



PRODUCT CATALOGUE 2022





5Y ELLIPSIS Laboratory Balances

www.radwag.com



UYA 5Y Ultra-microbalances MYA 5Y Microbalances

[d] down to 0.1 μg

[Max] up to 52 g



UYA 5Y

Ultra-microbalances

MYA 5Y

Microbalances

- World's lowest reading unit [d] 0.1 μg
- Weighing range up to [Max] 52 g
- The lowest minimum weight [USP] 0.3 mg
- Automatic, draft-proof weighing chamber
- Fully automatic levelling system
- Wide variety of applications



UYA 5Y.F

Ultra-microbalances for filters

MYA 5Y.F

Microbalances for filters



MYA 5Y.P

Microbalances for pipette calibration

XA 5Y.M Microbalances

[d] down
to 1 μg
[Max] up
to 53 g



XA 5Y.M
Microbalances

- Reading unit [d] 1 μg
- Spacious weighing chamber: 199 x 157 x 218 mm
- Large weighing pan: \varnothing 30 mm
- Integrated ionizer
- Tool-free disassembly of the chamber



XA 5Y.M.P

Microbalances for pipette calibration



XA 5Y.M.S

Microbalances for stents

XA 5Y Analytical Balances

[d] down
to 0.01 mg

[Max] up
to 520 g



XA 5Y
Analytical balances

- Reading unit [d] 0.01 mg
- Minimum weight: 10 mg
- Conditioning shelf
- Open-work weighing pan
- Integrated ionizer
- Tool-free disassembly of the chamber

AP-12.5Y

Automatic Device for Multichannel Pipette Calibration

[d] = 0.01 mg

[Max] = 52 g



AP-12.5Y

Automatic Device for Multichannel Pipette Calibration

- For calibration of 1-channel and multichannel pipettes starting at 10 µl
- Calibration of up to 12-channel fixed-volume and variable-volume pipettes
- Ambient conditions monitoring
- Semi-automatic levelling system
- Internal adjustment

PM 5Y Precision Balances

[d] down to 0.01 g

[Max] up to 60 kg



PM 5Y

Precision balances

- One of the most innovative balance in the world with [Max] = 20 kg and [d] = 0.01 g
- Large weighing pan: 200 x 185 mm
- Innovative **MONOBLOCK®** weighing module
- Diagnostic tools in accordance with metrological requirements: sensitivity test
- Wide variety of applications

PM 20.5Y



The PM 20.5Y laboratory balance by Radwag is one of the most innovative in the world that can weigh up to 20 kg with 0.01 g readability, using a large 200 x 185 mm weighing pan.

Light mode

Fully secure login system
(face recognition camera)

Touch-free
operation
(IR sensor)

16 working modes

Clear weighing
result

Always visible
necessary statuses

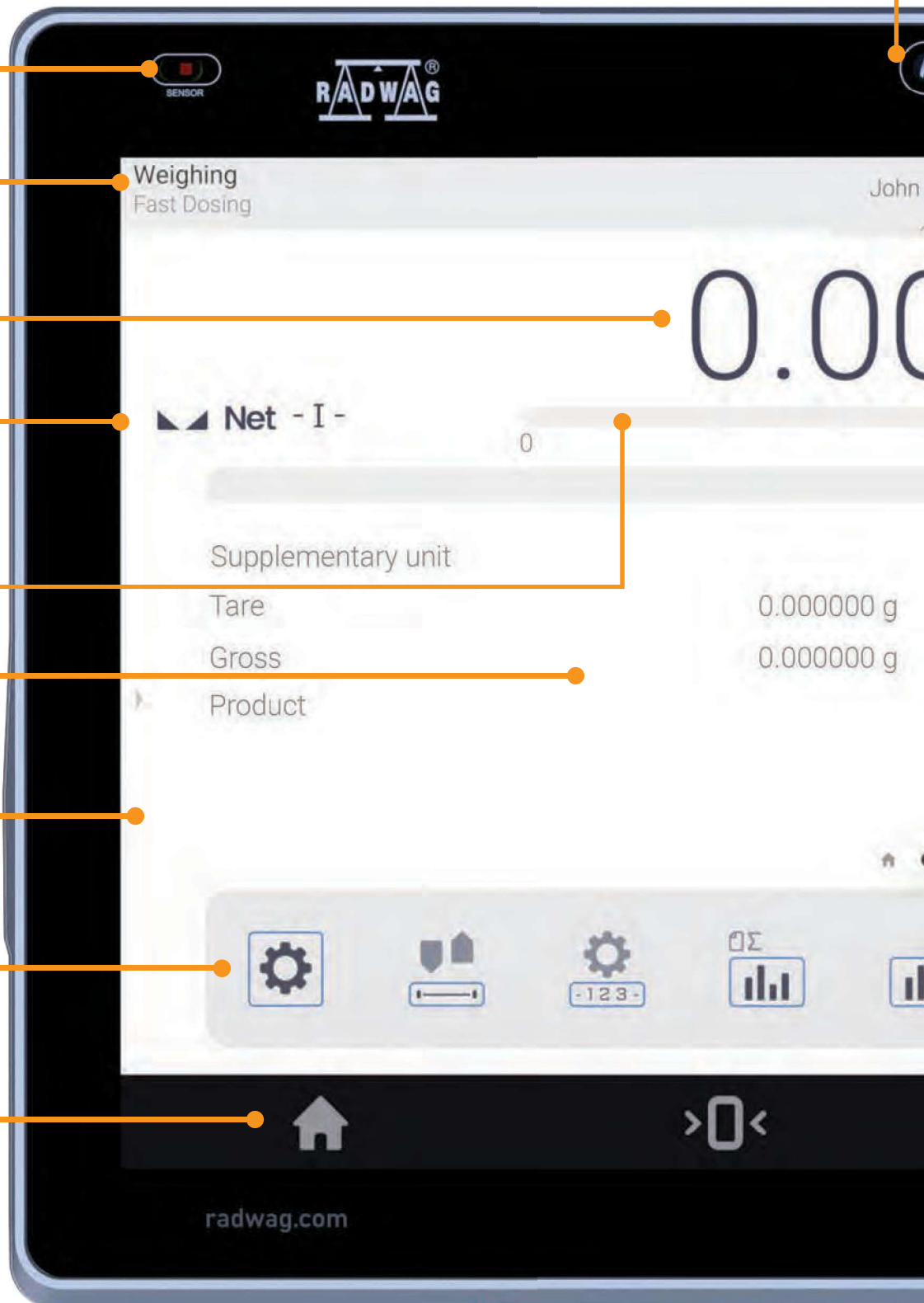
Always visible
necessary statuses

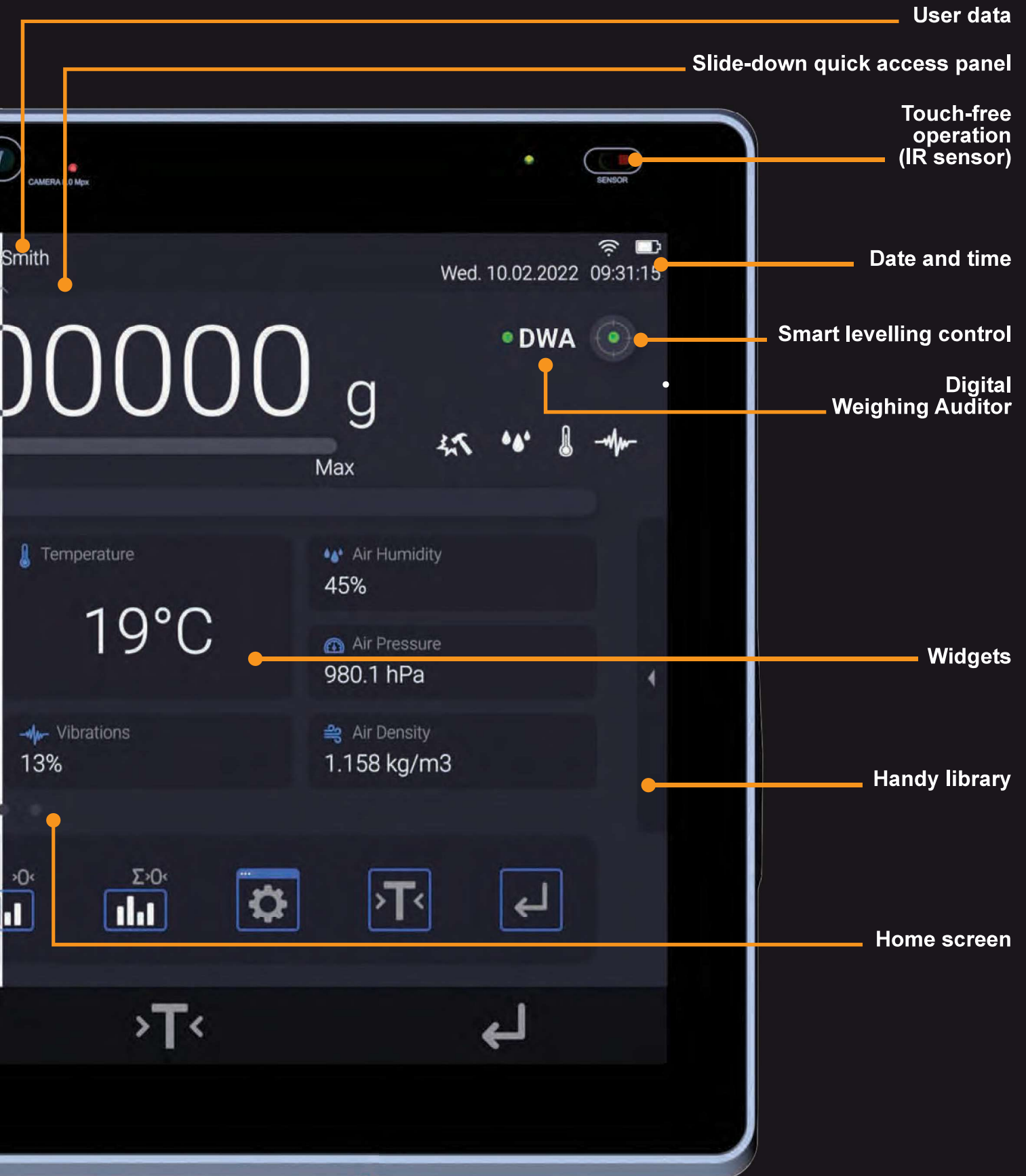
Customized data

Slide-out quick access
panel

Quick access
to commands

Home





Innovative way
of user - balance
communication.

One look
and everything's clear.



Light



It couldn't be easier: the backlight colour informs you about status, process results, procedures, or alerts.

- statuses
- process results
- procedures
- alerts



Connecting ELLIPSIS



Media Box

HDMI
(any large screen)

Ethernet
(printer, computer)

USB-C (Free Link)
(spreadsheet)

Safety First

Audited
login
methods



Quick logout

Hotspot
(smartphone, tablet)



Wi-Fi®
(printer, computer)



USB-A
(printer, computer, barcode scanner)

Compliance confirmation

- 21 CFR Part 11
- DWA
- GMP
- Qualifications
- Validations
- Quality system
- and more



Discover ELLIPSIS

The lowest minimum weight of 0.3 mg,
achievable with modern weighing module.

Such a large chamber, yet still very accurate balance

Work with different labware in a chamber
space of 199 x 157 x 218 mm.

Ionizer

Do you have an electrostatic sample
that cannot be weighed? The ionizer will
neutralize its electrostatic charge.

Give ELLIPSIS a command, and it will carry it out

A set of actions ready to be performed
upon detecting a voice command.

Kensington Lock On/Off

Sample weighed? See the measurements on your computer

Available interfaces: 2 x USB-A, USB-C
(Free Link), Ethernet, Wi-Fi®, Hotspot.

Uncompromising user verification

Fingerprint reader.

One look and everything's clear

It couldn't be easier: the backlight colour informs you about status,
process results, procedures, or alerts.

Tool-free disassembly of the weighing chamber

Contaminated weighing chamber? You don't need any tools to disassemble and clean the ELLIPSIS weighing chamber.



Terminal tilt adjustment





RFID

Always the correct choice of a product or ingredient for a formulation.

ELLIPSIS works with RFID tags that can be used to tag your products or formulation ingredients in the database. It can also be used to identify a user.

5Y ELLIPSIS Laboratory Balances

Hotspot

No space in your fume cupboard or access to the weighing terminal (glovebox)? Or maybe you want to operate the balance remotely?



Thanks to the hotspot, you can operate the balance on any device previously connected to it. This can be a smartphone, tablet, or computer.

Widgets

Always at hand, grouped so that the essentials never slip away.



Up-to-date information on ambient conditions



Real-time statistics from a series of measurements



Looking for More than Just Weighing?

Working modes



Weighing

Basic working mode that displays the mass of a sample.



Parts counting

Quick counting of samples of similar mass.



Checkweighing

Control of sample mass in the set min/max thresholds.



Dosing

Weighing to a target value.



Percent weighing

Percent mass control.



Density

Determining the density of solids and liquids.



Animal weighing

Control of mass change over a set period of time.



Formulations

Weighing of predefined ingredients, according to the order described in the formulation.



Statistics

Real-time statistics determined from carried out weighings.



Pipette calibration

Checking piston pipettes according to customer-specific requirements or ISO 8655.



Differential weighing

Analysing the change in mass of a single sample over time.



SQC

Statistical mass control with set thresholds.



Peak hold

Control of the maximum mass on the pan.



Mass control

Statistical control of samples of similar mass.



Comparator

Control of mass standards.



PGC

Statistical mass measurement in accordance with Packaged Goods Control.

Note Down Your Conclusions

One of ELLIPSIS' innovative features is the ability to add a voice or text note to a series of measurements or a procedure report.



Do You Like to Analyse Data From a Series of Measurements Presented Graphically?

The balance gives you this possibility. You can choose between graphs of measurement series, ambient conditions, SQC with thresholds, and Gaussian distribution.



Weighing graph



Ambient conditions graph



Vibration graph



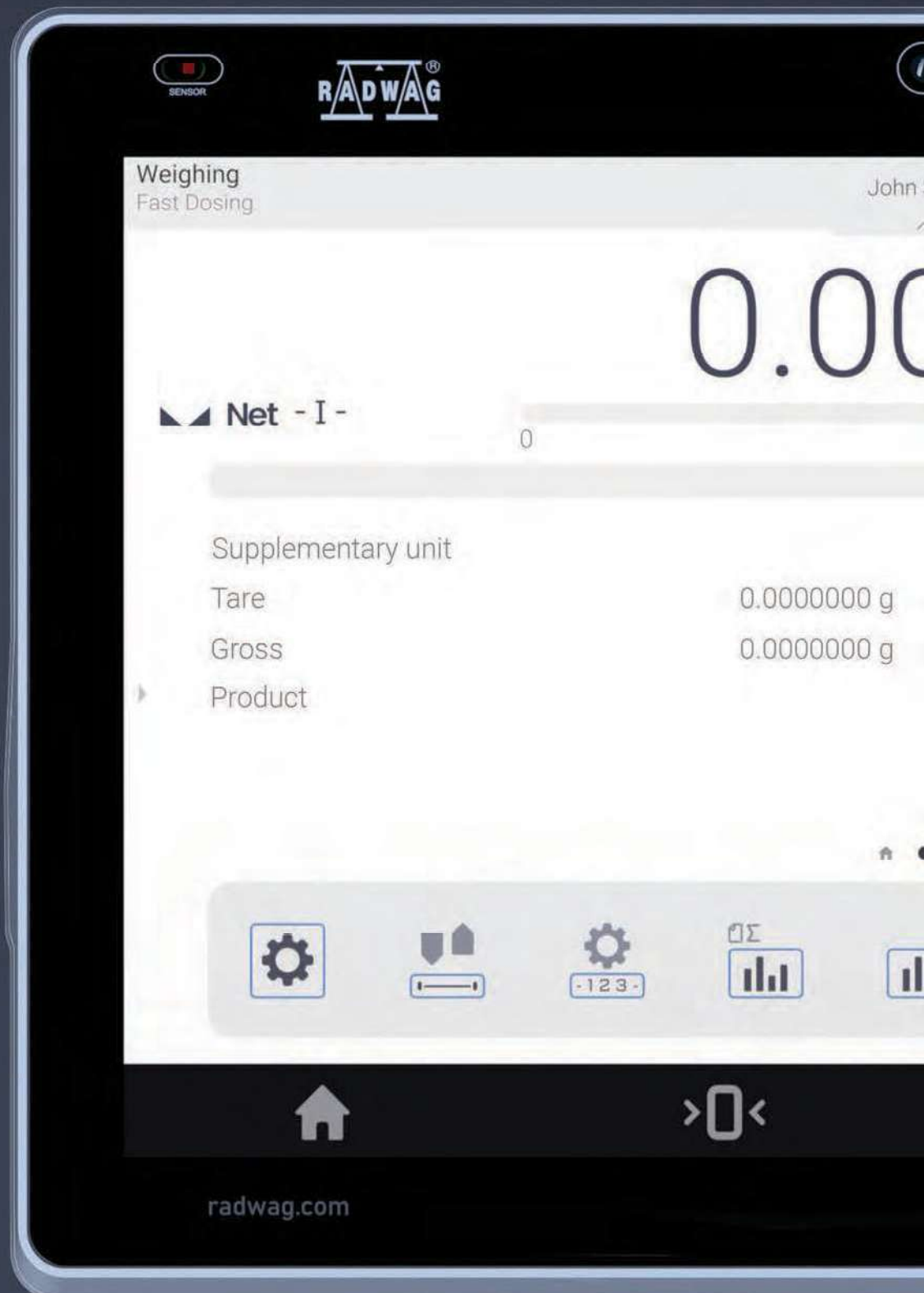
SQC graph



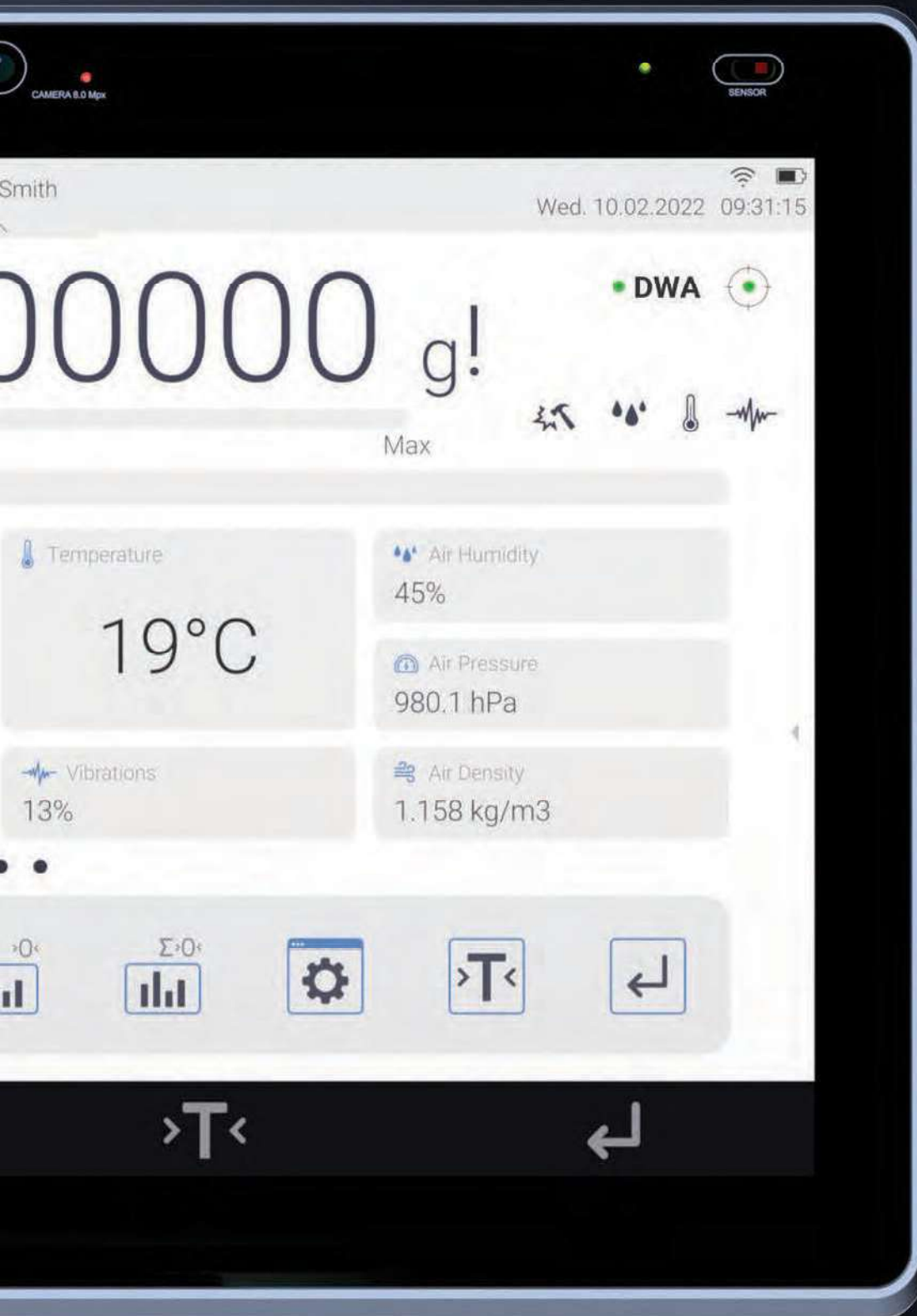
Gaussian distribution graph

DWA - Digital Weighing Auditor

Have you ever wondered if your balance is ready for work?
The Digital Weighing Auditor makes sure it is.



