |
| <b>Physical parameters</b>                 |                                                                                                              |                                                                                                              |
| <b>Leveling system</b>                     | semi-automatic – LevelSENSING                                                                                | semi-automatic – LevelSENSING                                                                                |
| <b>Display</b>                             | 10" graphic colour touchscreen                                                                               | 10" graphic colour touchscreen                                                                               |
| <b>Weighing chamber doors</b>              | manual                                                                                                       | manual                                                                                                       |
| <b>Delivery components</b>                 | Analytical Balance, weighing pan, weighing pan shield, bottom cover, brush, fabric dust cover, power supply. | Analytical Balance, weighing pan, weighing pan shield, bottom cover, brush, fabric dust cover, power supply. |
| <b>Weighing chamber dimensions</b>         | 168×160×228 mm                                                                                               | 168×160×228 mm                                                                                               |
| <b>Weighing pan dimensions</b>             | ø100 mm                                                                                                      | ø100 mm                                                                                                      |
| <b>Packaging dimensions W x D x H</b>      | 750×492×595 mm                                                                                               | 750×492×595 mm                                                                                               |
| <b>Net weight</b>                          | 9,8 kg                                                                                                       | 9,8 kg                                                                                                       |
| <b>Gross weight</b>                        | 14,3 kg                                                                                                      | 14,3 kg                                                                                                      |
| <b>Construction</b>                        |                                                                                                              |                                                                                                              |
| <b>Protection class</b>                    | IP 43                                                                                                        | IP 43                                                                                                        |
| <b>Communication interface</b>             |                                                                                                              |                                                                                                              |
| <b>Communication interface</b>             | 2×USB-A, USB-C, RS 232 (COM3), HDMI, Ethernet, Wi-Fi, Hotspot                                                | 2×USB-A, USB-C, RS 232 (COM3), HDMI, Ethernet, Wi-Fi, Hotspot                                                |
| <b>Electrical parameters</b>               |                                                                                                              |                                                                                                              |
| <b>Power supply</b>                        | Adapter: 100 – 240V AC 50/60Hz 1A;<br>15V DC 2,4A<br>Balance: 12 – 15V DC 1,6A max*                          | Adapter: 100 – 240V AC 50/60Hz 1A;<br>15V DC 2,4A<br>Balance: 12 – 15V DC 1,6A max*                          |
| <b>Environmental conditions</b>            |                                                                                                              |                                                                                                              |
| <b>Operating temperature</b>               | +10 – +40 °C                                                                                                 | +10 – +40 °C                                                                                                 |
| <b>Operating temperature change rate</b>   | ±0,3 °C / 1 h (±1 °C / 8 h)                                                                                  | ±0,3 °C / 1 h (±1 °C / 8 h)                                                                                  |
| <b>Relative humidity</b>                   | 20% – 80%                                                                                                    | 20% – 80%                                                                                                    |
| <b>Relative humidity change rate</b>       | ±1% / h (±4% / 8 h)                                                                                          | ±1% / h (±4% / 8 h)                                                                                          |

Repeatability is expressed as a standard deviation from 10 cycles of mass standard weighing. Stabilization time depends on the ambient conditions and the dynamics of weighing pan loading; specified for FAST profile. \* The power supply can be connected to the socket on the back of the balance housing or to the terminal.

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



Additional fee for verification



## Accessories (Additional Fee)

MediaBox

RFID Tags

Antivibration Tables

Power Adapters

RS 232, RS 485 cables

Holders for laboratory flasks

Density determination KIT

Additional modules

Holders for test tubes and filters

Professional Weighing Tables

Protective cover for balances

Barcode scanners

Automatic feeders

Label Printers

Adapters for Pipettes Calibration

THBR 2.0 System - Ambient Conditions Monitoring

RS 232, RS 485 cables

MICRO-KIT - Set of Holders for Microscale Glassware

Protective cover for balances

Under-pan weighing

Anti-Draft Chamber for XA 4Y and XA 5Y Balances

Weighing dishes

Antistatic ionizer

Receipt Printer

Fingerprint Reader

RS 232 – USB Converter

Under-pan weighing

## Software (Additional Fee)

E2R System

Label Editor R02

R-LAB

RADWAG Development Studio

RAD-KEY

RADWAG Remote Desktop

Scales Editor 2.1

## Device dimensions W x D x H

XA 82/220.5Y Analytical Balance, XA 220.5Y Analytical Balance, XA 110.5Y Analytical Balance, XA 210.5Y Analytical Balance, XA 310.5Y Analytical Balance, XA 52.5Y Analytical Balance, XA 120/250.5Y Analytical Balance, XA 520.5Y Analytical Balance

