Mass Comparators

Mini Robotic
Mass Comparators

Robotic Mass Comparators
RMCM

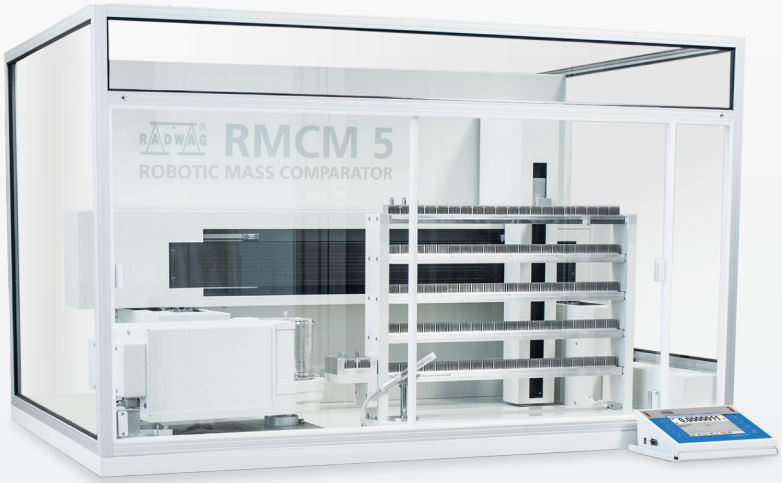
Combination of the mass comparator and the robotic transport system has resulted with development of a new RADWAG mass comparator, the RMCM. The device is unique due to its compact dimensions and aesthetic look.

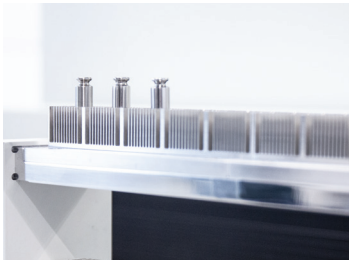
This combination brings a number of advantages:

- reduction of air drafts and vibrations from a robotic system in the course of comparison,
- minimised human error risk,
- compact dimensions,
- easier maintaining of stable environmental conditions inside the weighing chamber.

The mass comparator comes standard with a top-class thermo-hygro-barometer enabling real-time control of ambient conditions in three locations. The characteristic feature of the device is high readability of pressure, 0.001 hPa, humidity, 0.01 %, and temperature, 0.001 °C. Reliability of ambient conditions measurement carried out using the thermo-hygro-barometer is confirmed by a calibration certificate.

Mechanical design of the mass standard magazine insert allows measurement of extremely small mass with very high accuracy, and prevents weight jamming. The device enables comparison of weights of all shapes compliant with OIML recommendations, using just one universal insert.





The mass standard magazine offers up to 120 magazine positions.

The mass comparator facilitates a complete dissemination process.

Remote preview of comparison process in real time is possible thanks to a video camera.

The mass comparator allows real-time monitoring of ambient conditions.

		RMCM 5	RMCM 100
Calibration range	E1	1 mg – 5 g	1 g – 100 g
	E2	1 mg – 5 g	1 g – 100 g
	F1	1 mg – 5 g	1 g – 100 g
	F2	1 mg – 5 g	1 g – 100 g
Max capacity [Max]		5.1 g	110 g
Readability [d]		0.1 µg	1 µg
Standard repeatability [5% Max]*		0.25 µg	1.5 µg
Standard repeatability [Max]*		0.4 µg	2 µg
Magazine positions		120	75
Weighing pan dimensions		24 × 50 mm	24 × 63 mm

** Standard deviation of 6 ABBA cycles (acc. to R111 OIML) for maximal mass being subjected to comparison when stable laboratory conditions are maintained.*

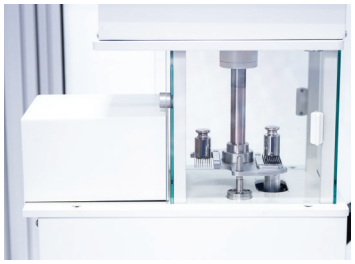
Robotic
Mass Comparators

Robotic Mass Comparators
RMC

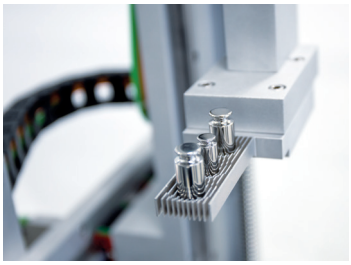
The new line of RADWAG-manufactured RMC robotic mass comparator ensures repeatability of measurements ranging from 1 g to 1 kg with readability of 0.1 µg. The device is equipped with two magazines, 100-position one and additional 2-position magazine enabling dissemination of the mass standard into maximum 3 mass standards (e.g. 50 g mass standard can be disseminated into 3 mass standards of 20 g, 20 g and 10 g). Locating additional magazine near mass comparator weighing pan significantly shortens the calibration process.

RMC robotic mass comparator, due to the elimination of the human factor, temperature changes and air drafts, guarantees excellent measurement repeatability. Intermediate mass standard magazine enables storing mass standards near the weighing pan. With this the calibration time is reduced to minimum.

Insert design of the mass standard magazine allows measurement of weight of very small mass with high accuracy and prevents weight jamming. The device enables comparison of weight of various shapes using just one universal insert.



RADWAG as the worldwide pioneer has adopted the possibilities of the automatic mass comparator into the robotic comparison system. This modern approach has improved comparison result repeatability by 100% in relation to standard solutions applied worldwide.