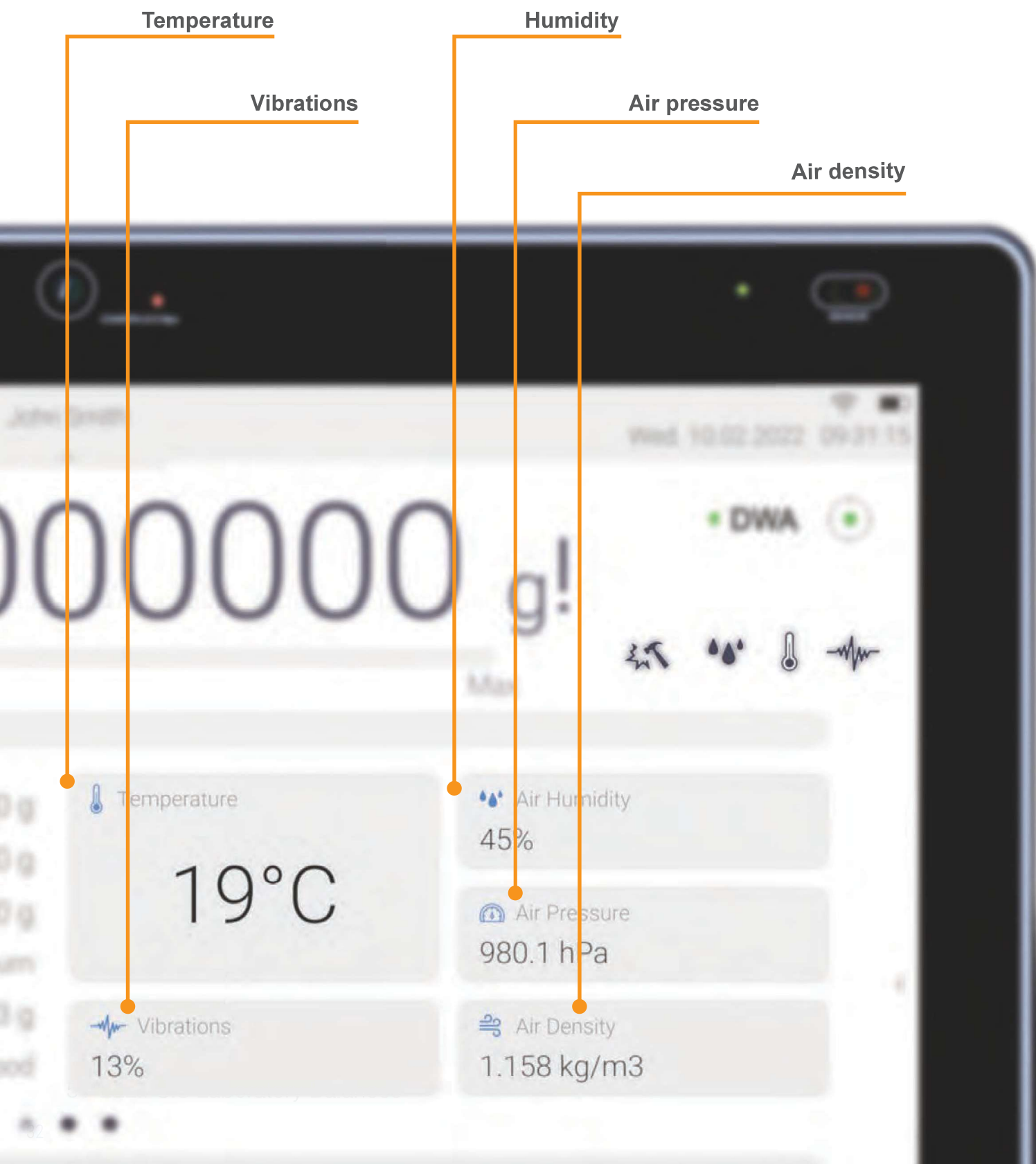
DWA is a system that monitors ambient conditions (temperature, humidity, pressure, and vibration), balance levelling, adjustment, USP compliance, and ionizer operation. It enables air buoyancy compensation in real-time. What is more, it signals the need for a balance inspection or a periodic audit of the balance's accuracy and sensitivity. ELLIPSIS signals the results of the digital audit via Ambient Light, pictograms on the home screen, or a speaker.



- DWA
- DWA
- DWA

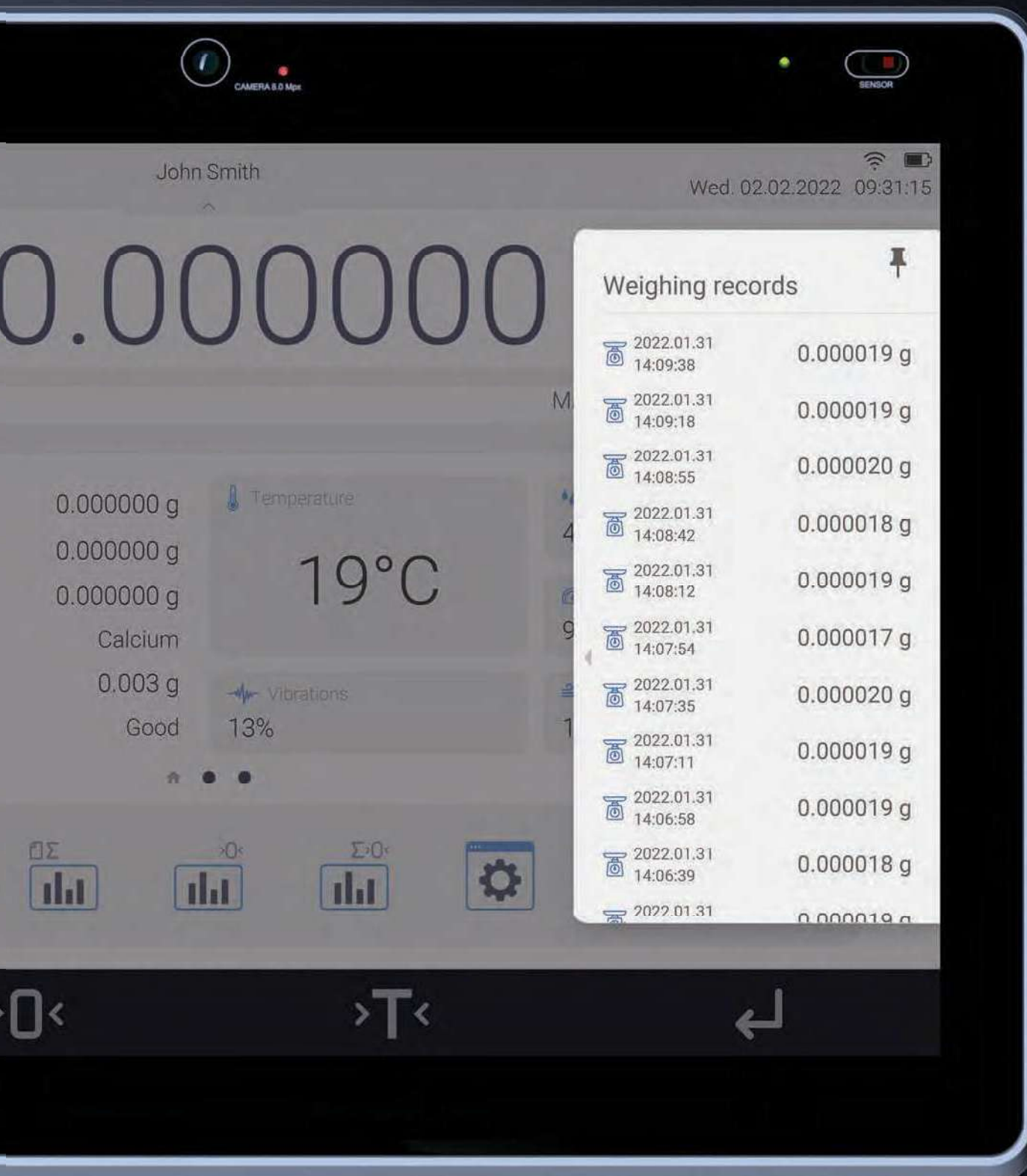
Are the Conditions in Your Laboratory the Best for the Balance You Have?

ELLIPSIS monitors temperature, humidity, pressure, and vibration. The results are displayed as graphs or a widget on the home screen. Unsuitable conditions for the balance are signalled by DWA. And all of this is recorded in a dedicated database.



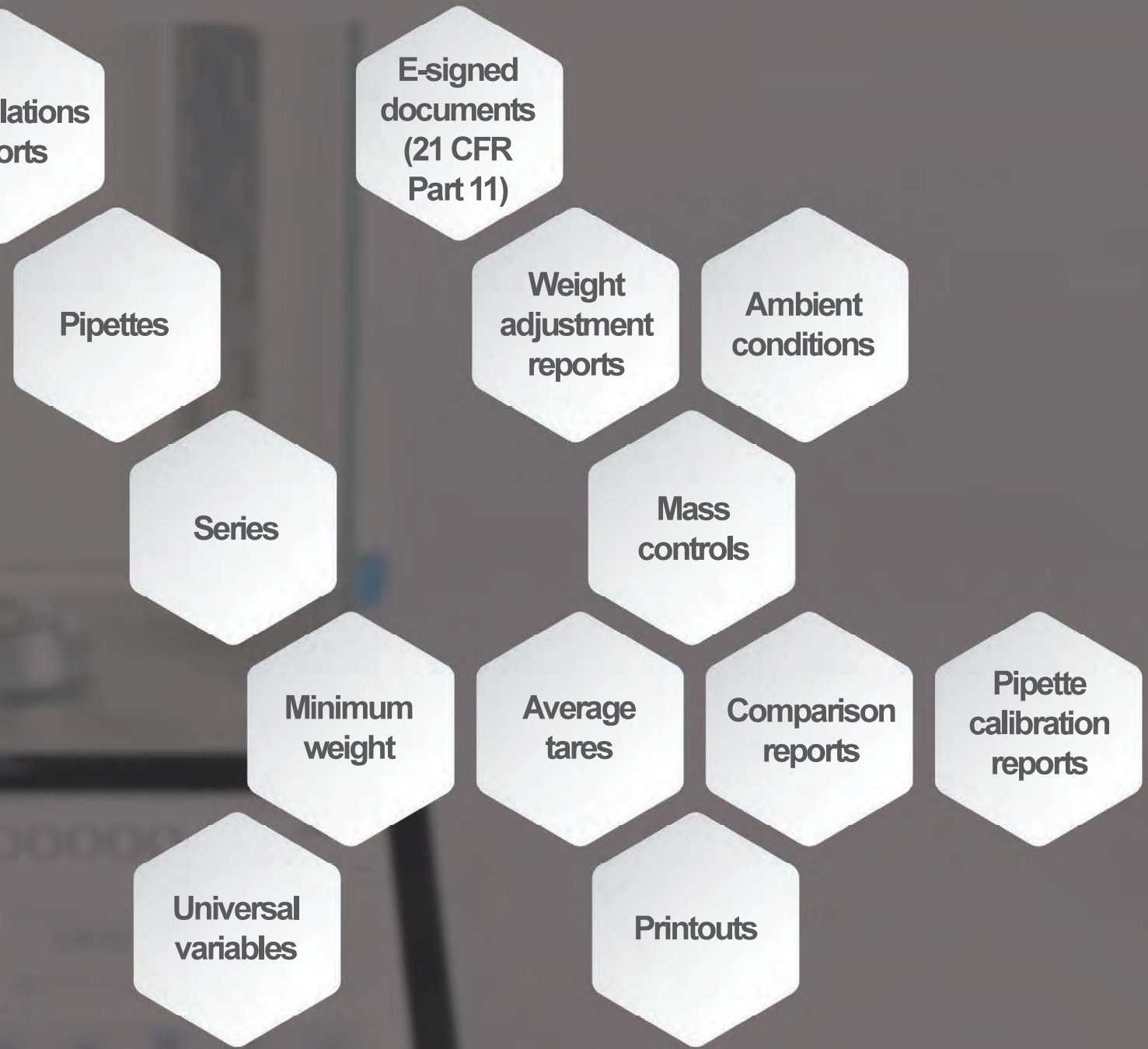
What Was the Value of the Previous Measurement?

ELLIPSIS always displays the history of the last 20 measurements on the slide-out panel. It is also here where the measurement series ready for e-signature, in accordance with 21 CFR Part 11, can be found.



Have You Ever Failed to Record the Weighing Result?





Don't Take Our Word for It?

With ELLIPSIS, you can get:

- Declaration of conformity
- Calibration certificate
- IQ, OQ, PQ documents
- 21 CFR Part 11 qualification
- USP compliance qualification
- Compliance with the latest version of the Pharmacopoeia





RADWAG
John Smith
Wed 10.02.2022
Weighing
Fast Oosing
0.000000 g
Max
Net -1- 0
Supplementary unit
Tare
Gross
Product
Temperature
19°C
Air Humidity
45%
Air Pressure
980
VIBRATOR
3%

RFID

radWag.com

21 CFR Part 11

EU GMP Annex 11



- Password strength settings
- Maximum number of incorrect login attempts
- Auto-logout of inactive user
- Permissions for non-logged-in users
- Permissions for electronic signature
- Permissions for databases management
- Creating database backup
- Adding respectively secured users
- Adding and editing databases according to permissions granted
- Replacing paper documents with digital ones
- Highest level of report security
- Separate database with saved reports
- Signature information
- Validation of the electronically signed report
- Comments on the report
- Three validation levels
- Automatic recording of changes in databases
- Audit trail preview
- Export of audit trail data

**Do you work in the pharmaceutical industry? Do you need a digital signature?
We are offering the laboratory balance which as a standalone fully meets the requirements
of 21 CFR Part 11 / EU GMP Annex 11.**

Applications

If you use labware, weigh stents or filters, or want to check your pipette, use the ELLIPSIS accessories available:



Microscale glassware



Stents



Pipette calibration adapters



Filters

Technical Specification

Ultra-Microbalances



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-109-0001	UYA 2.5Y	2.1 g	0.1 µg	0.15 µg	ø 16 mm
WL-109-0002	UYA 6.5Y	6.1 g	0.1 µg	0.2 µg	ø 16 mm



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-109-0003	UYA 2.5Y.F	2.1 g	0.1 µg	0.15 µg	ø 16 mm, ø 70 mm

Microbalances



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-109-1000	MYA 0,8/3.5Y	0.8/3 g	1/10 µg	0.6 µg	ø16 + ø60 mm
WL-109-0004	MYA 2.5Y	2.1 g	1 µg	0.41 µg	ø16 mm
WL-109-0006	MYA 5.5Y	5.1 g	1 µg	0.6 µg	ø26 mm
WL-109-0007	MYA 6.5Y	6.1 g	1 µg	0.6 µg	ø26 mm
WL-109-0008	MYA 11.5Y	11 g	1 µg	0.45 µg	ø26 mm
WL-109-1001	MYA 11/52.5Y	11/52 g	1/10 µg	1.5 µg	ø26 + ø40 mm
WL-109-1002	MYA 21/52.5Y	21/52 g	1/10 µg	1.5 µg	ø26 + ø40 mm
WL-109-0010	MYA 21.5Y	21 g	1 µg	1 µg	ø26 mm
WL-109-0011	MYA 31.5Y	31 g	1 µg	1.2 µg	ø26 mm

Microbalances for Pipette Calibration



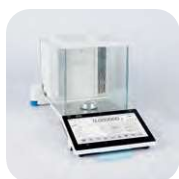
Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-109-0024	MYA 5.5Y.F.A	5.1 g	1 µg	0,6 µg	ø70 + ø16 mm
WL-109-0025	MYA 5.5Y.F1	5.1 g	1 µg	0,6 µg	ø160 + ø26 mm

Microbalances for filters



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-109-0023	MYA 21.5Y.P	21 g	1 µg	1 µg	ø26 mm

Microbalances



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-109-0013	XA 6.5Y.M	6.1 g	1 µg	0.8 µg	ø30 mm
WL-109-1003	XA 6/21.5Y.M	6/21 g	1/2 µg	1.3 µg	ø30 mm
WL-109-0015	XA 21.5Y.M	21 g	1 µg	1.3 µg	ø30 mm
WL-109-1004	XA 21/52.5Y.M	21/52 g	1/5 µg	1.5 µg	ø30 mm
WL-109-0017	XA 52.5Y.M	52 g	5 µg	2.2 µg	ø30 mm
WL-109-0018	XA 53.5Y.M	53 g	1 µg	1.5 µg	ø30 mm

Microbalances for Pipettes Calibration



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-112-1000	XA 6/21.5Y.M.A.P	6/21 g	1/2 µg	1.3 µg	ø26 mm
WL-112-0001	XA 21.5Y.M.A.P	21 g	1 µg	1.3 µg	ø26 mm
WL-112-1001	XA 21/52.5Y.M.A.P	21/52 g	1/5 µg	1.5 µg	ø26 mm
WL-112-0002	XA 52.5Y.M.A.P	52 g	5 µg	2.2 µg	ø26 mm
WL-112-0003	XA 53.5Y.M.A.P	53 g	1 µg	1.5 µg	ø26 mm

Microbalances for Stents



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-109-0026	XA 6.5Y.M.S	6 g	1 µg	1,3 µg	Intended for Stents

Analytical Balances



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-110-0001	XA 52.5Y	52 g	0,01 mg	0,012 mg	ø90 + ø85 mm
WL-110-0004	XA 82/220.5Y	82/200 g	0.01/0.1 mg	0,012 mg	ø90 + ø85 mm
WL-110-0002	XA 110.5Y	110 g	0.01 mg	0,012 mg	ø90 + ø85 mm
WL-110-1000	XA 120 / 250 g	120/250 g	0.01/0.1 mg	0,005 mg	ø90 + ø85 mm
WL-110-0003	XA 210.5Y	210 g	0.01 mg	0,005 mg	ø90 + ø85 mm
WL-110-0006	XA 220.5Y	220 g	0.1 mg	0,07 mg	ø100 mm
WL-110-0007	XA 310.5Y	310 g	0.1 mg	0,05 mg	ø100 mm
WL-110-0008	XA 520.5Y	520 g	0.1 mg	0,07 mg	ø100 mm
WL-109-0011	MYA 31.5Y	31 g	1 µg	1.2 µg	ø26 mm

Precision Balances



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-224-0001	PM 10.5Y	10 kg	0,01 g	0,004 g	200×185 mm
WL-224-0002	PM 15.5Y	15 kg	0,01 g	0,004 g	200×185 mm
WL-224-0003	PM 20.5Y	20 kg	0,01 g	0,004 g	200×185 mm
WL-224-0004	PM 25.5Y	25 kg	0,1 g	0,04 g	350×260 mm
WL-224-0005	PM 35.5Y	35 kg	0,1 g	0,04 g	350×260 mm
WL-224-0006	PM 50.5Y	50 kg	0,1 g	0,04 g	350×260 mm
WL-224-0007	PM 60.5Y	60 kg	0,1 g	0,15 g	400×500 mm
WL-224-0009	PM 120.5Y	120 kg	0,2 g	0,2 g	400×500 mm

Automatic Device for Multichannel Pipette Calibration



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-101-0416	AP-12.5Y	52 g	0,01 mg	5 µg	12 and 1 channel case

Moisture Analyzer



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-307-0006	PMV 50.5Y	50 g	0,1 mg	-	ø90



PRODUCT CATALOGUE

ADVANCED WEIGHING TECHNOLOGIES





X2 Series Laboratory Balances



X2 Series Laboratory Balances

The X2 series is a synergy between solutions typical for advanced class balances and technology intended mainly for professional devices.

The combination of the above qualities provides you with a high-tech instrument offering the utmost accuracy and maximum comfort of operation for a price typical of lower class devices.

- 5" color capacitive touchscreen
- Display customization via widgets
- Multilingual, interactive menu
- Sensors for touch-free operation
- Conformity with GLP and GMP regulations
- Dynamically controlled sample weight (bar graph)
- Statistics, formulations, reports and printouts
- Unlimited communication possibilities
- Alibi Memory with record of measurements
- Complex databases
- Maximum comfort of operation
- Internal adjustment (excluding MA X2.A)

Home screen

- A** Set working mode and profile
- B** Logged-in user info
- C** Date, time, connection, battery state etc.
- D** Weighing result window
- E** Load bar graph
- F** Checkweighing bar graph (thresholds)
- G** Ambient conditions pictograms
- H** Configurable additional information field
- I** Quick access buttons (editing option)
- J** Proximity sensors (operation optimization)
- K** Setting menu for current operating mode
- L** Proximity sensors





AS X2 PLUS Analytical balances

Maximum capacity [Max]: up to 520 g
 Readability [d]: down to 0.01 mg
 Weighing pan dimensions: ø 90 mm, ø 100 mm, ø 85 mm (option)



PS X2 Precision balances

Maximum capacity [Max]: up to 10.1 kg
 Readability [d]: down to 1 mg
 Weighing pan dimensions: 128 x 128 mm, 195 x 195 mm



WLC X2 Precision balances

Maximum capacity [Max]: up to 21 kg
 Readability [d]: down to 1 mg
 Weighing pan dimensions: 128 x 128 mm, 195 x 195 mm, ø100 mm



MA X2.A, MA X2.IC.A Moisture analyzers

Maximum capacity [Max]: up to 210 g
 Readability [d]: down to 0.1 mg
 Weighing pan dimensions: ø 90 mm, h = 8 mm

The X2 Series as a Standard for Quality

Accuracy in any temperature

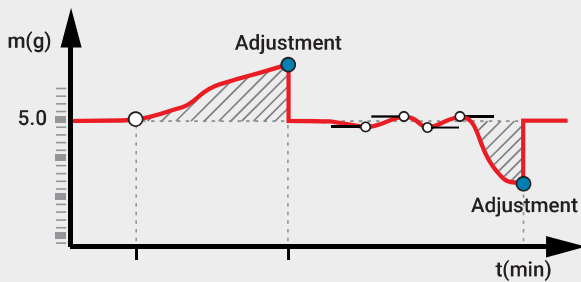
Accuracy is one of the most significant parameters influencing metrological characteristics of the weighing device. Production and control of X2 balances include monitoring and adjustment of accuracy in changeable temperatures. With minimized indication deviation, the X2 series ensures great measurement stability for a wide temperature range.

Accuracy in any conditions

The multi-shield mechanical design of X2 series balances offers effective protection against the influence of ambient conditions. With such design, the X2 series ensures fast and reliable measurement of both light and heavy loads, even when ambient conditions pose challenge.

Accuracy of each weighing indication

X2 series balances with an automatic adjustment system, using an internal adjustment weight, guarantee reliable measurement. Regardless of ambient conditions, the system provides effective elimination of any balance sensitivity deviations.



Quality begins with precision

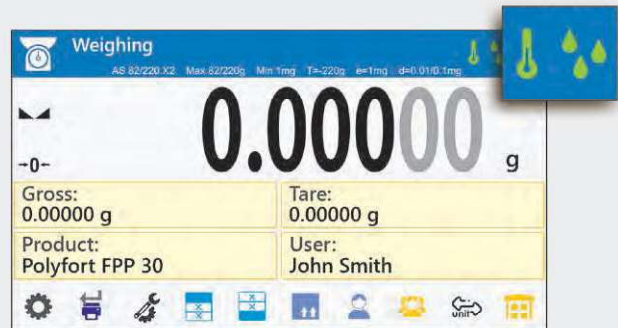
The optimization of X2 structural components provides measurement repeatability – the pivotal parameter for several analytical processes.

Speed, operation time optimization

The X2 series is a product of both measuring system development and progress when it comes to the methodology of measuring signal monitoring. X2 balances offer a wide range of settings. This provides the right sensitivity for measurements performed within a very short time.

Ambient conditions monitoring

Information on change in ambient conditions is essential in measuring devices of high resolution. For your comfort, X2 series balances have been equipped with system that signals the dynamics of temperature changes with a special symbol. This is especially useful while installing your device (acclimatization period), and when the



Databases - weighing process ergonomics

The structure of X2 series balances is based on structural databases. Freely programmed database content favours the creation of a dedicated information network, suiting precisely the nature of any performed process. Databases comprise the following components:

- 100 users
- 100 packaging types
- 100 warehouses
- 100 formulations
- 200 formulation reports
- 500 density reports
- 1 000 customers
- 5 000 products
- 50 000 weighings
- 500 000 Alibi records

Redefined Functionality

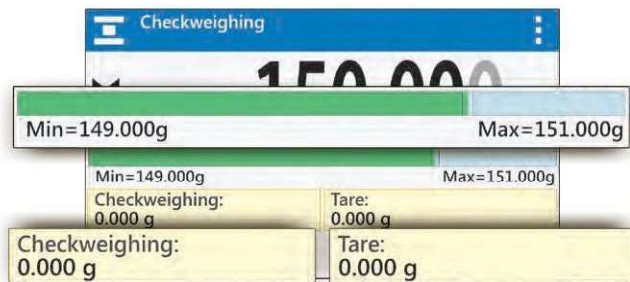
Button customization

Customized buttons facilitate the selection of weighing units, packaging, customers, and variable tare values adding to the fast and solid performance of the weighing process. User-designed key, tailored to the user's needs, can be assigned to a particular working mode, boosting your balance's functionality.



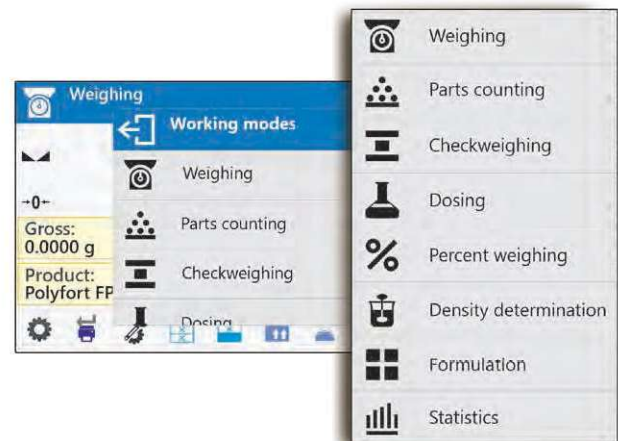
Labels selected freely by a user

X2 balances feature labels – pre-defined information fields providing various data, e.g. product name, user, date and time or bar graph. Labels names and values are not intended for modification but it is the user who decides which labels are to be displayed.



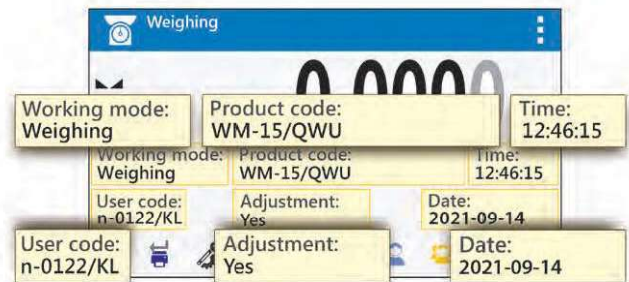
Clear information arrangement, even greater ease of operation

Priority for our X2 series balances is ease of operation and intuitive communication with the user. Clear information presented by symbols provides even more user-friendly operation.



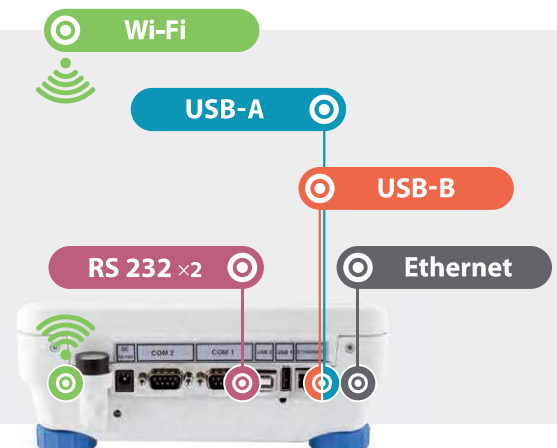
Configurable text fields

Text fields and labels feature similar characteristics, but text fields, unlike labels, can be freely created and configured by a user. It is possible to provide each text field with an individual name, function and value. In addition, you can decide on the particular text field size and location.



Communication interfaces

The X2 series balances have been equipped with various means of communication. They offer standard cable connections, realized via USB-A and USB-B or RS 232 ports, and wireless connection, realised via Wi-Fi technology. The latter is supported by all RADWAG-manufactured programs.



21 CFR Part 11

EU GMP Annex 11



- Password strength settings
- Maximum number of incorrect login attempts
- Auto-logout of inactive user
- Permissions for non-logged-in users
- Permissions for electronic signature
- Permissions for databases management
- Creating database backup
- Adding respectively secured users
- Adding and editing databases according to permissions granted
- Replacing paper documents with digital ones
- Highest level of report security
- Separate database with saved reports
- Signature information
- Validation of the electronically signed report
- Comments on the report
- Three validation levels
- Automatic recording of changes in databases
- Audit trail preview
- Export of audit trail data

**Do you work in the pharmaceutical industry? Do you need a digital signature?
We are offering the laboratory balance which as a standalone fully meets the requirements
of 21 CFR Part 11 / EU GMP Annex 11.**

Technical Specification

Analytical Balance



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-104-0183	AS 62.X2 PLUS	62 g	0.01 mg	0.01 mg	ø90 mm & ø85 mm (option)
WL-104-0190	AS 120.X2 PLUS	120 g	0.01 mg	0.01 mg	ø90 mm & ø85 mm (option)
WL-104-1053	AS 60/220.X2 PLUS	60 / 220 g	0.01 / 0.1 mg	0.01 mg	ø90 mm & ø85 mm (option)
WL-104-1050	AS 82/220.X2 PLUS	82 / 220 g	0.01 / 0.1 mg	0.01 mg	ø90 mm & ø85 mm (option)



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-104-0181	AS 160.X2 PLUS	160 g	0.1 mg	0.06 mg	ø100 mm
WL-104-0169	AS 220.X2 PLUS	220 g	0.1 mg	0.06 mg	ø100 mm
WL-104-0182	AS 310.X2 PLUS	310 g	0.1 mg	0.07 mg	ø100 mm
WL-104-0184	AS 520.X2 PLUS	520 g	0.1 mg	0.07 mg	ø100 mm

Precision Balance



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-218-0015	PS 210.X2	210 g	0.001 g	0.0005 g	128x128 mm
WL-218-0020	PS 360.X2	360 g	0.001 g	0.0005 g	128x128 mm
WL-218-0022	PS 600.X2	600 g	0.001 g	0.0005 g	128x128 mm
WL-218-0024	PS 750.X2	750 g	0.001 g	0.0005 g	128x128 mm
WL-218-0026	PS 1000.X2	1000 g	0.001 g	0.0005 g	128x128 mm
WL-218-1002	PS 200/2000.X2	200 / 2000 g	0.001 / 0.01 g	0.0005 / 0.005 g	128x128 mm
WL-218-0088	PS 3000.X2	3000 g	0.001 g	0.0005 g	128x128 mm



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-218-0127	PS 2100.X2.M	2100 g	0.01 g	0.005 g	195x195 mm
WL-218-0134	PS 3500.X2.M	3500 g	0.01 g	0.005 g	195x195 mm
WL-218-0103	PS 4500.X2.M	4500 g	0.01 g	0.005 g	195x195 mm
WL-218-0104	PS 6100.X2.M	6100 g	0.01 g	0.005 g	195x195 mm
WL-218-0102	PS 8100.X2.M	8100 g	0.01 g	0.005 g	195x195 mm
WL-218-0101	PS 10100.X2.M	10100 g	0.01 g	0.005 g	195x195 mm



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-222-0001	WLC 0.2.X2	0.2 kg	0.001 g	0.0014 g	ø100 mm



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-222-0002	WLC 0.6.X2	0.6 kg	0.01 g	0.008 g	128x128 mm



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-222-0003	WLC 2.X2	2 kg	0.01 g	0.015 g	195x195 mm
WL-222-0004	WLC 6.X2	6 kg	0.1 g	0.1 g	195x195 mm
WL-222-1001	WLC 1/10.X2	10 kg	0.01 / 0.1 g	0.015 / 0.08 g	195x195 mm
WL-222-0009	WLC 10.X2	10 kg	0.1 g	0.08 g	195x195 mm
WL-222-0011	WLC 20.X2	20 kg	0.1 g	0.1 g	195x195 mm
WL-222-0013	WLC 21.X2	21 kg	1 g	0.8 g	195x195 mm

Technical Specification for X2 Series Moisture Analyzers can be found in the Laboratory Balances section, under Moisture Analyzers.



PRODUCT CATALOGUE

ADVANCED WEIGHING TECHNOLOGIES





R Series Laboratory Balances



R Series Laboratory Balances

Innovative solutions of the R series, redefined operation and presentation of weighing results.

The R series balances represent the standard level of precision instruments. They have been equipped with LCD screen, providing even clearer result presentation. To maximize the comfort of operation, the display has been enriched with an extra text line supplying you with either information or prompts on the weighing process (product name, tare value, etc.).

A new feature of the R series balances is a set of symbols showing a current working mode, type of connection with a computer, battery state, weighing and service functions. Additionally, now there are even more weighing units at your disposal (g, mg, etc.). Weighing results are recorded in ALIBI memory.

The R series features a plastic housing and a stainless steel weighing pan, and enables under-pan weighing, wherein the load is suspended under the balance

Home screen

- A** Symbols
- B** Extra text line
- C** Direct access to databases
- D** Access to a particular working mode functions
- E** Working mode selection
- F** Direct start-up of balance adjustment procedure
- G** Transfer of display state to a peripheral device
- H** Navigation buttons





AS R2 PLUS Analytical balances

Maximum capacity [Max]: up to 520 g
 Readability [d]: down to 0,01 mg
 Weighing pan dimensions: ø 90 mm, ø 100 mm, ø 85 mm (option)



PS R1 Precision balances

Maximum capacity [Max]: up to 6100 g
 Readability [d]: down to 1 mg
 Weighing pan dimensions: 128 × 128 mm, 195 × 195 mm



PS R2 Precision balances

Maximum capacity [Max]: up to 10100 g
 Readability [d]: down to 1 mg
 Weighing pan dimensions: 128 × 128 mm, 195 × 195 mm



MA R Moisture analyzers

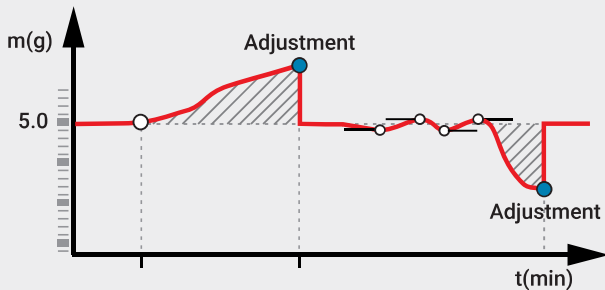
Maximum capacity [Max]: up to 210 g
 Readability [d]: down to 0.1 mg
 Weighing pan dimensions: ø 90 mm, h = 8 mm

Quality and Precision

Auto-Cal - automatic system of adjustment procedure

Auto-Cal system is a tool for control and correction. It provides accurate weighing regardless of temperature variation, the position of the balance or changing environmental conditions. This allows the R series balances to offer accuracy in all conditions.

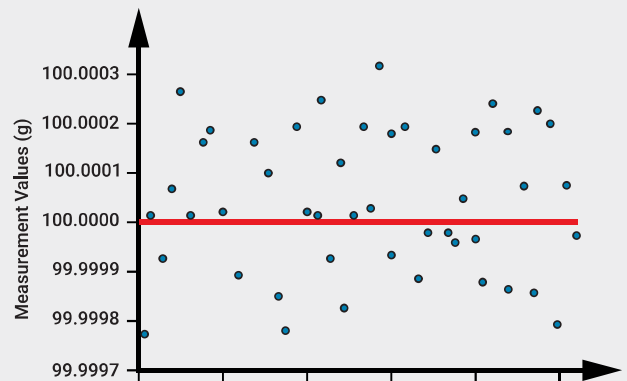
The built-in adjustment weight has been designed to maintain accurate indications. Discover that with our automatic or semiautomatic adjustment procedure, performed periodically, you may grow confident about your weighing results' accuracy. The adjustment system guarantees that accurate weighing results are obtained even for challenging working conditions. It is used for GLP, GMP control procedures.