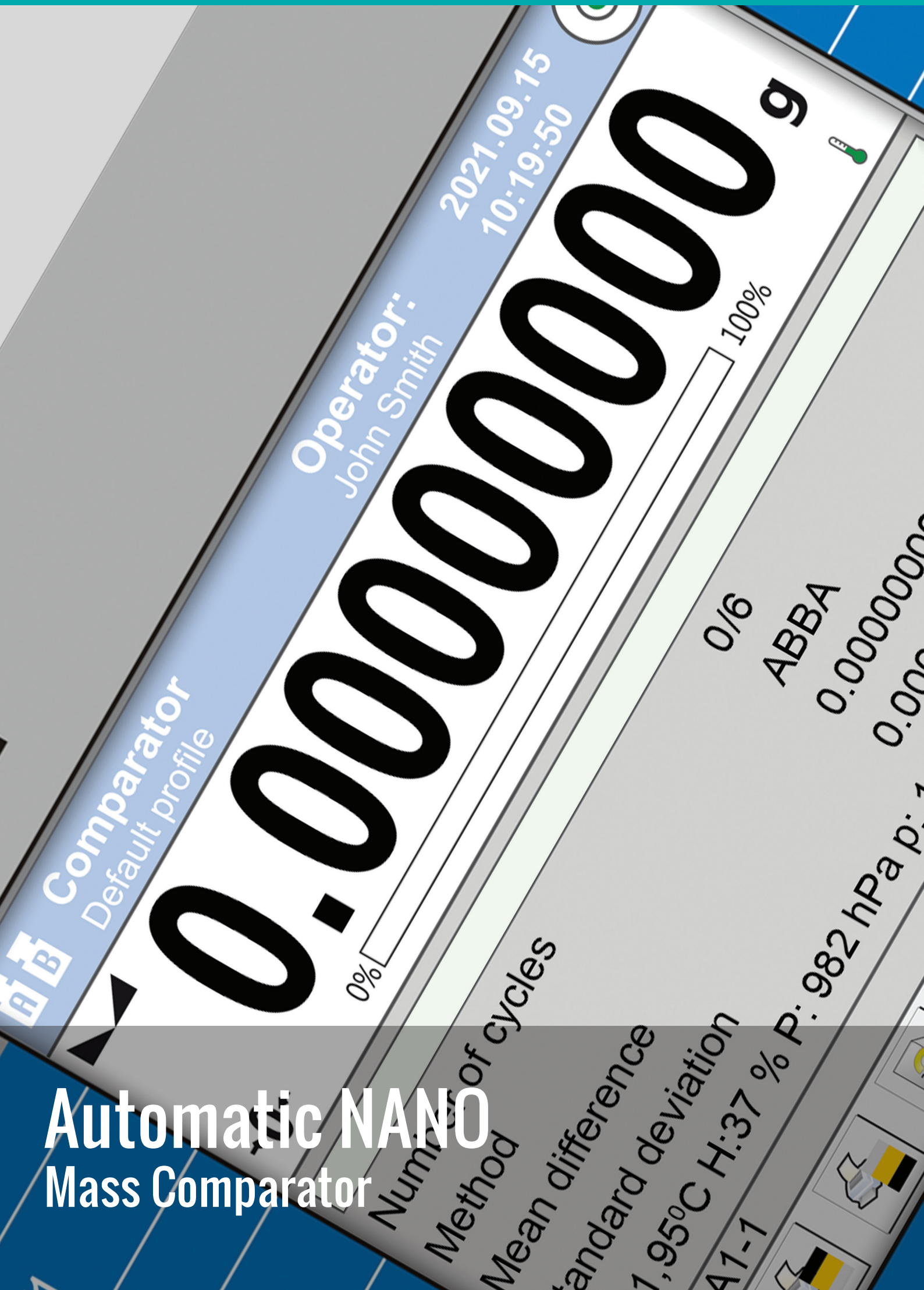
Feeder of custom design enables fast and precise comparison and dissemination.

The mass comparator enables a complete dissemination process, which is possible due to placing the intermediate mass standard magazine inside the mass comparator chamber. This significantly shortens comparison duration and reduces wear and tear of the transport robot.

The mass standard magazine offers up to 100 magazine positions, this number is conditioned by a comparator model. The device enables comparison of weights of all shapes compliant with OIML recommendations, using just one universal insert.

		RMC 100.1	RMC 1000.1
Calibration range	E1	1 g – 100 g	10 g – 1000 g
	E2	1 g – 100 g	10 g – 1000 g
	F1	1 g – 100 g	10 g – 1000 g
	F2	1 g – 100 g	10 g – 1000 g
Max capacity [Max]		106 g	1060 g
Readability [d]		0.1 µg	1 µg
Standard repeatability [5% Max]*		0.5 µg	1.2 µg
Standard repeatability [Max]*		0.8 µg	2 µg
Magazine positions		100	36
Weighing pan dimensions		24 × 63 mm	50 × 125 mm

** Standard deviation of 6 ABBA cycles (acc. to R111 OIML) for maximal mass being subjected to comparison when stable laboratory conditions are maintained.*