Repeatability of indications

The monolithic system ensures even greater accuracy and repeatability of weighing due to consolidation of elements of the balance's mechanical design. Using such technology results in higher quality balances.

Owing to the monolithic systems, R series balances offer fast measurement and excellent repeatability. These up-to-date design solutions, being highly resistant to transport shocks, are characterized by good metrological parameters.



Operating temperature range

Now, owing to a wider working temperature range, you don't have to monitor and adjust the room temperature, affecting your balance stability, over and over again.

Communication interfaces

The R series balances have been equipped with various means of communication. They offer standard cable connections, realized via USB-A and USB-B or RS 232 ports, and wireless connection, realised via Wi-Fi technology. The latter is supported by all RADWAG-manufactured programs.



Databases ergonomics for your weighing process

You certainly will appreciate information system of R series balances. The system is based on 5 databases: users database (10 different operators), products database (1000 different products), weighments database (1000 different measurements), tares database (10 different packaging weights).

When operating the new R series balances you can analyze particular measurements in details, export or import any data and exchange.

Resistance to ambient conditions

Increased resistance to fluctuating ambient conditions such as breezes and changes in humidity provides more accurate measurements.

Functionality and Ergonomics

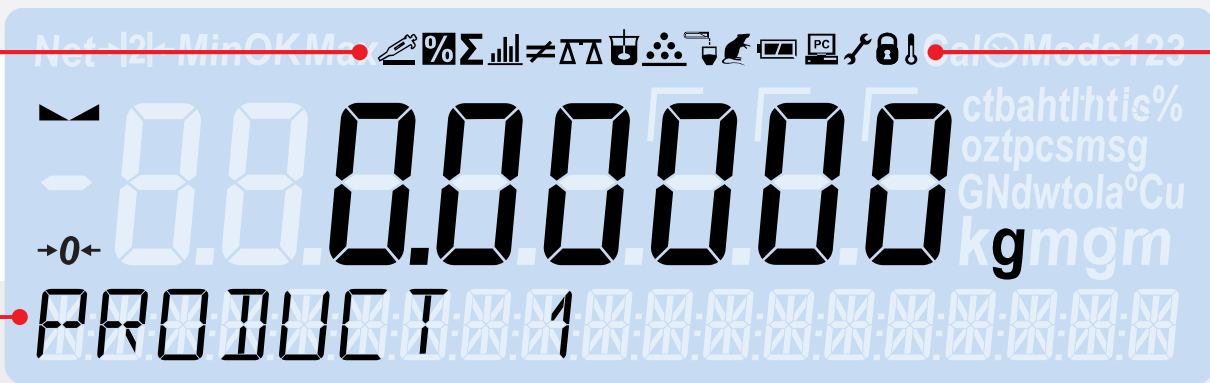
Symbols and units

The R series offers a priceless set of intuitive symbols signalling current working mode, computer connection type, battery status, function that is in operation and much more. The symbols add to readout clarity, they provide maximum comfort of operation and improve ergonomics. Another facility supporting the weighing process is a wider choice of units.

Ambient conditions monitoring

Stable ambient temperature is a key factor when it comes to the accuracy of balance indications. The R series balances feature an ergonomic diagnostic tool, namely, automatic monitoring of balance temperature. The dynamics of balance temperature variation is registered online. Shall the limit values be exceeded, a thermometer symbol is displayed on the balance screen. This calls for the necessity to stabilize the balance.

You may find ambient conditions monitoring especially useful during installation of the balance at its place of use. This solution may also turn out to be exceptionally valuable for observation of ambient temperature variation.

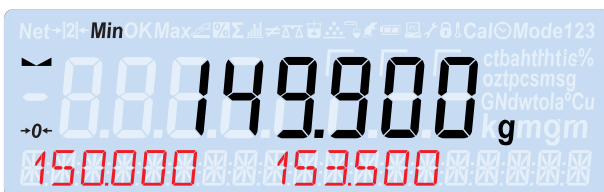


Extra text line

An extra text line provides you with either information or prompts on the weighing process, e.g. product name or tare value.

Bar Graph, visual representation of load capacity

The bar graph indicates the load capacity change in real time. It can be run for various working modes with threshold markers, e.g. parts counting, dosing, percent weighing, animal weighing, statistics, totaling, peak hold or checkweighing.



Minimum value Maximum value



Mass value lower than the value of minimum threshold



Minimum value Maximum value



Mass value contained within thresholds



Minimum value Maximum value



Mass value higher than the value of maximum threshold

Database Security

Data protection

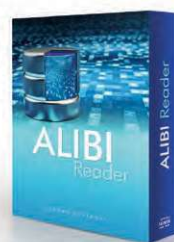
Access to the secured sensitive data is only possible when logged in. The access rights for each operator are set up by the Administrator.

Archiving and data exchange

Archive your data. You will do it by transfer of reports on performed processes and partial measurements to external devices via a USB interface. With the USB interface, you can control the working process, restore any data, and copy the balance settings.

ALIBI memory

ALIBI memory is a guarantee of data protection. It enables record of up to 100 000 weighings. This ensures security of stored data over long period of time.



ALIBI Reader PC software enables the user to preview all weighings recorded in balance memory. The software allows printout of selected data and creation of PDF and CSV (Excel) reports.

Reports and Printouts

Configurable printouts

In the new R series balances the weighing reports are divided into 3 configurable sections, each of which can be fully customized.

Working mode	Weighing
Date	18.01.2021
Time	11:36:36
Balance type	AS R2
Balance ID	2035
Product	PILL
Tare	0.5000 g
Gross weight	1.3020 g
Net weight	0.8020 g
User	Tom Smith
----- Calibration Report -----	
Calibration type	Internal
User	Tom Smith
Project	124/SGW/2021
Date	18.01.2021
Time	12:56:10
Balance ID	1035
Calibration difference	0.0000 g

Signature	-----

Measurement printouts sent to PC software

Measurements carried out by R series balance can be transferred directly to R-Lab and RAD KEY PC software.



RAD KEY PC Software is designed to acquire your balance data with the use of special HotKey, which is then entered into an active spreadsheet cell.



R-Lab software enables scale preview and generating both weighings and statistics graphs.

Sample report divided into three configurable sections: header, GLP printout and footer.

All R balances communicate with computer printers supporting PCL standard. Communication between the devices is established via USB or RS 232 interface.

Technical Specification

Analytical Balance



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-104-0179	AS 62.R2 PLUS	62 g	0.01 mg	0.012 mg	ø90 mm & ø85 mm (option)
WL-104-0175	AS 110.R2 PLUS	110 g	0.1 mg	0.06 mg	ø90 mm & ø85 mm (option)
WL-104-0191	AS 120.R2 PLUS	120 g	0.01 mg	0.012 mg	ø90 mm & ø85 mm (option)
WL-104-1052	AS 60/220.R2 PLUS	60 / 220 g	0.01 / 0.1 mg	0.012 mg	ø90 mm & ø85 mm (option)
WL-104-1051	AS 82/220.R2 PLUS	82 / 220 g	0.01 / 0.1 mg	0.012 mg	ø90 mm & ø85 mm (option)



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-104-0230	AS 120.R1 PLUS	120 g	0.1 mg	0.06 mg	ø100 mm
WL-104-0229	AS 220.R1 PLUS	220 g	0.1 mg	0.07 mg	ø100 mm
WL-104-0176	AS 160.R2 PLUS	160 g	0.1 mg	0.07 mg	ø100 mm
WL-104-0177	AS 220.R2 PLUS	220 g	0.1 mg	0.07 mg	ø100 mm
WL-104-0178	AS 310.R2 PLUS	310 g	0.1 mg	0.08 mg	ø100 mm
WL-104-0186	AS 520.R2 PLUS	520 g	0.1 mg	0.08 mg	ø100 mm

Precision Balance



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-213-0020	PS 360.R1	360 g	0.001 g	0.0005 g	128x128 mm
WL-213-0080	PS 600.R1	600 g	0.001 g	0.0005 g	128x128 mm
WL-213-0022	PS 750.R1	750 g	0.001 g	0.0005 g	128x128 mm
WL-213-0023	PS 1000.R1	1000 g	0.001 g	0.0005 g	128x128 mm
WL-213-1002	PS 200/2000.R1	200 / 2000 g	0.001 / 0.01 g	0.0005 / 0.005 g	128x128 mm



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-213-0091	PS 3500.R1.M	3500 g	0.01 g	0.005 g	195x195 mm
WL-213-0078	PS 4500.R1.M	4500 g	0.01 g	0.005 g	195x195 mm
WL-213-0085	PS 6100.R1.M	6100 g	0.01 g	0.005 g	195x195 mm



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-212-0018	PS 210.R2	210 g	0.001 g	0.0005 g	128x128 mm
WL-212-0019	PS 360.R2	360 g	0.001 g	0.0005 g	128x128 mm
WL-212-0071	PS 0.6.R2	600 g	0.01 g	0.005 g	195x195 mm
WL-212-0020	PS 600.R2	600 g	0.001 g	0.0005 g	128x128 mm
WL-212-0021	PS 750.R2	750 g	0.001 g	0.0005 g	128x128 mm
WL-212-0022	PS 1000.R2	1000 g	0.001 g	0.0005 g	128x128 mm
WL-212-1003	PS 200/2000.R2	200 / 2000 g	0.001 / 0.01 g	0.0005 / 0.005 g	128x128 mm



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-212-0170	PS 2100.R2.M	2100 g	0.01 g	0.005 g	195x195 mm
WL-212-0173	PS 3500.R2.M	3500 g	0.01 g	0.005 g	195x195 mm
WL-212-0134	PS 4500.R2.M	4500 g	0.01 g	0.005 g	195x195 mm
WL-212-0135	PS 6100.R2.M	6100 g	0.01 g	0.005 g	195x195 mm
WL-212-0132	PS 8100.R2.M	8100 g	0.01 g	0.005 g	195x195 mm
WL-212-0133	PS 10100.R2.M	10100 g	0.01 g	0.005 g	195x195 mm



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-221-0001	PS 210.R2.H	210 g	0.001 g	0.0005 g	ø100 mm
WL-221-0002	PS 360.R2.H	360 g	0.001 g	0.0005 g	ø100 mm
WL-221-0003	PS 600.R2.H	600 g	0.001 g	0.0005 g	ø100 mm
WL-221-0004	PS 750.R2.H	750 g	0.001 g	0.0005 g	ø100 mm
WL-221-0005	PS 1000.R2.H	1000 g	0.001 g	0.0005 g	ø100 mm



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-221-1001	PS 200/2000.R2.H	200 / 2000 g	0.001 / 0.01 g	0.0005 / 0.005 g	ø100 mm
WL-221-0023	PS 2100.R2.M.H	2100 g	0.01 g	0.005 g	195x195 mm
WL-221-0024	PS 3500.R2.M.H	3500 g	0.01 g	0.005 g	195x195 mm
WL-221-0025	PS 4500.R2.M.H	4500 g	0.01 g	0.005 g	195x195 mm
WL-221-0026	PS 6100.R2.M.H	6000 g	0.01 g	0.005 g	195x195 mm

Technical Specification for R Series Moisture Analyzers can be found in the Laboratory Balances section, under Moisture Analyzers.



PRODUCT CATALOGUE

ADVANCED WEIGHING TECHNOLOGIES





PM Precision Balances

[d] down to 0.01 g
[Max] up to 120 kg

Minimum Eccentricity Error Over the Entire Range

PM balances can be used to determine the mass of irregularly shaped components with a centre of gravity that is significantly shifted from the weighing pan axis.

Fast and Stable Measurement

It only takes a second for the balance to display the final measurement result.



Parameter Stability Over Time and After Transport

The mechanical design is resistant and robust, allowing you to maintain the correct metrological parameters after transport and despite long and intensive use.



Weighing Heavy Loads with High Accuracy

On the large weighing pan of a PM balance, you can weigh a load of 120 kg with a readability of 0.2 g and second-to-none repeatability.

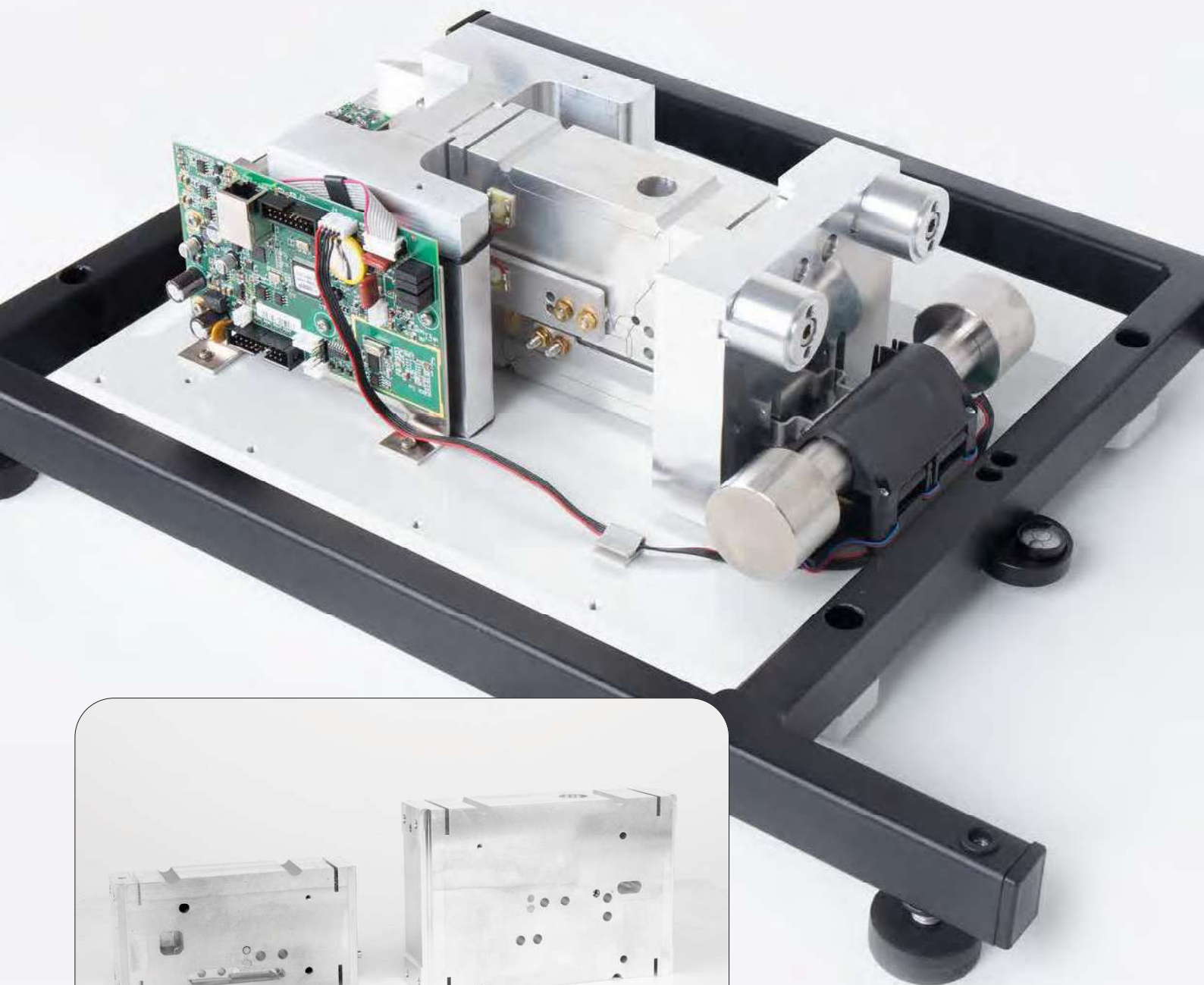
Platforms of IP 54


Weighing Pan Dimensions Adapted to the Accuracy of the Balance

Weigh with the highest readability of 0.01 g on the 200 x 185 mm weighing pan and with a readability of 0.2 g on the 500 x 400 mm weighing pan.

New, Improved MONOBLOCK®

- Readability of 0.01 g at 10 kg maximum capacity and 0.2 g at 120 kg maximum capacity,
- Repeatability down to 0.01 g,
- Greater resistance to ambient conditions change.



The new, taller and larger  MONOBLOCK® enables the best repeatability and speed in its class of weighing platforms.

New PM Precision Balances

PM 5Y Precision Balances

5Y terminal:

- 10-inch display
- Digital Weighing Auditor,
- multi-step user verification,
- Ambient Light alerts,
- Hotspot,
- RFID,
- Live Note voice and text notes,
- voice commands for the balance,
- handy measurement history within the Handy Library,
- widgets.



PM C32 Precision Balances

PUE C32 terminal:

- 5-inch, colour, graphic display,
- membrane keypad,
- IP 43,
- freely programmable function buttons,
- battery as an optional power source.
- intuitive operation.



Technical Specification

PM 5Y



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-224-0001	PM 10.5Y	10 kg	0.01 g	0.004 g	200×185 mm
WL-224-0002	PM 15.5Y	15 kg	0.01 g	0.004 g	200×185 mm
WL-224-0003	PM 20.5Y	20 kg	0.01 g	0.004 g	200×185 mm



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-224-0004	PM 25.5Y	25 kg	0.1 g	0.04 g	350×260 mm
WL-224-0005	PM 35.5Y	35 kg	0.1 g	0.04 g	350×260 mm
WL-224-0006	PM 50.5Y	50 kg	0.1 g	0.04 g	350×260 mm



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-224-0007	PM 60.5Y	60 kg	0.1 g	0.041 g	400×500 mm
WL-224-0009	PM 120.5Y	120 kg	0.2 g	0.06 g	400×500 mm

PM C32



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-223-0005	PM 10.C32	10 kg	0.01 g	0.004 g	200×185 mm
WL-223-0006	PM 15.C32	15 kg	0.01 g	0.004 g	200×185 mm



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-223-0025	PM 25.C32	25 kg	0.1 g	0.04 g	350×260 mm
WL-223-0007	PM 35.C32	35 kg	0.1 g	0.04 g	350×260 mm
WL-223-0008	PM 50.C32	50 kg	0.1 g	0.04 g	350×260 mm



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-223-0081	PM 60.C32	60 kg	0.1 g	0.4 g	400×500 mm
WL-223-0009	PM 60.05.C32	60 kg	0.5 g	0.2 g	400×500 mm
WL-223-0012	PM 60.1.C32	60 kg	1 g	0.4 g	400×500 mm
WL-223-0082	PM 120.C32	120 kg	0.2 g	0.4 g	400×500 mm



PRODUCT CATALOGUE

ADVANCED WEIGHING TECHNOLOGIES





WLC and WTC Precision Balance

[d] down to 0.001 g
[Max] up to 120 kg

WLC, WLC C/2 and WTC Precision Balance

The **internal battery** will allow you to work on the balance despite the lack of access to power.

Communication interfaces: RS 232, USB-A and USB-B will allow you to work with a computer, printer and flash drive.

Thanks to **automatic internal adjustment**, the balance will calibrate itself as soon as you press the button and automatically every 12 hours and when the temperature changes by more than 3°C.*

* Refers to the WLC C/2 balances.

The **Alibi Memory** will allow you to record all weighings on the balance with the software.

Thanks to the **real-time clock** – in the standard printout you can provide information about when the measurement took place.



WLC F1/R



WLC F1/K

Technical Specification

WLC C/2 Precision Balance (Adjustment: internal)



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-217-0006	WLC 0.6/A1/C/2	0.6 kg	0.01 g	0.015 g	128x128 mm



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-217-0007	WLC 1/A2/C/2	1 kg	0.01 g	0.015 g	195x195 mm
WL-217-0015	WLC 2/A2/C/2	2 kg	0.01 g	0.015 g	195x195 mm
WL-217-0014	WLC 6/A2/C/2	6 kg	0.1 g	0.15 g	195x195 mm

WLC Precision Balance (Adjustment: external)



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-206-0041	WLC 1/A2	1 kg	0.01 g	0.01 g	195x195 mm
WL-206-0039	WLC 2/A2	2 kg	0.01 g	0.01 g	195x195 mm
WL-206-0003	WLC 6/A2	6 kg	0.1 g	0.1 g	195x195 mm
WL-206-0004	WLC 10/A2	10 kg	0.1 g	0.1 g	195x195 mm
WL-206-0022	WLC 20/A2	20 kg	0.1 g	0.1 g	195x195 mm



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-206-0074	WLC 6/F1/R	6 kg	0.1 g	0.1 g	300x300 mm
WL-206-0073	WLC 6/F1/K	6 kg	0.1 g	0.1 g	300x300 mm
WL-206-0076	WLC 12/F1/R	12 kg	0.2 g	0.2 g	300x300 mm
WL-206-0075	WLC 12/F1/K	12 kg	0.2 g	0.2 g	300x300 mm
WL-206-0078	WLC 30/F1/R	30 kg	0.5 g	0.5 g	300x300 mm
WL-206-0077	WLC 30/F1/K	30 kg	0.5 g	0.5 g	300x300 mm



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-206-0063	WLC 60/C2/R	60 kg	1 g	1 g	400x500 mm
WL-206-0015	WLC 60/C2/K	60 kg	1 g	1 g	400x500 mm
WL-206-0036	WLC 120/C2/R	120 kg	2 g	2 g	400x500 mm
WL-206-0021	WLC 120/C2/K	120 kg	2 g	2 g	400x500 mm

WTC Precision Balance (Adjustment: external)



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-210-0004	WTC 200	200 g	0.001 g	0.002 g	ø100 mm



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-210-0003	WTC 600	600 g	0.01 g	0.01 g	128x128 mm
WL-210-0001	WTC 2000	2000 g	0.01 g	0.01 g	128x128 mm
WL-210-0007	WTC 3000	3100 g	0.1 g	0.1 g	128x128 mm



PRODUCT CATALOGUE

ADVANCED WEIGHING TECHNOLOGIES





Moisture Analyzers



PMV 50.5Y

Microwave Moisture Analyzer

The best possible functionality and professionalism for a drying process and moisture content analysis!

- 10" touch screen display
- Interactive menu
- Wi-Fi
- Control and adjustment system for a drying chamber (GMP)
- Compliance with regulations (GLP System)
- Databases (products, weighings, customers, drying programs, drying processes reports, control Wand statistics for drying processes reports)
- Dynamic control of sample weight (bar graph)
- Drying parameters optimisation (test)
- Drying process visualisation (%M, %R, %D, graph)
- Statistics (trend of sample humidity over time)
- Printouts, reports (standard PCL)
- Multilingual menu
- Interfaces: USB-A ×2, USB-C, HDMI, Ethernet, Wi-Fi®, Hotspot
- Wide spectrum of applications (industry, laboratories, universities, research and development institutes)

Home screen

- A** Information on a selected working mode and on a current drying mode
- B** Information on a logged in user
- C** Area for date, time, information on connection, battery level, etc.
- D** Pictogram informing on levelling status
- E** Weight bar graph
- F** Bar graph for sample weight control
- G** Configurable area for supplementary information
- H** Drying mode / temperature selection
- I** Auto switch-off option
- J** Printout interval
- K** Temperature and elapsed analysis time
- L** Area defining the drying chamber (Opened / Closed / Drying Process)
- M** Quick launch bar providing access to functions
- N** Digital Weighing Auditor
- O** Touch-free operation (IR sensors)



- Maximum efficiency and productivity.
- Arranging work through databases.
- History of moisture content variations for a given sample.
- Easy data exchange between devices.
- Data protection and access control.
- Fully configurable screen menu.



Moisture Analyzers of X2 Series

Professional design assuring the highest quality of drying process and maximum comfort of operation.

- 5" colour touch screen
- Free customization of menu elements
- Wi-Fi
- Control and adjustment system for a drying chamber (GMP)
- Compliance with regulations (GLP System)
- Databases (products, customers, users, packaging, drying programs, drying reports)
- Dynamic control of sample weight (bar graph)
- Drying parameters optimisation (test)
- Drying process visualisation
- Statistics (trend of sample humidity over time)
- Printouts, reports (standard PCL)
- Multilingual menu
- Wide spectrum of applications (industry, laboratories, universities, research and development institutes)

Home screen

- A** Displaying home screen
- B** Exit (return to the previous screen)
- C** Tare button
- D** Display shutdown
- E** Enter/Print button
- F** Zero button
- G** Status bar (working mode, moisture analyzer metrological data)
- H** Area with drying/weighing result
- I** Information panel
- J** Quick access key triggering functions and settings
- K** Current working mode settings
- L** Proximity sensors
- M** Drying mode / temperature selection
- N** Drying process automatic shutdown
- O** Printout interval
- P** Temperature and analysis time
- R** Area defining the drying chamber (Opened / Closed / Drying Process)





- Clear information arrangement.
- Uncomplicated and intuitive operation as a result of free customization of the menu.
- Automatically opened and closed drying chamber.



Moisture Analyzers of R Series

Advanced technology for a drying process
and moisture content analysis!

- LCD display
- Cascading menu
- Wi-Fi
- Control and adjustment system for a drying chamber (GMP)
- Compliance with regulations (GLP System)
- Databases (users, products, programs, tares)
- Drying parameters optimisation (Test)
- Drying process visualisation (%M, %R, %D, graph)
- Printouts, reports (standard PCL)
- Multilingual menu
- Wide spectrum of applications (industry, laboratories, universities, research and development institutes)

Home screen

- A** Elapsed drying time
- B** Drying temperature
- C** Area defining the drying chamber (Opened / Closed / Drying Process)
- D** Moisture content result for a given sample
- E** Automatic shutdown
- F** Drying mode
- G** Measuring unit %M, %D, %R
- H** Information area
- I** Direct access to reports on performed drying processes
- J** Direct access to databases
- K** Switching drying mode and changing drying temperature
- L** Selecting sample out of the database



- Compact size and design.
- Easy and intuitive operation.
- Direct access to reports and product databases.
- Ease of data exchange between devices.
- Versatility of applications in various workstations.

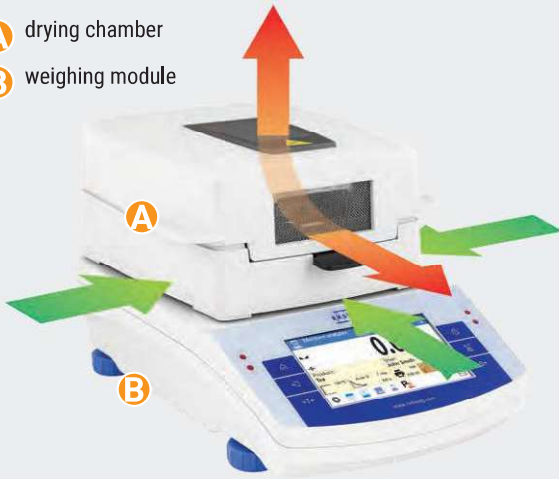


Design and Construction

Measurements Precision in all Thermal Conditions

Moisture analyzer comprises precision balance and a drying chamber joined together. High resolution weighing module is designed to provide quick and precise measurement of a particular sample weight, independently from its thermal condition. Module stabilisation is obtained using special algorithm controlling halogen lamp operation.

- A** drying chamber
- B** weighing module



Drying Temperature Stability

Drying temperature stabilization is ensured by a heating element (IR emitter) coupled with a temperature sensor. Proper operation of this system is possible owing to adjustment performed in the course of a manufacturing process. The emitter, as a heat source, is effective when carrying out analysis of various materials: powders, liquids, paste, semi-liquid substances, solid bodies etc.



Graduating drying temperature means comparing and correcting indications of moisture analyzer thermometer. The correction is referred to indications of control thermometer, three measuring points are used for comparison. During the test, the control thermometer replaces a weighing pan.



IR emitter is one of the moisture analyzer heat sources, it operates in a feedback loop. This ensures thermal conditions stability for the time of analysis. **RADWAG-designed method for dynamic control of drying chamber temperature is one of the factors allowing to obtain short time for analysis process and repeatability within drying series.**

A specific algorithm controlling heating elements operation is needed in order to maintain a particular temperature throughout the drying process. **RADWAG has designed such an algorithm thus ensuring quickness and accuracy of operation independently from analysis duration.**

Heat Source Types and Intended Use

IRS Halogen

Intended for:
powder, semi-liquids, liquids.

IRM Emitter

Intended for:
most samples of liquid or semi-liquid consistence, powders, crushed solids.

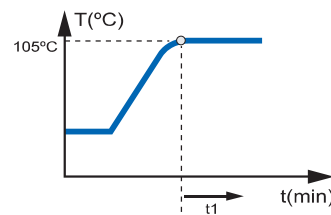
IRL Emitter

Intended for:
bodies of thick consistence and for solids.

Microwave Emitter

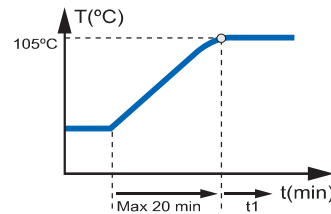
Intended for:
drying of samples containing significant amount of moisture (up to 100%)

Methods for Obtaining the Preset Temperature



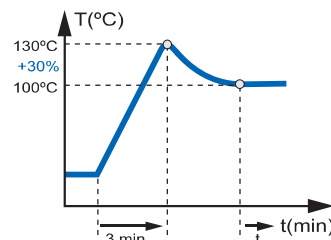
Standard Mode

Intended use:
Solid, powder and semi-liquid samples. Temperature grows until the determined value is reached. **99% of applications.**



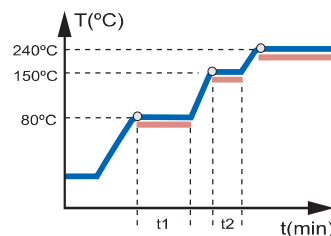
Mild Mode

Intended use:
Mild mode shall be applied when too fast temperature growth eliminates components other than water. **Possibility of adjusting the speed of temperature growth.**



Quick Mode

Intended use:
Samples of high humidity. In case of overadjustment the temperature drops until the determined value is reached. **Temperature drop caused by heat coming from evaporation is eliminated.**



Step Mode

Intended use:
Drying minerals. Chemically bound water and surface bound water is eliminated. **Sample analysis for various temperature values is possible.**

Drying Methods and Processes

Samples Types and Preparation

Size of the sample and its preparation shall provide the following: sample structure homogeneity, short time of drying, good repeatability of measurement within a measurement series and drying process result comparable to a reference result (standardised method).



Solid bodies
- light sample,
- requires grinding



Samples of low humidity
- heavy sample
(10 - 15 g)



Liquids
- increasing active surface of evaporation is recommended

Sample Structure Transformation

Unfavorable physical processes, affecting the sample structure, may occur during the drying process. These are caused by dispersion of indications and mistakes made when undertaking assessment of actual moisture content for a particular sample.



Crust Formation
It is a process where an impermeable layer is formed on a sample surface. This makes removal of humidity from the sample impossible. As a result the indication being an outcome of an analysis is lower than the sample reference value.



Sample Burning
Such a process is a consequence of too high drying temperature. It results in a change of sample colour. When sample burning occurs then the sample humidity value is greater than its reference value.



Heat Absorption
Dark in colour samples absorb more heat than the light ones. This accounts for application of lower drying temperatures while drying light in colour samples. Tests need to be carried out in order to select the right temperature value.

Automatic Control of Sample Weight

Obtaining optimal results for a drying process depends on samples quantity and weight. Too heavy sample lengthens duration of the drying process. Too light sample works against repeatability of the results. This proves that control of the sample weight is inevitable.



- A WEIGHT CONTROL** (checkweighing thresholds)
- B GRAPH** (drying process curve, registered for dynamic state)
- C DRYING PROGRAMS** (drying mode type, temperature, auto switch-off)
- D SAMPLES** (name, code, end mass, tolerance, etc.)
- E SAMPLE DESCRIPTION** (information on how to prepare a sample for a drying process)

Initial mass	2.7548 g
0:00:10	0.1503% M
0:00:20	0.6258% M
----- Auto switch off -----	
0:08:08	Auto 1
Result	11.4789% M
----- Auto switch off -----	
0:11:05	Auto 2
Result	11.9058% M
----- Auto switch off -----	
0:13:55	Auto 3
Result	12.0502% M
----- Auto switch off -----	
0:15:20	Auto 4
Result	12.0858% M

Demonstrative printout of TEST function.

Methods of Analysis Completion

TEST function analyses weight variation for a particular sample, occurring during the drying process. There are 5 different options for automatic shutdown. The user shall select option allowing him to end the drying process in a way ensuring that the obtained humidity value is as close as possible to a reference value. Among other automatic shutdown possibilities there are time-defined, manual and user-defined options, the latest one being the best adjusted to a particular sample characteristics.

Obtained humidity value depends on start mass of a particular sample – an optimal mass value shall be selected prior running the tests.

Respective method for a particular sample drying, shall be selected based on tests optimizing the sample size, drying temperature and method of analysis end procedure.



Reports and Statistics

Report on Drying Process

RADWAG moisture analyzers allow the user to make self-configured reports. Analysis, summaries, etc. may be printed by means of any office printer (PCL).

The report comprises three sections: the header (A), the data area (B) and the footer (C). Each section can be freely configured by a user.

Drying Process Statistics

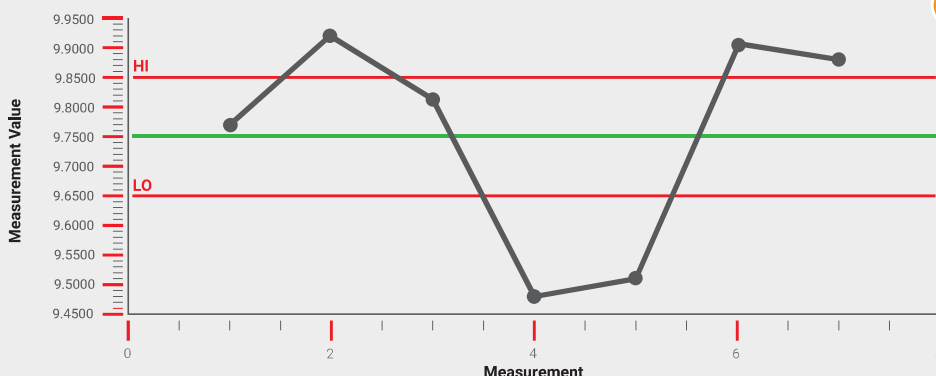
Moisture content analyses performed for the same sample are used to determine the sample moisture content variation within a specified time interval (Trend).

Example of a simple drying report, generated by MA R moisture analyzer.

Drying	
Date	05.01.2021
Time	6:32:18
Operator	Admin
Product	Prod-01
Program	MAR-1
Drying profile	Standard
Drying profile parameters	90 °C
Finish mode	Manual
Start mass	0.674 g

0:00:30	
0:01:00	
0:01:30	
0:02:00	
0:02:30	
0:03:00	

Status	Completed
Drying time	0:03:00
End mass	0.499 g
Result	25.964% M



Drying	
Start date	2021.01.28
Start time	11:34:44
Operator	Admin
Product	Corn
Drying mode	Corn-PRG01
Drying mode	Standard
Drying mode parameters	100 °C
Auto switch-off mode	Auto
Finish mode parameters	1 mg/60 s
Printout interval	0:00:30
Start mass	0.590 g

Date and time	2021.01.28 11:35:14
Drying time	0:00:30
Product	Corn
Current result	5.085% M
0:00:30	5.085% M
Humidity content	5.085% M
Dry mass content	94.915% D
Humid / Dry	5.357% R
Tare	0.007 g
Gross	0.567 g
Set temperature	100 °C
Current temperature	99 °C

Date and time	2021.01.28 11:35:44
Drying time	0:01:00
Current result	7.795% M

Date and time	2021.01.28 11:39:14
Drying time	0:04:30
Current result	14.237% M

Status	Completed
End date	2021.01.28
End time	11:39:22
Drying time	0:04:38
Operator	Admin
Product	Corn
End mass	0.506 g
Humidity content	14.237% M

Example of a complex drying report, generated by PMV 50.5Y moisture analyzer.

Databases Managing and Editing

Databases Drying Process Ergonomics

Drying parameters such as temperature and automatic shutdown are optimally selected for every single sample. Trying to remember the parameters for just a few samples requires considerable effort. It is more convenient to record the parameters in a database than attempting to learn them by heart.

Product Database Contains any Data Relating to a Sample:

- name and description,
- EAN code: searching a sample in a database by means of a scanner,
- target value (%): value used for automatic control of sample weight (bar graph) and for determining moisture content variation over time (trend),
- Min, Max: value used for automatic control of sample weight (bar graph),
- tolerance: value used for determining moisture content variation over time (trend),
- drying program.

Drying Programs Database Contains any Data Relating to a Drying Process:

- name, code,
- drying mode, drying temperature,
- automatic shutdown (auto / time-defined / user-defined),
- start mass control (none / optional / essential),
- equipment intended for a sample (methodology),
- instruction on sample preparation for a drying process (methodology),
- required sample size (methodology).

Database Editor

Database Editor PC software is designed to support users dealing with a vast number of samples. Clear structure of the program ensures quickness when it comes to specifying drying parameters and other information relating to a sample. Data is transferred from the software to a moisture analyzer by means of Ethernet () or RS 232 (, R).

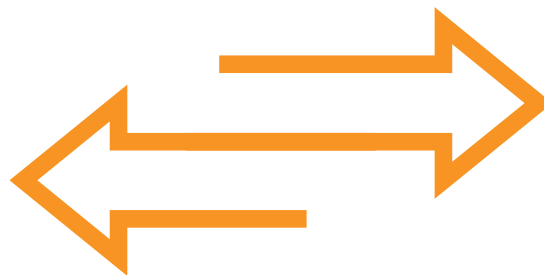
Users	Code	Name	Desc
	12	Mustard	Musta
	13	Powdered Soya Drink	Powd
	14	Pistachio Nut	Pistac
	15	Walnut	Waln
	16	Wheat Bran	Whea
	17	PA 6	PA 6
	18	Fodder	Fodd
	19	Soya Pate With Mushrooms	Soya
	20	PC (polycarbonate)	PC (p
	21	Pellet	Pellet
	22	Gingerbread	Ginge
	23	Corn Flakes	Corn
	24	Washing-up Detergent	Wash

Available databases: Products, Weighing Records, Customers, Drying Programs, Drying Process Records, Ambient Conditions, Packaging, Warehouses, Printouts, Universal Variables.