Automatic NANO

Mass Comparator

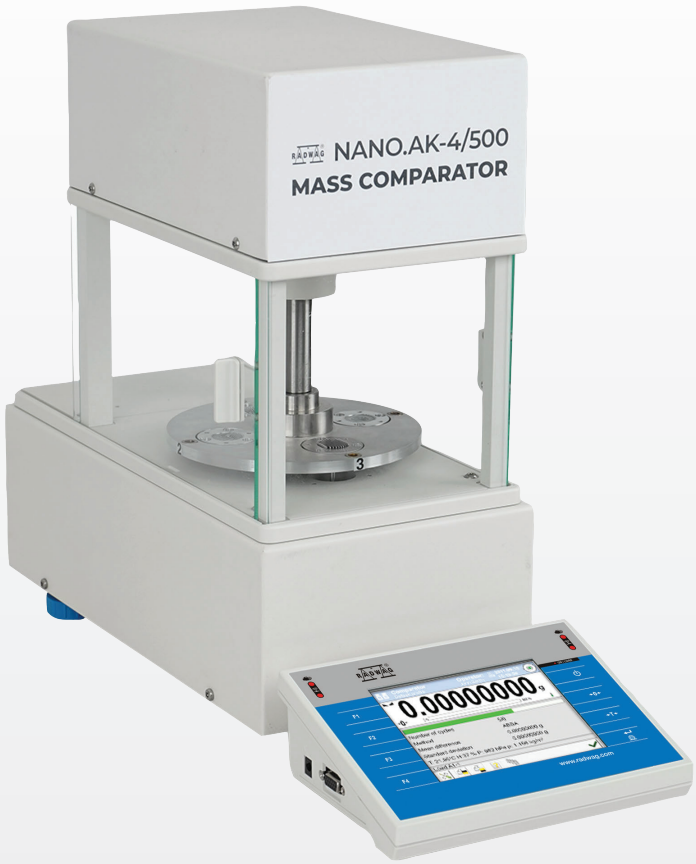
Automatic Nano Mass Comparator

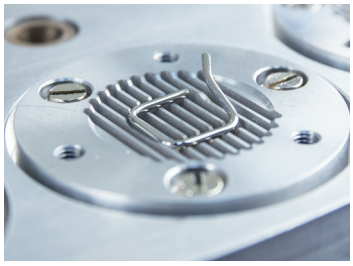
NANO.AK-4/500

The NANO.AK-4/500 automatic nano mass comparator enables determining mass deviations of weights with the minimum possible operator participation. The comparator allows to compare weights of mass ranging between 0.05 mg to 500 mg.

NANO.AK-4/500 automatic nano mass comparator, due to the elimination of the human factor, temperature changes and air drafts, guarantees excellent measurement repeatability when compared to manual mass comparator.

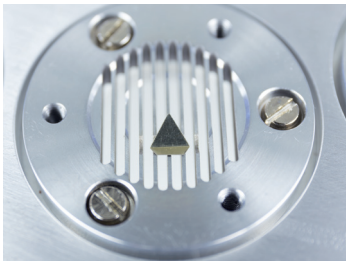
An element that controls mass comparator operation is a digital management module, which is placed inside comparator's chamber along with an automatic mass standard feeder. Mass comparator is operated by means of indicator connected to the comparator controller. Control elements are not mechanically integrated with the construction thanks to what the influence of ambient conditions on mass comparator chamber is significantly reduced.





Compact device dimensions facilitate its use on a standard measurement workstation.

User-friendly and functional software guides you through preparation process of complete calibration plan within just a few minutes.

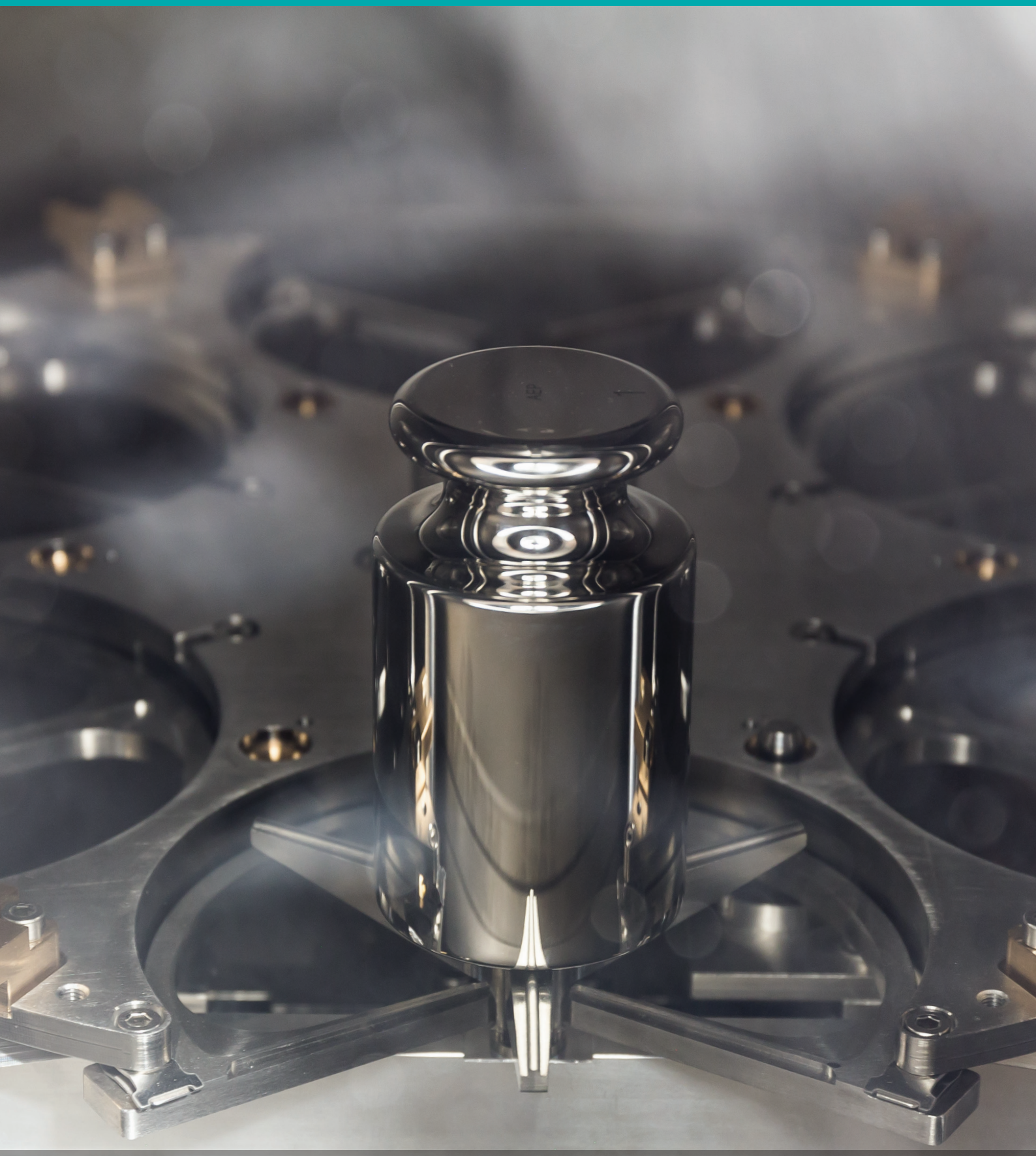


Comparison can be carried out for weights of all shapes with use of just one universal weighing pan.

No other mass comparator in the world calibrates mass standards starting from 50 µg with the readability of up to 10 ng. In addition to the highest resolution and the possibility of calibration of micro-standards with the lowest measurement uncertainty, it ensures the best repeatability and the lowest sd value.

		NANO.AK-4/500
Calibration range	E1	0.05 mg – 500 mg
	E2	0.05 mg – 500 mg
	F1	0.05 mg – 500 mg
	F2	0.05 mg – 500 mg
	M1	–
	M2	–
Max capacity [Max]		510 mg
Readability [d]		10 ng
Standard repeatability [5% Max]*		0.04 µg
Standard repeatability [Max]*		0.06 µg

** Standard deviation of 6 ABBA cycles (acc. to R111 OIML) for maximal mass being subjected to comparison when stable laboratory conditions are maintained.*



Automatic Vacuum
Mass Comparators

Automatic Vacuum Mass Comparator
AVK-1000

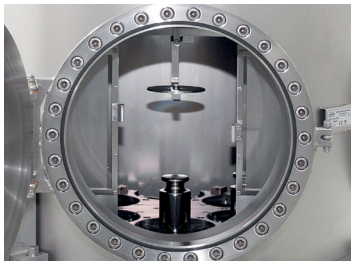
The AVK-1000 automatic vacuum mass comparator is mainly intended for national metrological institutes that transport and maintain the national reference mass standard of 1 kg.

Resolution of 10 billion units plus elimination of human error and other external factors due to the use of vacuum chamber effectively prevent any potential errors that may occur during the measurement.

The comparator enables comparison of up to 6 artefacts of cylinder or sphere shape, and of max 1 kg mass, with repeatability of 0.5 µg and readability of 0.1 µg. Thanks to a suspended weighing pan, the eccentricity error being an effect of incorrectly positioned mass standard is eliminated.

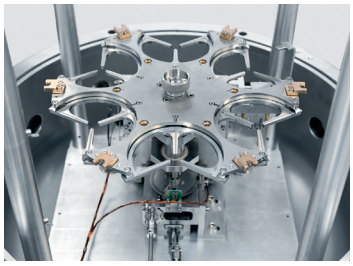
A specially designed vacuum chamber enables carrying out measurements in a vacuum of 10(-6) mBar capacity or in atmosphere containing noble gases, also in constant pressure upon closing the system with use of the top-class quality valves.

LOAD LOCK mass standard transfer system enables switching or adding artefacts without changing the atmosphere inside the main chamber. Use of mass standard transfer chamber reduces time required for obtaining the respective value of vacuum to ca. 4 hours. The LOAD LOCK is equipped with a high-efficiency pump system and a top-class vacuum gauge. A specially designed inspection hole enables monitoring of the whole transfer process. Supplementing the AVK-1000 vacuum mass comparator with LOAD LOCK system significantly improves the comparison performance.



Used chamber enables comparison in vacuum of maximum $10^{(-6)}$ mBar or in noble gases such as argon.

The LOAD LOCK system for transfer of mass standards enables switching and adding artefacts without changing the atmosphere inside the main chamber.



The mass comparator features magazine for 6 cylindrical objects of Ø (22 - 95) x 110 mm or sphere objects of maximum diameter of Ø 100 mm.

Suspended weighing pan of custom design eliminates eccentricity errors and facilitates dropping the weight onto the magazine insert correctly.

		AVK-1000
Calibration range	E1	100 g – 1 kg
	E2	100 g – 1 kg
	F1	100 g – 1 kg
	F2	100 g – 1 kg
	M1	–
	M2	–
Max capacity [Max]		1002 g
Readability [d]		0.1 µg
Standard repeatability [5% Max]*		0.4 µg
Standard repeatability [Max]*		0.5 µg

** Results obtained in vacuum, under perfect conditions*

Density Measurement
Mass Comparators

Automatic Comparators
AGV

RADWAG-designed AGV automatic comparator uses the most accurate method of determining density of mass standard. First, the mass standard is weighed in air and then in liquid of known density. Specially designed construction of the weighing pan minimizes the influence of surface tension of the liquid.

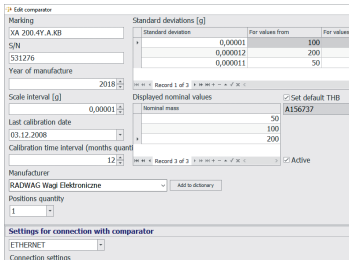
The comparator is equipped with a top-class thermometer of 0.001°C resolution and three temperature sensors. Measurement carried out in three points of the container (at the bottom, in the middle and near the surface) allows to assess the difference in temperature. With this, it is possible to mix and even the liquid temperature in the container. Otherwise, the density measurement results may be incorrect.

The comparator software enables to determine mass standards density and calculate uncertainty using A method according to OIML R111. It also allows to determine (verify) liquid density.

5.7" colour touch screen ensures comfort of comparator operation. Easy access to numerous applications and functions is ensured by home screen customization. The indicator is equipped with two programmable proximity sensors.

Special design of the insert ensures very high measuring range of the comparator (1g-1kg). It is also intended for comparison of silicone spheres.

The comparator features specially designed feeder to load and unload the magazine with mass standards.