The screenshot shows a software window titled 'Walnut' with the following fields:

- Name: Walnut
- Description: Walnut
- Code: 3
- Code EAN: 9854327
- Target value: 4.23
- Unit: %M
- Tare: 0
- Max: 4.5
- Min: (dropdown menu open showing: Powdered Soya Drink, Pistachio Nut, Walnut, Wheat Bran, Candied Papaya, Granulated Fodder, Soya Pate With Mushrooms)
- Tolerance: (dropdown menu open showing: Powdered Soya Drink, Pistachio Nut, Walnut, Wheat Bran, Candied Papaya, Granulated Fodder, Soya Pate With Mushrooms)
- Density: (dropdown menu open showing: Powdered Soya Drink, Pistachio Nut, Walnut, Wheat Bran, Candied Papaya, Granulated Fodder, Soya Pate With Mushrooms)
- Price: (dropdown menu open showing: Powdered Soya Drink, Pistachio Nut, Walnut, Wheat Bran, Candied Papaya, Granulated Fodder, Soya Pate With Mushrooms)
- Date: (dropdown menu open showing: Powdered Soya Drink, Pistachio Nut, Walnut, Wheat Bran, Candied Papaya, Granulated Fodder, Soya Pate With Mushrooms)
- Shelf life-time: (input field)
- VAT: (input field)
- Printout: (checkbox checked)

Detailed information concerning the product.



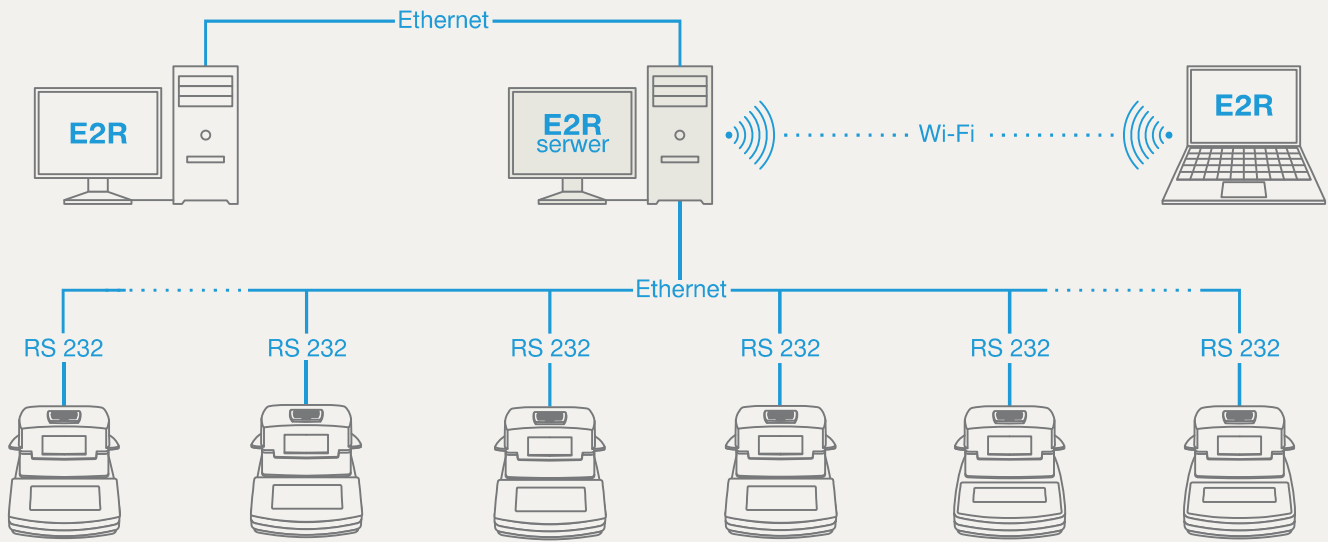
Export / import of databases moisture analyzers

E2R Results Analysis

Databases Drying Processes Ergonomics

Production processes for which moisture content of a particular sample is a crucial parameter, require quick reaction. This may be carried out using so called weighing networks comprising PMV 50 PLUS, MA X2 and MA R moisture analyzers. Each drying process is monitored on-line regardless of workstations location.

E2R Moisture Analyzer PC software is designed to record measurements performed by means of RADWAG moisture analyzers cooperating in a network, using RS 232 and Ethernet interfaces for connection. the software enables monitoring and reporting of collected measurements.



Software functions: on-line monitoring of moisture analyzer operation, possibility of configuring reports and graphs, analysis of data collected from many drying workstations, data protection.

PC Software

RADWAG PC software supports moisture analyzers expanding their functionality.

R-Lab

Scales preview, weighings graphs and statistics graphs.

Database Editor

Readout, databases editing and record of computer stored databases on balance.

Rad Key

Readout of balance data by means of defined Hot Key.

E2R Moisture Analyzers

Record of weighments carried out by moisture analyzers cooperating in a network.

Additional Equipment

- Anti-vibration weighing tables,
- Disposable weighing pans,
- Thermal and dot matrix printers,
- Barcode scanners,
- Control thermometer,
- Water vapor permeability set.

Complete offer is to be found on www.radwag.com website.



E2R Moisture Analyzer is

a module of integrated system for managing E2R weighing processes. E2R System comprises various programs ensuring continuous control of balances and their databases together with both, complete managing of the manufacturing process and the process optimisation.

Intended Use and Applications

Area of Use

Moisture content analysis and dry mass measurement of a particular product are both crucial for various branches of industry and science. Vast area of use and diversity of analyzed samples structure require individual approach to different substances.



Dairy Industry

Samples: cheese, buttermilk, yoghurt, powdered milk, etc. Samples are dried directly on a weighing pan or by means of glass fiber filters or silica sand (increasing surface of evaporation).



Fruit and Vegetable Industry

Samples: dried vegetables, fruits and mushroom, nuts etc. Samples shall be cut into smaller pieces (the analyzed samples cannot be too thick).



Food Industry

Samples: sugar, flour, pasta, spices, gelatin, etc. Thin layer of semi-liquid samples shall be distributed on a weighing pan (silica sand or glass fiber filters may be used). Other kinds of samples shall be crushed.



Chemical Industry

Samples: emulsion, gel and lotions used for cleaning, paints, film, graphite, etc. Thin layer of semi-liquid samples shall be distributed on a weighing pan (Silica sand or glass fiber filters may be used). Other kinds of samples shall be crushed.



Agricultural Industry

Samples: grain, seeds, hay, biomass, etc. Grain needs to be crushed prior drying.

Technical Specification

Microwave Moisture Analyzer



Product Code	Model	Max. capacity	Readability	Heating module
WL-307-0006	PMV 50.5Y	50 g	0,1 mg	microwave radiation emitter

X2 Series



Product Code	Model	Max. capacity	Readability	Heating module
WL-306-0032	MA 50.X2.A.WH	50 g	1 mg	halogen
WL-306-0043	MA 50.X2.IC.A.WH	50 g	1 mg	halogen
WL-306-0035	MA 50/1.X2.A.WH	50 g	0,1 mg	halogen
WL-306-0047	MA 50/1.X2.IC.A.WH	50 g	0,1 mg	halogen
WL-306-0021	MA 50.X2.A	50 g	1 mg	IR emitter
WL-306-0041	MA 50.X2.IC.A	50 g	1 mg	IR emitter
WL-306-0026	MA 50/1.X2.A	50 g	0,1 mg	IR emitter
WL-306-0045	MA 50/1.X2.IC.A	50 g	0,1 mg	IR emitter
WL-306-0063	MA 50.X2.A.NS	50 g	1 mg	metal heater
WL-306-0074	MA 50.X2.IC.A.NS	50 g	1 mg	metal heater
WL-306-0075	MA 50/1.X2.A.NS	50 g	0,1 mg	metal heater
WL-306-0076	MA 50/1.X2.IC.A.NS	50 g	0,1 mg	metal heater
WL-306-0034	MA 110.X2.A.WH	110 g	1 mg	halogen
WL-306-0051	MA 110.X2.IC.A.WH	110 g	1 mg	halogen
WL-306-0027	MA 110.X2.A	110 g	1 mg	IR emitter
WL-306-0049	MA 110.X2.IC.A	110 g	1 mg	IR emitter
WL-306-0080	MA 110.X2.A.NS	110 g	1 mg	metal heater
WL-306-0081	MA 110.X2.IC.A.NS	110 g	1 mg	metal heater
WL-306-0078	MA 200/1.X2.A.WH	200 g	0,1 mg	halogen
WL-306-0065	MA 200/1.X2.IC.A.WH	200 g	0,1 mg	halogen
WL-306-0061	MA 200/1.X2.A	200 g	0,1 mg	IR emitter
WL-306-0062	MA 200/1.X2.IC.A	200 g	0,1 mg	IR emitter
WL-306-0077	MA 200/1.X2.A.NS	200 g	0,1 mg	metal heater
WL-306-0079	MA 200/1.X2.IC.A.NS	200 g	0,1 mg	metal heater
WL-306-0033	MA 210.X2.A.WH	210 g	1 mg	halogen
WL-306-0055	MA 210.X2.IC.A.WH	210 g	1 mg	halogen
WL-306-0028	MA 210.X2.A	210 g	1 mg	IR emitter
WL-306-0053	MA 210.X2.IC.A	210 g	1 mg	IR emitter
WL-306-0082	MA 210.X2.A.NS	210 g	1 mg	metal heater
WL-306-0083	MA 210.X2.IC.A.NS	210 g	1 mg	metal heater

R Series



Product Code	Model	Max. capacity	Readability	Heating module
WL-305-0005	MA 50.R.WH	50 g	1 mg	halogen
WL-305-0006	MA 50/1.R.WH	50 g	0,1 mg	halogen
WL-305-0001	MA 50.R	50 g	1 mg	IR emitter
WL-305-0002	MA 50/1.R	50 g	0,1 mg	IR emitter
WL-305-0014	MA 50.R.NS	50 g	1 mg	metal heater
WL-305-0039	MA 50/1.R.NS	50 g	0,1 mg	metal heater
WL-305-0007	MA 110.R.WH	110 g	1 mg	halogen
WL-305-0004	MA 110.R	110 g	1 mg	IR emitter
WL-305-0024	MA 110.R.NS	110 g	1 mg	metal heater
WL-305-0008	MA 210.R.WH	210 g	1 mg	halogen
WL-305-0003	MA 210.R	210 g	1 mg	IR emitter
WL-305-0009	MA 210.R.NS	210 g	1 mg	metal heater
WL-305-0009	MA 210.R.NS	210 g	1 mg	metal heater



PRODUCT CATALOGUE

ADVANCED WEIGHING TECHNOLOGIES





MICRO-KIT

www.radwag.com

MICRO-KIT

Set of holders for microscale glassware

Special holders available in RADWAG balances enable weighing of a wide range of microscale glassware. They have been designed to increase ergonomics and minimize the risk of contamination during sample application.

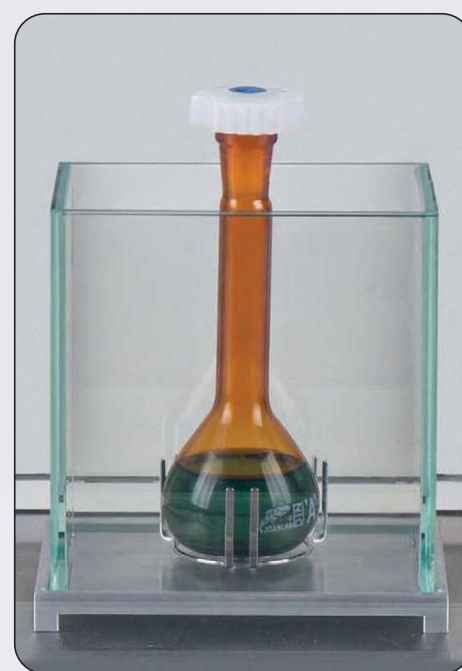


The holders have the ability to tilt the microscale glassware, allowing it to be placed at any angle, depending on the application. The set includes dedicated draft shields that stabilize the measurement conditions in the weighing chamber.



Examples of Application

of the microscale glassware holders



The designers did not forget about the special stand, which allows for easy storage of unused holders.





PRODUCT CATALOGUE

ADVANCED WEIGHING TECHNOLOGIES



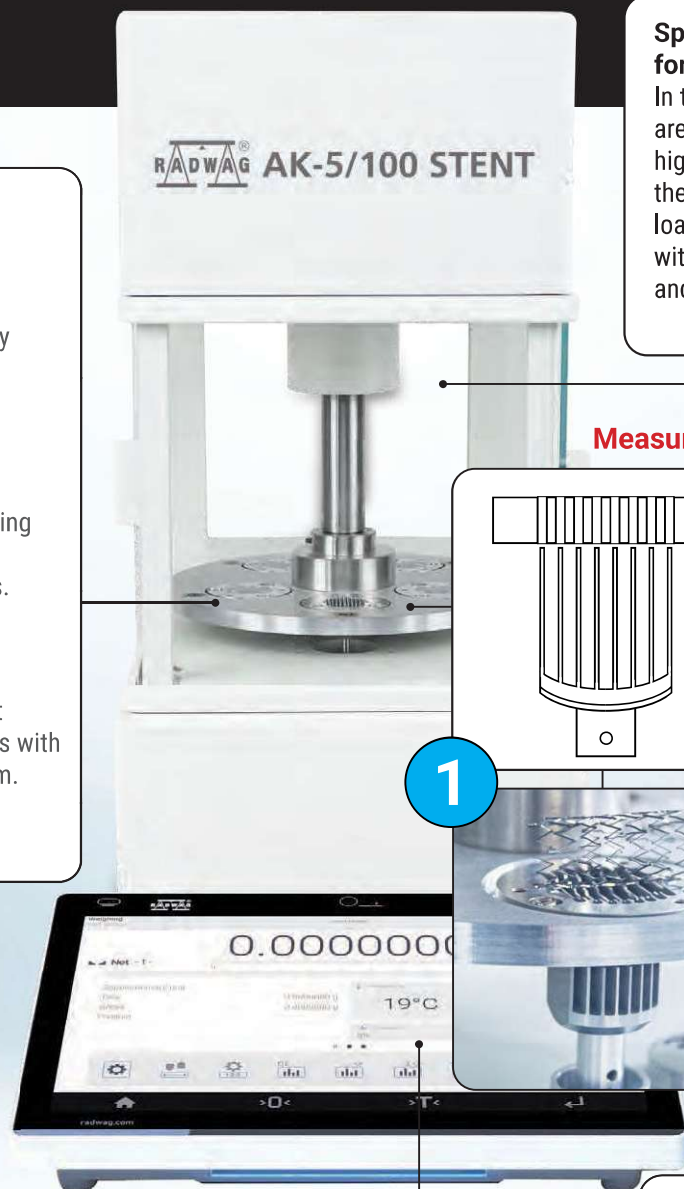
A close-up photograph of a hand holding a medical stent. The stent is a cylindrical metal mesh structure with several vertical struts. The hand is positioned behind the stent, and the background is dark and out of focus.

Specialized **Stent** Weighing Equipment

www.radwag.com

AK-5/100 STENT

Automatic Balance for Stents



Automatic Operation

Automatic weighing eliminates error due to human factor, which improves the repeatability of measurements.

Measurement of the Whole Sample Series

The device enables creating identical test conditions for the entire stent series.

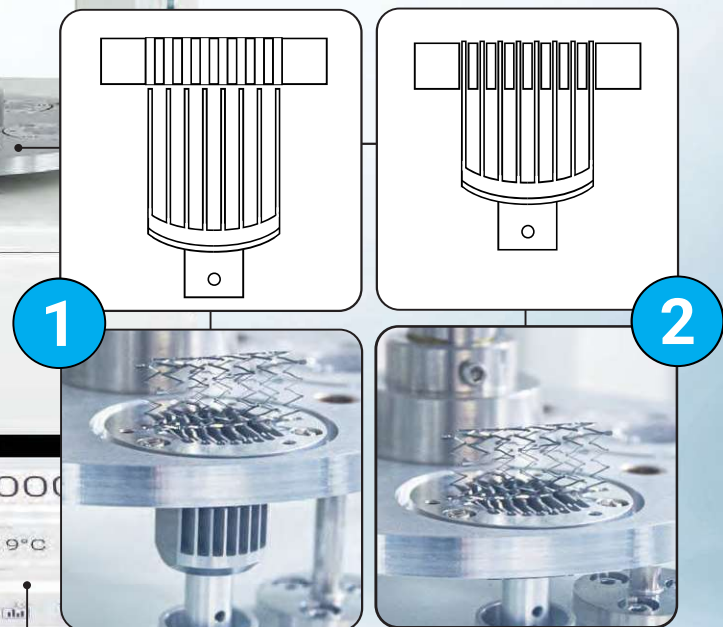
Unique Weighing Pan

Weighing pan of custom design allows convenient weighing of 40 mm stents with a diameter of even 20 mm.

Spacious Chamber for Convenient Operation

In the weighing chamber there are perfect conditions enabling highly precise weighing. The spacious chamber makes loading of the weighing pan with stents comfortable and uncomplicated.

Measurement automation



Second to None Accuracy

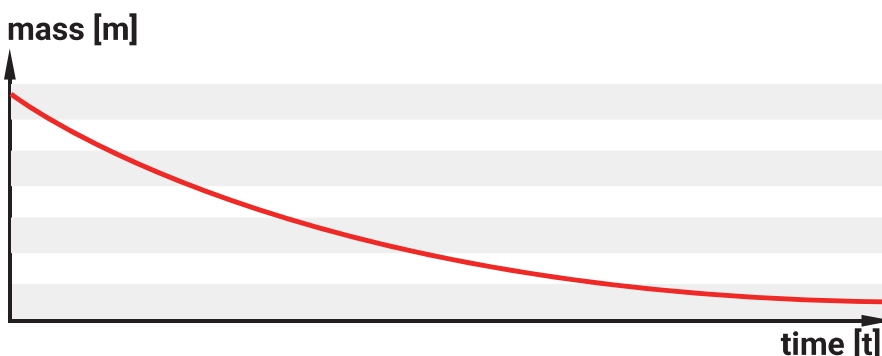
The AK-5/100 STENT automatic balance for stents operates with the readability of $d = 0.1 \mu\text{g}$.

Differential Weighing

The AK-5/100 STENT, similarly to other RADWAG balances designed for stent weighing, features a special working mode, which enables analysis of sample mass changes during the technological process.

MASS CHANGES Visualization

Thanks to the special function of the AK-5/100 STENT automatic balance for stents, it is possible to observe changes in stent mass over time.



XA 6.5Y.M.S Microbalance

Spacious Chamber

A large weighing chamber is a guarantee of operation ergonomics, and an innovative system controlling door opening and closing ensures smooth and silent door sliding.

Ease of Cleaning

The complete disassembly of the weighing chamber without the use of tools, the latch-type assembly system for components and the stainless steel weighing pan all make the XA 6.5Y.M.S microbalance easy to clean.

Readability

Smaller stents can be weighed even with a readability of $d = 1 \mu\text{g}$ in the case of the microbalance.



Dedicated solution for stent weighing: a special weighing pan with an additional shield, and a stent applicator.