Dedicated software for determination of mass standard's density and volume.

A weighing pan suspended on wires of 0.3 mm diameter significantly minimizes the eccentricity and eliminates the influence of liquid surface tension.

		AGV-2/20	AGV-8/1000
Calibration range	E1	1 kg – 20 kg	1 g – 1 kg
	E2	1 kg – 20 kg	–
	F1	1 kg – 20 kg	–
	F2	1 kg – 20 kg	–
	M1	–	–
	M2	–	–
Max capacity [Max]		26.1 kg	1110 g
Readability [d]		1 mg	0.01 mg
Standard repeatability [5% Max]*		2 mg	0.04 mg
Standard repeatability [Max]*		3 mg	0.08 mg

** Standard deviation of 6 ABBA cycles (acc. to R111 OIML) for maximal mass being subjected to comparison when stable laboratory conditions are maintained.*

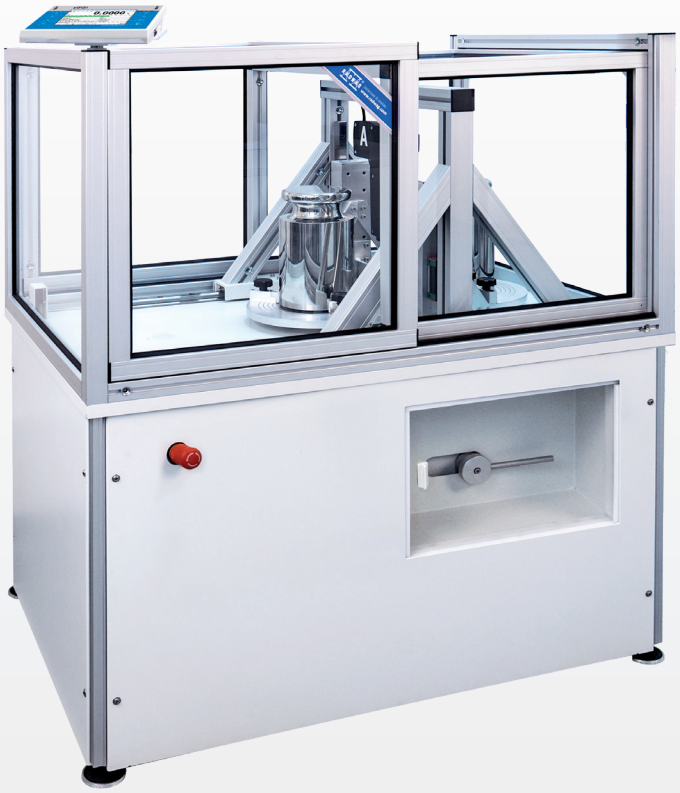
Automatic
Mass Comparators

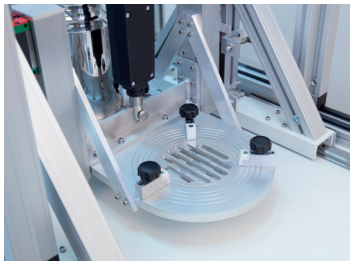
Automatic Mass Comparators
AKM-2

Mass comparators of AKM-2 series stand for the highest standard of professional automatic mass comparators. They provide comparison of 500 g – 50 kg weights of E1 and lower classes. The comparator is offered in a form of 2-positional weight alternator: for 1 reference mass standard and 1 tested weight.

For maximum comfort of operation, the AKM-2 has been equipped with automatic sliding feeding mechanism allowing easy placement of heavy weights.

Owing to elimination of human error and with temperature change and air drafts reduced to zero, AKM-2 automatic mass comparators provide the highest possible measurement repeatability, incomparable to repeatability offered by manual comparators.

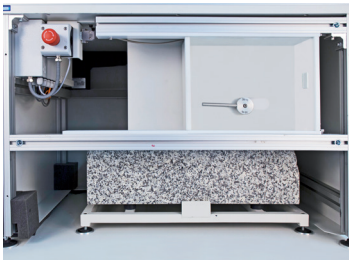




Weight positioning of sliding nature prevents errors of eccentricity.

Dedicated weighing pan design facilitates extremely precise weights comparison, no matter how light the weights are.

Weighing range switch allows you to select different load ranges for weights comparison. Regardless of selected option, constant comparator resolution is maintained.



Sturdy design of the table, featuring heavy granite stone and robust rubber shock absorbers, reduces effect of vibrations to the absolute minimum.

		AKM-2/10	AKM-2/20	AKM-2/50
Calibration range	E1	2 kg – 10 kg	5 kg – 20 kg	50 kg
	E2	500 g – 10 kg	1 kg – 20 kg	10 kg – 50 kg
	F1	500 g – 10 kg	1 kg – 20 kg	5 kg – 50 kg
	F2	500 g – 10 kg	1 kg – 20 kg	5 kg – 50 kg
	M1	–	–	–
	M2	–	–	–
Max capacity [Max]		10.2 kg	20.5 kg	51 kg
Readability [d]		0.1 mg	0.1 mg	1 mg
Standard repeatability [5% Max]*		0.15 mg	0.3 mg	2.5 mg
Standard repeatability [Max]*		0.2 mg	0.4 mg	3.5 mg

** Standard deviation of 6 ABBA cycles (acc. to R111 OIML) for maximal mass being subjected to comparison when stable laboratory conditions are maintained.*

Automatic Mass Comparators

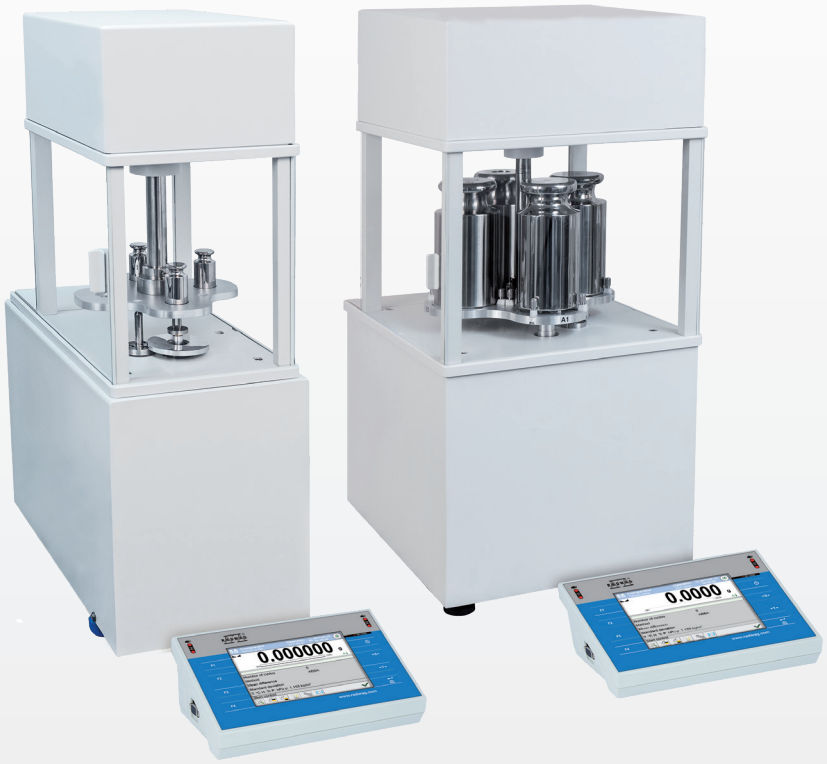
AK-4

Mass comparators of AK-4 series stand for the highest standard of professional automatic mass comparators. They provide comparison of 10 g – 10 kg weights of E1 and lower classes. The comparators are offered in two versions:

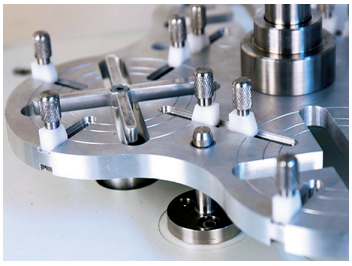
- 4-positional weight alternator: for 1 reference mass standard and 3 tested weights
- 2-positional weight alternator: for reference weight being a combination of mass value of 3 separate weights.

Owing to elimination of human error and with temperature change and air drafts reduced to zero, AK-4 automatic mass comparators provide the highest possible measurement repeatability, incomparable to repeatability offered by manual comparators.

A supplementary external anti-draft chamber comes standard with each AK-4 comparator.



Weight positioning of sliding nature prevents errors of eccentricity.



RADWAG solutions intended for automatic comparators, i.e. positioning mechanism, guarantee extremely precise setting of weight on a weighing pan, performed each time the turntable has been rotated.

Extraordinary design of the weighing pan enables both, comparison of mass being combination of 3 weights, and standard comparison of 1 weight.

Weighing range switch allows you to select different load ranges for weights comparison. Regardless of selected option, constant comparator resolution is maintained.

		AK-4/100.1	AK-4/100	AK-4/1000	AK-4/1001	AK-4/2000	AK-4/5000	AK-4/5000.1	AK-4/10000
Calibration range	E1	10 g – 100 g	10 g – 100 g	100 g – 1 kg	100 g – 1 kg	200 g – 2 kg	1 kg – 5 kg	1 kg – 5 kg	1 kg – 10 kg
	E2	10 g – 100 g	10 g – 100 g	100 g – 1 kg	100 g – 1 kg	200 g – 2 kg	1 kg – 5 kg	1 kg – 5 kg	1 kg – 10 kg
	F1	10 g – 100 g	10 g – 100 g	100 g – 1 kg	100 g – 1 kg	200 g – 2 kg	1 kg – 5 kg	1 kg – 5 kg	1 kg – 10 kg
	F2	10 g – 100 g	10 g – 100 g	100 g – 1 kg	100 g – 1 kg	200 g – 2 kg	1 kg – 5 kg	1 kg – 5 kg	1 kg – 10 kg
	M1	–	–	–	–	–	–	–	–
	M2	–	–	–	–	–	–	–	–
Max capacity [Max]		106 g	110 g	1.02 kg	1.02 kg	2.02 kg	5.05 kg	5.05 kg	10.02 kg
Readability [d]		0.1 µg	1 µg	5 µg	1 µg	10 µg	10 µg	100 µg	10 µg
Standard repeatability [5% Max]*		0.8 µg	1.5 µg	8 µg	1.7 µg	12 µg	15 µg	80 µg	15 µg
Standard repeatability [Max]*		0.8 µg	2 µg	15 µg	2 µg	15 µg	20 µg	0.1 mg	20 µg

** Standard deviation of 6 ABBA cycles (acc. to R111 OIML) for maximal mass being subjected to comparison when stable laboratory conditions are maintained.*