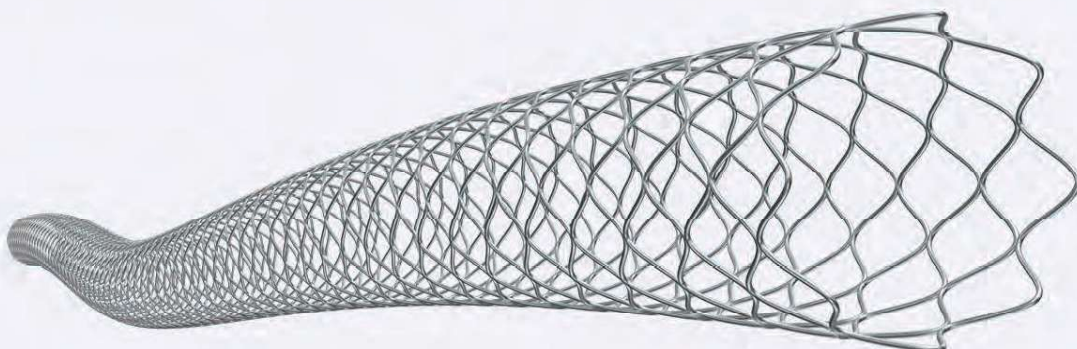
Integrated Antistatic Ionizer

the alternating generation of positive and negative ions leads to an electrostatically inert working environment. the substance with which the stent is covered, when placed in such an environment, also becomes electrostatically inert, so that the weighing process runs smoothly.

Various STENTS Dimensions

RADWAG stent weighing balances enable weighing stents of various dimensions, including:

5.5 × 140 mm, 6 × 60 mm, 8 × 40 mm, 19 × 10 mm, 1.6 × 19 mm





PRODUCT CATALOGUE

ADVANCED WEIGHING TECHNOLOGIES





PIPETTES



Cutting-edge measuring equipment
Quick dispensing of small volume liquids
Highly precise dispensing

Pipettes



	RW8-101-20-9	RW8-102-20-9	RW8-103-20-9	RW8-104-20-9	RW8-105-20-9	RW8-106-20-9	RW8-107-20-9
Volume	0.5 µl ÷ 10 µl	2 µl ÷ 20 µl	5 µl ÷ 50 µl	10 µl ÷ 100 µl	20 µl ÷ 200 µl	100 µl ÷ 1000 µl	500 µl ÷ 5000 µl
Error of accuracy (systematic)*	2.5 % / 1.0 %	3.0 % / 0.9 %	2.0 % / 0.6 %	3.0 % / 0.8 %	2.0 % / 0.6 %	2.0 % / 0.6 %	2.0 % / 0.5 %
Error of repeatability (random)**	1.5 % / 0.8 %	2.0 % / 0.4 %	2.0 % / 0.3 %	1.5 % / 0.15 %	0.8 % / 0.15 %	0.7 % / 0.2 %	0.6 % / 0.15 %
Tips	10 µl	300 µl	300 µl	300 µl	300 µl	1000 µl	5000 µl
Colours							

* Error determined as difference between the mean value obtained for a series of 10 measurements and the expected value.

** Error determined as standard deviation for the series of 10 measurements.



AP-12.5Y

Automatic Device for Multichannel Pipette Calibration

Why?

Speed, process automation, cost reduction.

For whom?

Accredited calibration laboratories,
calibration centres, pipette manufacturers.

What do you gain?

Time and money.

Calibration of a 12-channel pipette will take 1.5 hours rather than 6 hours.



Semi-automatic levelling system

The AP-12.5Y prompts the user in which direction to level the balance. This shortens the entire process.

Ergonomic mechanical design

The AP-12.5Y allows you to empty weighing vessels, and Ambient Light alerts you when they are overfilled.

Full compliance with ISO 8655

The AP-12.5Y software allows pipettes to be calibrated in accordance with ISO 8655 criteria.

Ambient conditions monitoring

Calibrated THB P and THB W sensors, according to ISO 8655.

Ambient Light

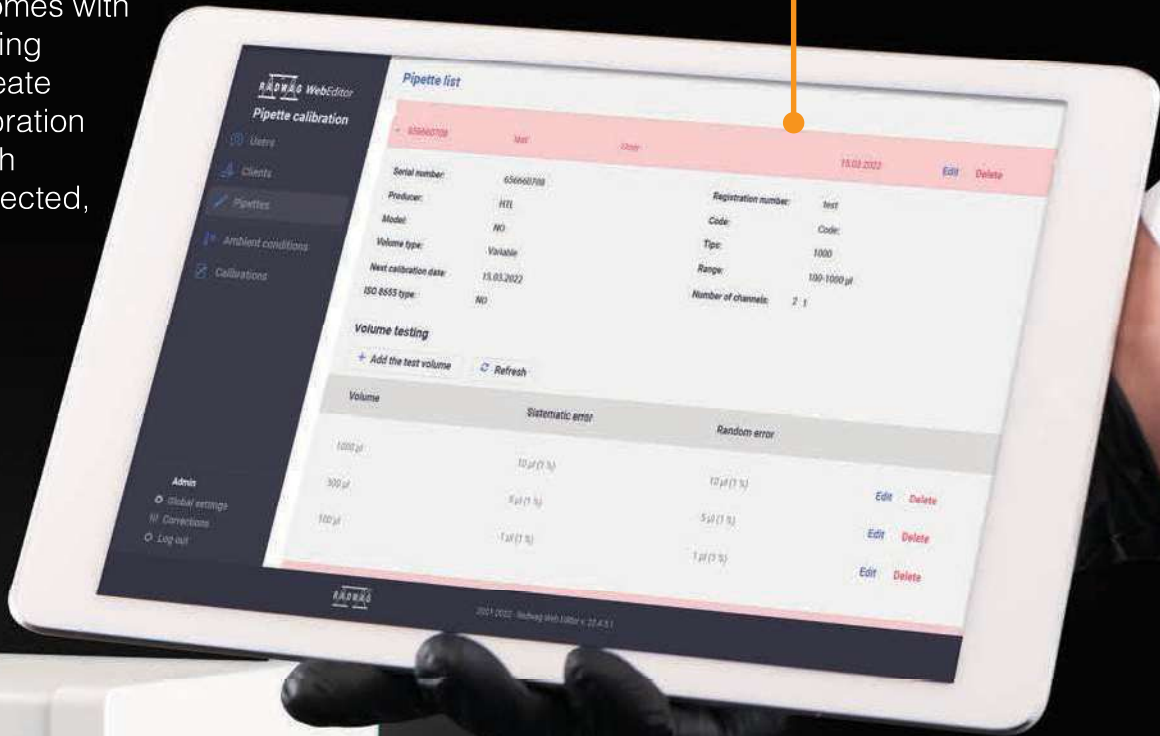
One look and everything's clear. Ambient Light alerts signal the need to empty the weighing vessels.

Editable pipette and report databases

- Database of pipettes with permissible error values by ISO 8655
- Database of pipette calibration reports with measurements and calculated error values for particular points and volumes

Tablet as standard

The device comes with a tablet, allowing the user to create a pipette calibration order and, with a printer connected, print a report.



Optimised calibration process

Fully automated calibration process, eliminating human errors.

Calibration of 1-channel pipettes

Calibration of 1-channel pipettes is possible by using an additional evaporation ring in place of the case for 12-channel pipettes.

Minimum calibration process time

The AP-12.5Y checks all pipettes in one cycle after emptying a 12-channel pipette.

THB W liquid temperature sensor

The temperature of liquid can be measured using the calibrated THB W sensor.

Pipettes Calibration Workstation

Pipettes calibration workstation is a complex solution characterised with excellent operation ergonomics, which guarantees precise measurements.

Additional, built-in anti-vibration table with a stone top prevents transmission of ground vibrations onto the balance, with this the stabilization time is significantly reduced. Due to separation of the table frame from the anti-vibration construction, the operator-generated vibrations are not transferred onto the balance.

Ambient conditions are monitored with use of a set of measuring probes: temperature, air and distilled water, humidity and atmospheric pressure. The probes monitor workstation's ambient conditions in an ongoing manner, this guarantees reliable weighing results.

Pipettes calibration process is supported by a PC software, "Pipettes", which software due to automation improves the procedure of calibration carried out using gravimetric method accordant with ISO 8655-6 standard. "Pipettes" PC software facilitates calibration reports generation, measurement results archiving, and complex pipettes management, compliant with ISO 10012 standard.



Balances Intended for Pipettes Calibration

The highest measurement accuracy is ensured using microbalances and analytical balances of 5Y series, equipped with a special adapter for pipettes calibration. The adapter is characteristic for an evaporation ring which minimizes occurrence of errors in the course of pipettes calibration. Both the instruments, a microbalance and an analytical balance, can be used for performance of standard weighing processes. For this purpose, all the operator needs to do, is to disassemble the adapter.

Characteristics

RADWAG pipettes are modern measuring equipment designed and manufactured in accordance with strict standards concerning manufacturing cleanliness and biodegradability of the product.

The pipettes represent a new line of the 'liquid handling' product group, designed to quickly batch and transport liquids of small volume. They enable highly precise dispensing, and are characterized by ergonomic, solid design. The pipette mechanism ensures exceptional precision and repeatability with less intense pressure applied onto the push button.

All the pipettes are inspected for conformity with the requirements of PN-EN ISO 8655 standard regarding precise and repeatable dispensing. Each pipette is delivered with a test report featuring measurements results. Calibration certificates, issued by the accredited calibration laboratory, are available on request.

Features

- Large and readable volume display that is fully visible during pipetting;
- Innovative soft grip preventing heat transfer to the pipette inside;
- Low pressure required while using the pipette reduces the risk of RSI;
- Simple click mechanism for changing pipette volume;
- Option of autoclaving the pipette in one piece (disassembling not required). Recommended autoclaving process: 15 minutes at 121°C temperature, 1.05 bar pressure;
- Tip ejector collar is made of PVDF which has a high chemical resistance (also at high temperatures) and low susceptibility to microorganisms expansion;
- Ultra UV resistance;
- Convenient in use tip ejector;
- Compatibility with majority of tips available on the market.

Technical Specification

Automatic Device for Multichannel Pipette Calibration



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-101-0416	AP-12.5Y	52 g	0.01 mg	1.3 µg	ø26 mm & automat

Microbalance for Pipette Calibration



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-109-0023	MYA 21.5Y.P	21 g	1 µg	1 µg	ø26 mm



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-112-0001	XA 21.5Y.M.P	21 g	1 µg	1.3 µg	ø26 mm

Analytical Balance



Product Code	Model	Max. capacity	Readability	Repeatability	Weighing pan dimensions
WL-101-0416	AS 82/220.X2.P PLUS	82 / 220 g	0,01 / 0,1 mg	0,01 mg	ø90 & (option) ø85 mm

Professional statistical control
Easy operation
Measurement automation



www.radwag.com

PA-04/H Automatic Feeder

CUTTING-EDGE CONTROL SYSTEM FOR PHARMACY

PA-04/H

High Throughput Easy Cleaning



Intended Use

The automatic feeder is dedicated for automatic dispensing of small objects onto the weighing pan of RADWAG-manufactured balance to which it is connected. The feeder ensures regular feeding of the elements in accordance with determined time intervals.

Operation and Compatibility

The PA-04/H feeder cooperates with XA 5Y analytical balances. Both the feeder and the balance are automated devices. The balance carries out analysis of dosed elements and sends signal to the feeder to dispense subsequent element. The feeder features diodes, signalling its operation, and keypad allowing to control the process. Automatic feeder is equipped with function of automatic emptying of the storage bin.

Vibrating Feeder

Cylindrical vibrating feeder with storage bin enables safe and precise dosing of elements. The storage bin has a conical and stepped shape and is continuously welded. The stainless steel surface of adequate roughness reduces elements grating during dosing process.

Variety of Applications

The feeder is appropriate for dosing pills of diameter ranging from 3 to 25 mm, round and oblong, as well as details of similar shapes and dimensions.

Design

The device is equipped with powder-coated steel housing and stainless steel cover. The storage bin features transparent lid that allows verifying quantity of remaining elements.

Automatic Feeder



Product Code	Model	Dispensed element dimensions	Feeder diameter	Dispensing speed	Ingress protection
WX-001-0105	PA-04/H	ø 3 mm – ø 10 mm, length = 25 mm	ø 180 mm	1 – 15 pcs / min.	IP 34

Autonomous system with remote data access
One sensor monitoring temperature, pressure, air humidity,
air density and vibrations



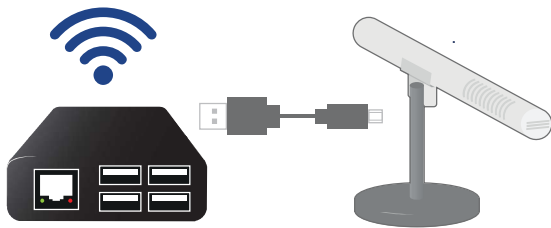
www.radwag.com

THBR 2.0 System

AMBIENT CONDITIONS MONITORING SYSTEM

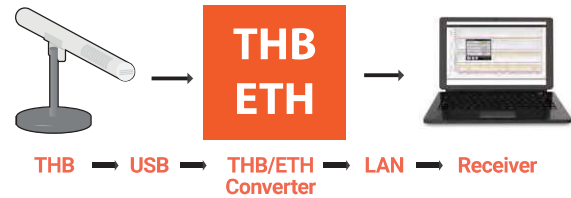
THBR BOX LOCAL AREA NETWORK

THBR Box has been designed to collect measurements of ambient conditions, store data, send alerts and warnings. the device enables direct display of measured parameters via a mobile app or with use of a computer. This requires either entering an IP address and running a selected web browser, or using HDMI interface.



THB/ETH LOCAL AREA NETWORK

THB/ETH is a solution enabling direct connection of the sensor to ETHERNET. With the option of sensor search by its unique serial number, the user can monitor ambient conditions from any place within local area network.



THB-R software offers user interface facilitating presentation, archiving and reporting of recorded measurement data plus configuration of measuring devices. it comprises THB Single application, designed to support one sensor, and THB Multi application, intended to support numerous sensors concurrently.



THBR Mobile Application LOCAL AREA NETWORK

THBR Box recorder can be operated and configured using special THBR mobile app, intended for Android system. the application enables display of real-time measured values of ambient conditions. it stores archive measurements in a form of lists and graphs.

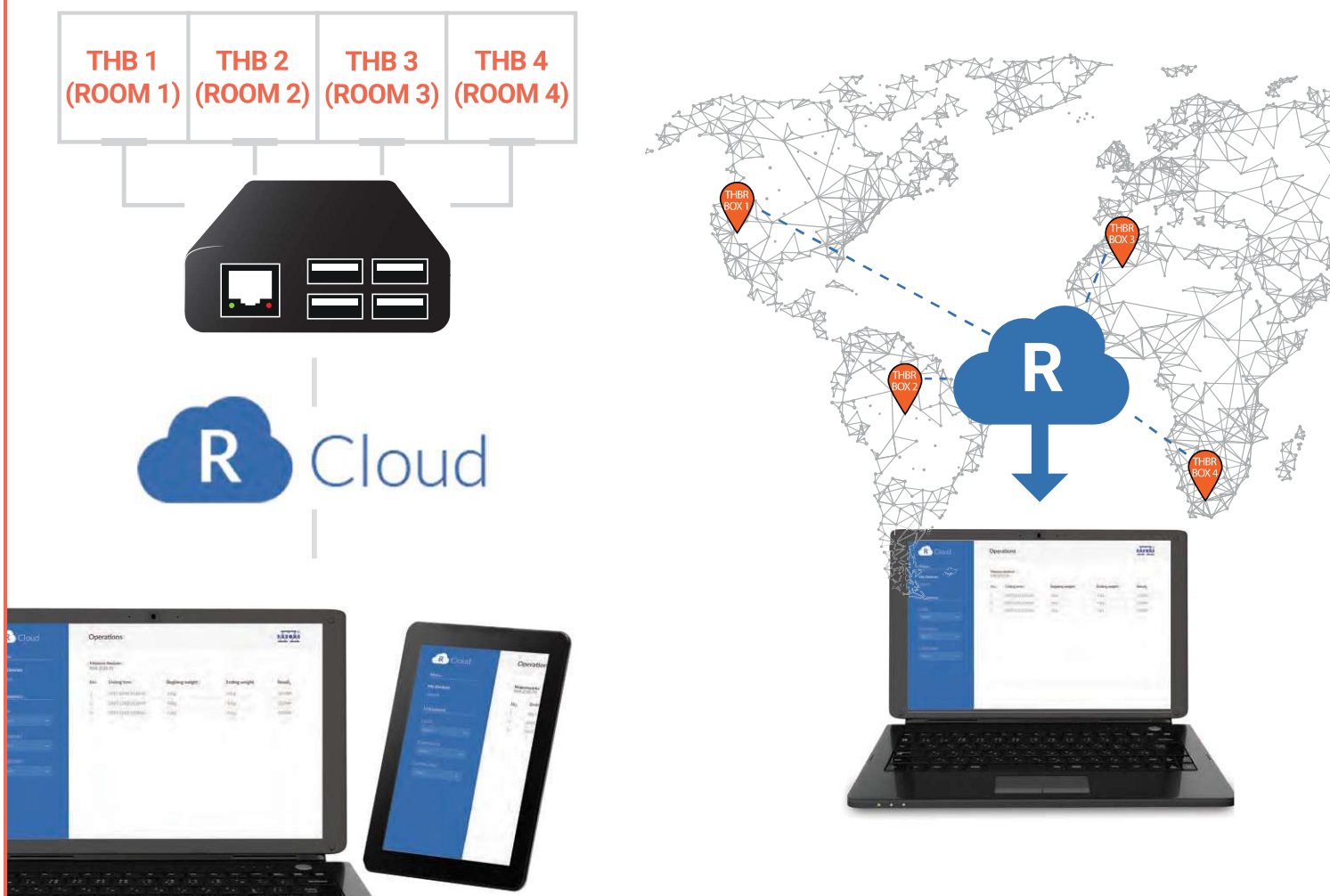
With use of THBR mobile application the user can configure modules names, sensors and both warnings and alerts. This mobile app allows the users to switch between THBR Box recorders and sensors operating in a local area network. Due to an intuitive operation it is possible to easily and quickly access measurements from various devices, and configure them according to individual needs. Monitoring of ambient conditions via THBR interface requires connection with local area network within which the recorder operates.

THBR mobile app can be downloaded from Google Play Store.



R-CLOUD INTERNET

R-Cloud service offers record and preview of measurement results from few sensors concurrently which can be done from any place in the world with Internet access.



THB + BALANCE DIRECT CONNECTION

THB S, THB P and THB W sensors may be connected directly to the balance via USB port. In such a case readout of ambient conditions is carried out using the balance display. The sensors cooperate with RADWAG balances of 5Y, WPY, WLY and HY10 series.



THB-R 2.0 System

Absolute Control Precisely Accurate Measurements



THB S – Standard Ambient Conditions Sensor

THB S sensor is a measuring device of standard class that cooperates with a computer and a weighing device directly or via THBR Box. THB S is used to measure temperature, pressure, air humidity, air density and ground vibrations. Each sensor has its own identification number that is assigned to measurements saved to the database.

THB P – Precise Ambient Conditions Sensor

THB P sensor is a precise device for measurement of ambient conditions. Range of measured parameters for both THB S and THB P sensors is the same, however in case of THB P the parameters are monitored with greater accuracy.

THB W – Liquid Temperature Sensor

THB W sensor is a sensor designed to measure temperature of liquid. Readout of temperature from THB sensor requires connecting to a computer or THBR Box ambient conditions recorder.

THB W is used at pipettes calibration workstation, it measures water temperature in gravimetric method, which is done in order to determine „Z” coefficient in accordance with ISO 8655.

Results

The measurement results can be observed using:

- Balance display
- Web page (THBR Box)
- Windows OS application: THB Single or THB Multi
- Android system application (THBR Box).



	THB S	THB P	THB W (for liquids)
Measured temperature range	+5 – +45 °C	+5 – +45 °C	+5 – +45 °C
Temperature readability [d]	0.01 °C	0.001 °C	0.01 °C
Temperature measurement accuracy	+/- 0.1 °C	+/- 0.1 °C	+/- 0.1 °C
Measured pressure range	850 -1050 hPa	850 -1050 hPa	–
Pressure readability [d]	0.1 hPa	0.001 hPa	–
Pressure measurement accuracy	1 hPa	1 hPa	–
Measured humidity range	0-100%	0-100%	–
Humidity readability [d]	0.1 %	0.01 %	–
Humidity measurement accuracy	+/- 1.8 %	+/- 1.8 %	–
Operating temperature	+5 – +45 °C	+5 – +45 °C	–
Communication interface	USB 2.0	USB 2.0	USB 2.0
Vibrations detection	YES	YES	–
Air density determination	YES	YES	–



Weighing Tables and Workstations

Anti-vibration weighing workstations for precise weighing under laboratory and industrial conditions



Weighing Tables and Workstations

Granite Anti-Vibration Tables

SAL/STONE/C

Granite table

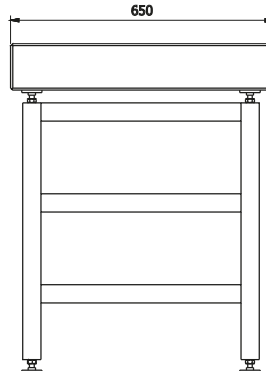
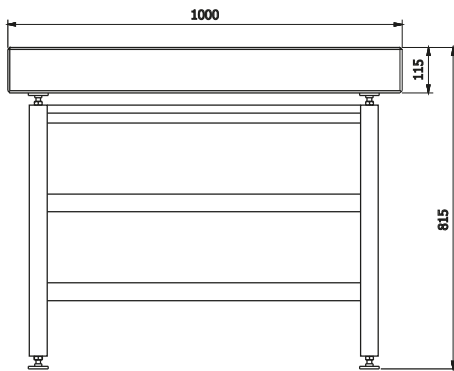


The table has been designed to eliminate ground vibrations during the operation of laboratory equipment such as microbalances, analytical balances and others. The working part consists of a table and a stone separated by a vibration damper. The table is equipped with adjustable feet with rubber tips, facilitating table levelling on uneven surfaces. Stability and vibration damping properties, resulting from the significant weight, are the main advantages of the table. The large surface of the tabletop makes it possible to place several balances on it.

The structure of the SAL/STONE/C version is made of powder-coated steel, and in the case of the SAL/STONE/H version - of stainless steel.

SAL/STONE/H

Stainless steel granite table



SA/APP/C

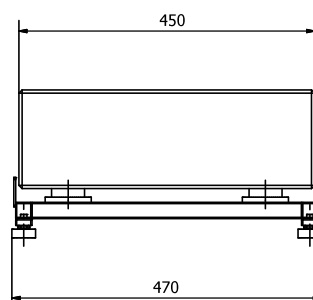
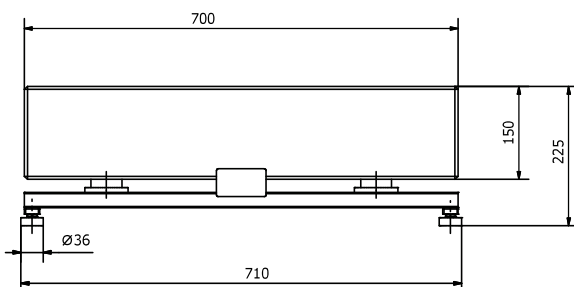
Anti-vibration table for mass comparators



This anti-vibration table is intended for mass comparators. It is made of powder-coated steel and a massive granite plate placed on top. The table has a safety feature to prevent accidental slipping of the stone, as well as vibration dampening rubbers. Due to low construction, the need to lift large masses to a considerable height is reduced.

SA/APP/H

Stainless steel anti-vibration table for mass comparators



Weighing Tables and Workstations

Professional Weighing Workstations

PSW

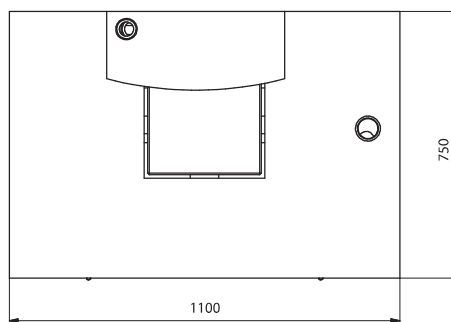
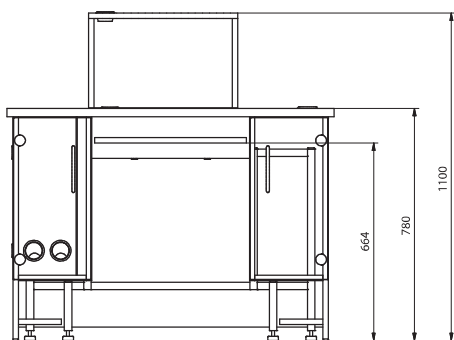
Professional single weighing workstation



The professional weighing workstation is intended for microbalances and analytical balances. It is equipped with two lockers for a computer and an emergency UPS power supply or a power strip. The workstation also has a sliding shelf for a keyboard and a mouse.

It additionally features ventilation openings and a base for a monitor. The separated anti-vibration part provides protection against vibration, and the feet feature rubber tips to facilitate table levelling on uneven floors.

The structure of the workstation is made of steel, the top of stone, and the working part of MDF.



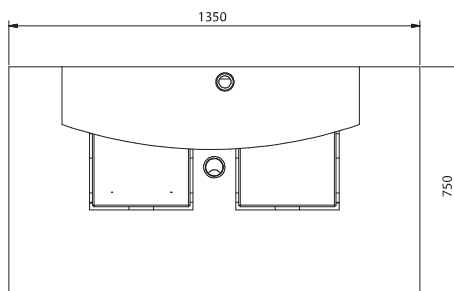
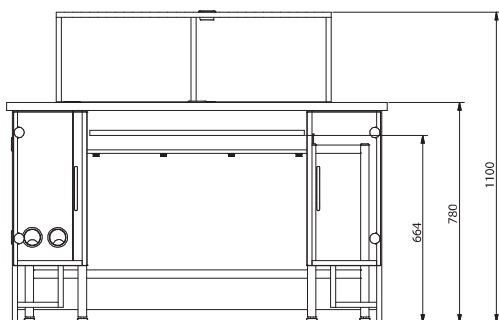
PSW/DUAL

Professional dual weighing workstation



The dual weighing workstation is intended for microbalances and analytical balances. It is equipped with two lockers for a computer and an emergency UPS power supply or a power strip. The workstation also has a sliding shelf for a keyboard and a mouse. It additionally features ventilation openings and a base for a monitor. The separated anti-vibration part provides protection against vibration, and the feet feature rubber tips to facilitate table levelling on uneven floors.

The structure of the workstation is made of steel, the two tabletops that allow two balances to be used simultaneously are made of stone, and the working part of the tables is made of MDF.



Weighing Tables and Workstations

Standard Anti-Vibration Tables

SAL/C PLUS

Anti-vibration table for PLUS series balances

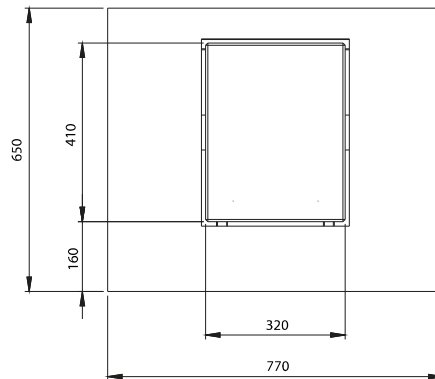
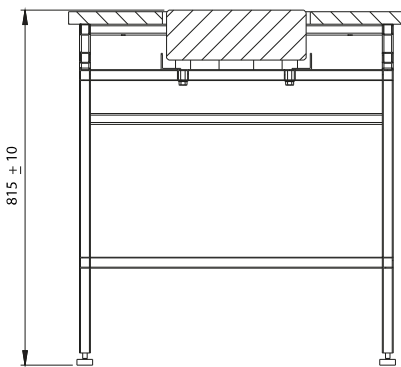
SAL/H PLUS

Stainless laboratory anti-vibration table for PLUS series balances



The anti-vibration table has been designed to eliminate floor vibrations during the operation of PLUS series laboratory balances. It consists of two separate constructions: the outer, designed to isolate the working part, and the inner. The working part includes a table and a stone separated by a vibration damper. The table features a stone top (located at the centre of the table) and adjustable feet with protective rubber tips, facilitating table levelling on uneven surfaces.

The structure of the SAL/R/C version is made of powder-coated steel, and the tabletop is made of MDF. In the case of the SAL/R/H version, the structure and the tabletop are made of acid-resistant stainless steel.



SAL/C

Laboratory anti-vibration table

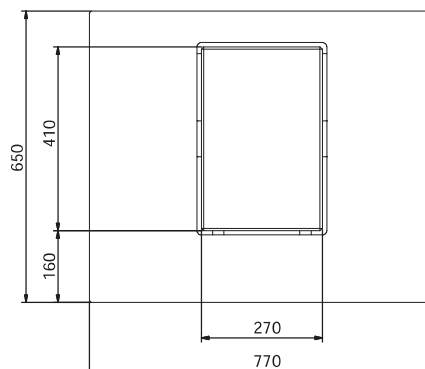
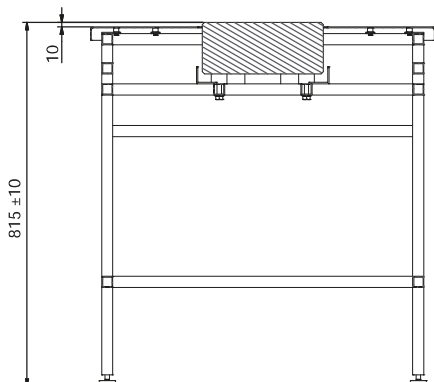
SAL/H

Stainless steel laboratory anti-vibration table



The anti-vibration table has been designed to eliminate ground vibrations during the operation of laboratory equipment such as microbalances, analytical balances and others. It consists of two separate constructions: the outer, designed to isolate the working part, and the inner. The working part includes a table and a stone separated by a vibration damper. The table features a stone top (located at the centre of the table) and adjustable feet with protective rubber tips, facilitating table levelling on uneven surfaces.

The structure of the SAL/C version is made of powder-coated steel, and the tabletop is made of MDF. In the case of the SAL/H version, the structure and the tabletop are made of acid-resistant stainless steel.



Weighing Tables and Workstations

Standard Anti-Vibration Tables

SAP/C

Industrial anti-vibration table

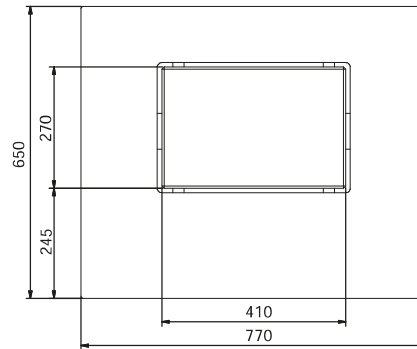
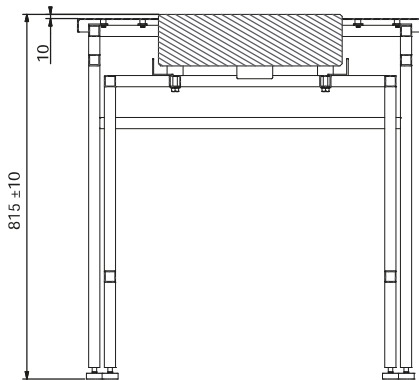


The anti-vibration table has been designed to eliminate floor vibrations during the operation of industrial scales. It consists of two separate constructions: the outer, designed to isolate the working part, and the inner. The working part includes a table and a stone separated by a vibration damper. The table features a large stone top and adjustable feet with protective rubber tips, facilitating table levelling on uneven surfaces.

The structure of the SAP/C version is made of powder-coated steel, and the tabletop is made of MDF. In the case of the SAP/H version, the structure and the tabletop are made of acid-resistant stainless steel.

SAP/H

Stainless steel industrial anti-vibration table



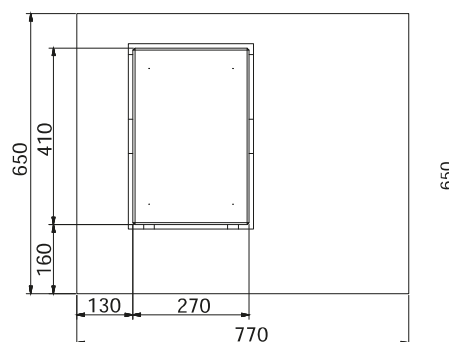
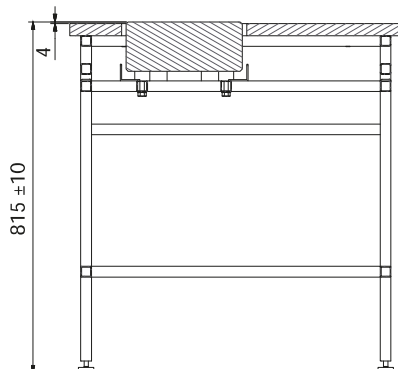
SAL/T

Steel Anti-Vibration Table for PA-04/H 2 900 Automatic Feeder



The anti-vibration table has been designed to eliminate ground vibrations during the operation of automatic feeder. It consists of two separate constructions: the outer, designed to isolate the working part, and the inner. The working part includes a table and a stone separated by a vibration damper. The table features a stone top (located on the left side of the table) and adjustable feet with protective rubber tips, facilitating table levelling on uneven surfaces.

The structure of the SAL/L/C version is made of powder-coated steel, and the top is made of HPL board.



Technical Specification

Anti-Vibration Table for PLUS Series Balances



Product Code	Model	NET weight	Construction	Load-bearing capacity	Dimensions (Length x Width x Height)
WX-001-0156	SAL/C/PLUS	table 30 kg & stone 40 kg	mild steel St3S	40 kg	770 x 650 x 815±10 mm
WX-001-0155	SAL/H/PLUS	table 30 kg & stone 40 kg	stainless steel	40 kg	770 x 650 x 815±10 mm

Laboratory Anti-Vibration Table



Product Code	Model	NET weight	Construction	Load-bearing capacity	Dimensions (Length x Width x Height)
WX-001-0076	SAL/C	table 30 kg & stone 34 kg	mild steel St3S	40 kg	770 x 650 x 815±10 mm
WX-001-0077	SAL/H	table 30 kg & stone 34 kg	stainless steel	40 kg	770 x 650 x 815±10 mm

Granite Anti-Vibration Tables



Product Code	Model	NET weight	Construction	Load-bearing capacity	Dimensions (Length x Width x Height)
WX-001-0078	SAL/STONE/C	table 25 kg & stone 190 kg	mild steel St3S	150 kg	1000 x 650 x 815 mm
WX-001-0079	SAL/STONE/H	table 25 kg & stone 190 kg	stainless steel	150 kg	1000 x 650 x 815 mm

Industrial Anti-Vibration Table



Product Code	Model	NET weight	Construction	Load-bearing capacity	Dimensions (Length x Width x Height)
WX-004-0145	SAP/C	table 28 kg & stone 34 kg	mild steel St3S	40 kg	770 x 650 x 815±10 mm
WX-004-0146	SAP/H	table 30 kg & stone 34 kg	stainless steel	40 kg	770 x 650 x 815±10 mm

Anti-Vibration Table for Mass Comparators



Product Code	Model	NET weight	Construction	Load-bearing capacity	Dimensions (Length x Width x Height)
WX-002-0039	SA/APP/C	table 15 kg & stone 130 kg	mild steel St3S	150 kg	700 x 450 x 225 mm
WX-002-0040	SA/APP/H	table 15 kg & stone 130 kg	stainless steel	150 kg	700 x 450 x 225 mm

Steel Anti-Vibration Table for PA-04/H Automatic Feeder



Product Code	Model	NET weight	Construction	Load-bearing capacity	Dimensions (Length x Width x Height)
WX-001-0107	SAL/T	table 30 kg & stone 34 kg	mild steel St3S	40 kg	770 x 650 x 815±10 mm

Professional Single Weighing Workstation



Product Code	Model	NET weight	Construction	Load-bearing capacity	Dimensions (Length x Width x Height)
WX-001-0020	PSW	table 110 kg & stone 40 kg	-	-	1100 x 750 x 1100 mm

Professional Dual Weighing Workstation



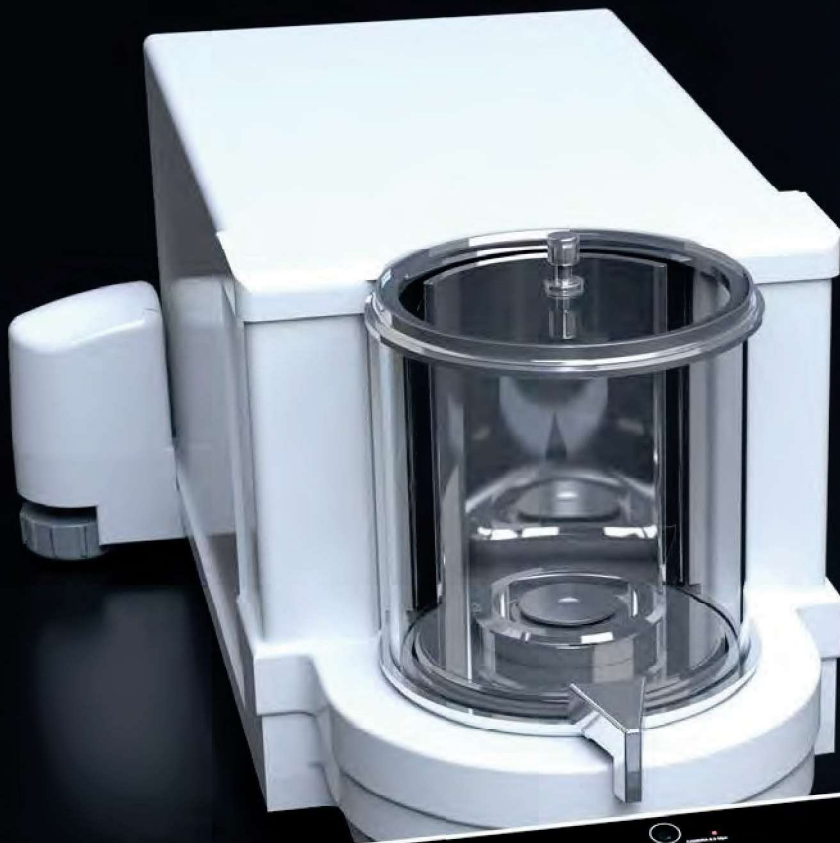
Product Code	Model	NET weight	Construction	Load-bearing capacity	Dimensions (Length x Width x Height)
WX-001-0402	PSW/DUA	table 140 kg & stone 80 kg	-	-	1350 x 750 x 1100 mm



PRODUCT CATALOGUE

ADVANCED WEIGHING TECHNOLOGIES





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