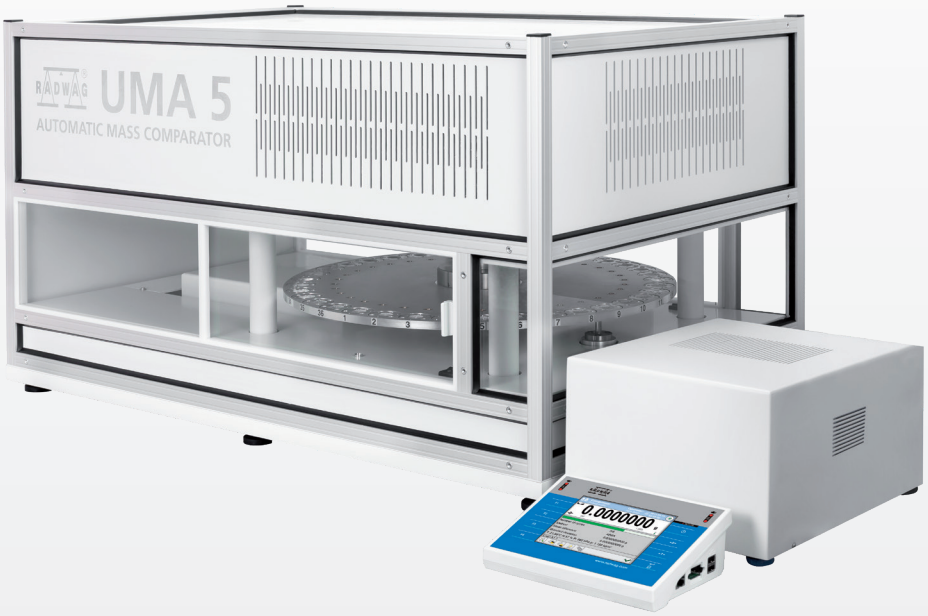
Automatic Mass Comparators
UMA

Mass comparators of UMA series stand for the highest standard of professional automatic mass comparators. They provide comparison of 1 mg – 1000 g weights of E1 and lower classes.

The device is equipped with 18 or 36 magazine positions allowing to deposit up to 36 weights. This solution allows to perform either comparison for complete set of weights carried out within one process or comparison for just a few weights of the same mass.

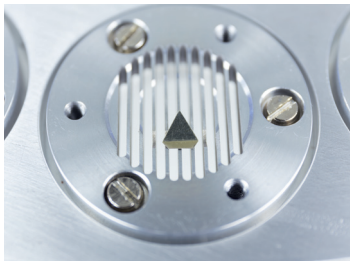
Owing to elimination of human factor and with temperature changes and air drafts reduced to zero, UMA automatic mass comparators provide the highest possible measurement repeatability.

The UMA series, thanks to a vibration sensor inside the electronics, analyses and recognises vibrations origin. The sensor allows to determine whether the vibrations come from ground or other sources affecting the measurement result.

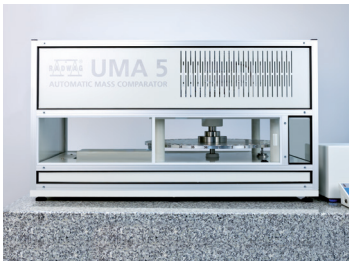


The weighing pan has been designed to enable measurement of very small samples with very high precision. This also secures a weight against wedging.

User-friendly and functional software guides you through preparation process of complete calibration plan within just a few minutes.



Comparison can be carried out for weights of all shapes with use of just one universal weighing pan.



Compact size guarantees operation of the device at any laboratory workstation. Possibility of comparison of many weights at a time adds to comparator's versatility.

		UMA-5	UMA-100	UMA-1000
Calibration range	E1	1 mg – 5 g	1 g – 100 g	100 g – 1000 g
	E2	1 mg – 5 g	1 g – 100 g	10 g – 1000 g
	F1	1 mg – 5 g	1 g – 100 g	10 g – 1000 g
	F2	1 mg – 5 g	1 g – 100 g	10 g – 1000 g
	M1	–	–	–
	M2	–	–	–
Max capacity [Max]		5.1 g	110 g	1100 g
Readability [d]		0.1 µg	1 µg	5 µg
Standard repeatability [5% Max]*		0.2 µg	1.5 µg	8 µg
Standard repeatability [Max]*		0.4 µg	2 µg	12 µg

** Standard deviation of 6 ABBA cycles (acc. to R111 OIML) for maximal mass being subjected to comparison when stable laboratory conditions are maintained.*

Manual
Mass Comparators

COMPARISON OF 1 mg – 5 g WEIGHTS
OF CLASS E1, E2, F1, F2, M1 AND M2

Manual Mass Comparators
UYA 4Y.KO

Mass comparators of UYA 4Y.KO series stand for high standard of professional manual mass comparators. They provide comparison of 1 mg – 5 g weights of E1 and lower classes.

The UYA 4Y.KO series is characteristic for 0.1 µg readability. Significant feature of UYA 4Y.KO comparator is the automatically opened transparent weighing chamber providing maximum resistance to air drafts.

A supplementary external anti-draft chamber comes standard with each UYA 4Y.KO comparator.

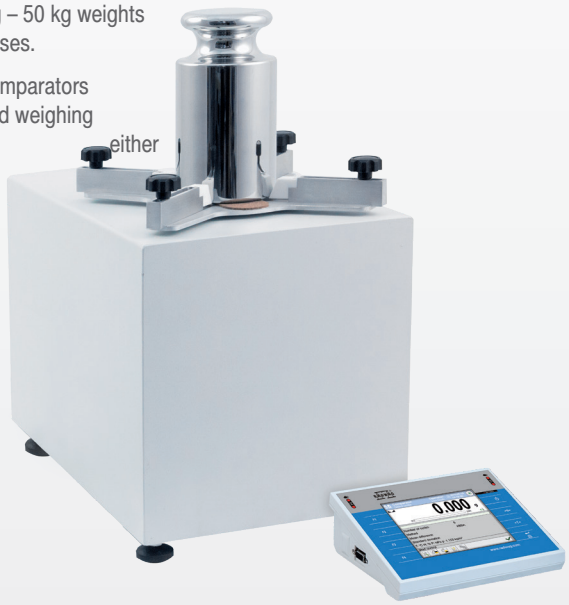
COMPARISON OF 100 g – 50 kg WEIGHTS
OF CLASS E1, E2, F1, F2, M1 AND M2

Manual Mass Comparators
APP 4Y.KO

Mass comparators of APP 4Y.KO series stand for high standard of professional manual mass comparators. They provide comparison of 100 g – 50 kg weights of E1 and lower classes.

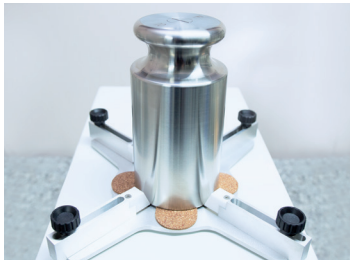
APP 4Y.KO mass comparators feature model-related weighing pan type, it is either self-centering pan or weighing pan with mechanical centering aid, the former one allowing for dissemination of weights.

A supplementary external anti-draft chamber comes standard with each APP 4Y.KO comparator.



Automatically opened transparent weighing chamber of UYA 4Y.KO mass comparator provides utmost visibility of the weight subjected to comparison.

Complex databases offer unlimited access to information on mass standards, customers and tasks along with preview of reports on carried out comparisons.



Weighing pan with mechanical centering system facilitates precise placing of mass standards, plus it reduces effect of eccentricity to zero.

Optional “floating” self-centering pan offers reduction of eccentricity effect, plus it supports dissemination of reference mass to more than one weight.

		UYA 5.4Y.KO	APP 10.4Y.KO	APP 30.4Y.KO	APP 64.4Y.KO	APP 64.1.4Y.KO
Calibration range	E1	1 mg – 5 g	5 kg – 10 kg	20 kg	–	–
	E2	1 mg – 5 g	1 kg – 10 kg	10 kg – 20 kg	50 kg	20 kg – 50 kg
	F1	1 mg – 5 g	500 g – 10 kg	5 kg – 20 kg	20 kg – 50 kg	5 kg – 50 kg
	F2	1 mg – 5 g	100 g – 10 kg	1 kg – 20 kg	5 kg – 50 kg	2 kg – 50 kg
	M1	1 mg – 5 g	100 g – 10 kg	1 kg – 20 kg	1 kg – 50 kg	1 kg – 50 kg
	M2	1 mg – 5 g	100 g – 10 kg	1 kg – 20 kg	1 kg – 50 kg	200 g – 50 kg
Max capacity [Max]		5.1 g	10.2 kg	30.5 kg	64 kg	64 kg
Readability [d]		0.1 µg	0.1 mg	1 mg	10 mg	5 mg
Standard repeatability [5% Max]*		0.2 µg	0.35 mg	3 mg	13 mg	5 mg
Standard repeatability [Max]*		0.4 µg	0.4 mg	3 mg	18 mg	8 mg

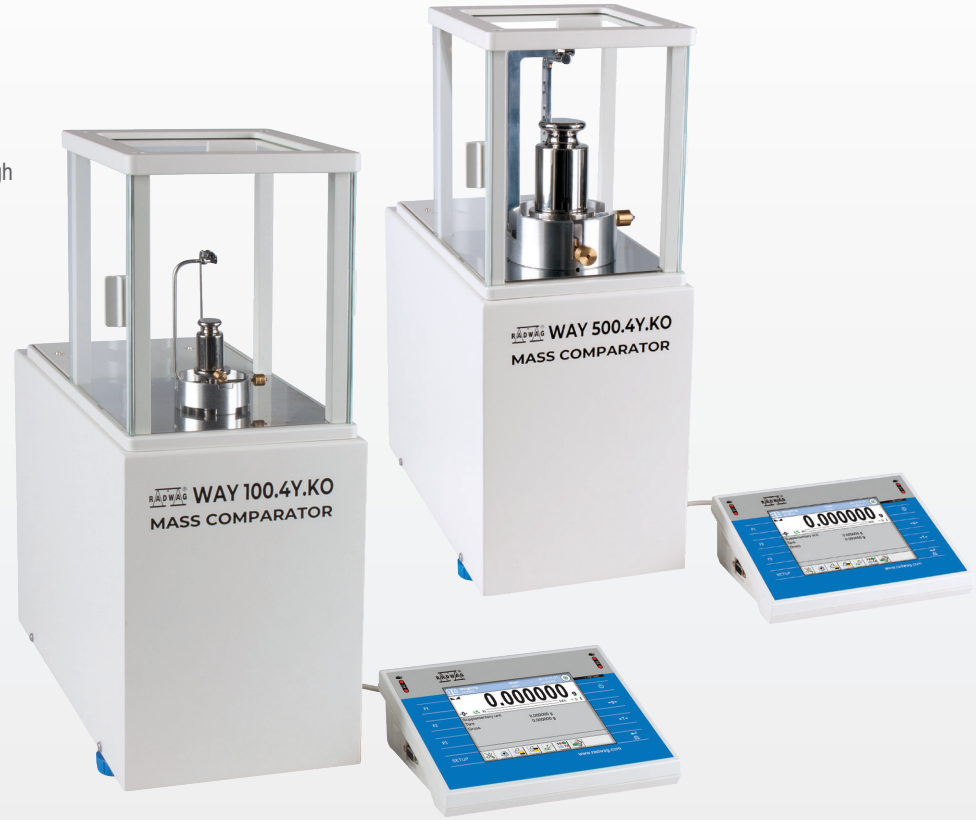
** Standard deviation of 6 ABBA cycles (acc. to R111 OIML) for maximal mass being subjected to comparison when stable laboratory conditions are maintained.*

Manual Mass Comparators
WAY 4Y.KO

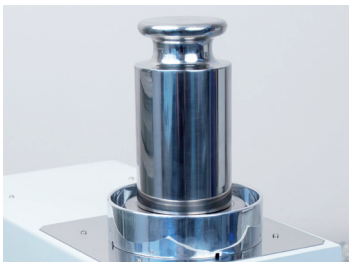
Mass comparators of WAY 4Y.KO series stand for high standard of professional manual mass comparators. They provide comparison of 1 mg – 5 kg weights of E1 and lower classes.

WAY 4Y.KO mass comparators feature transparent weighing chamber and ring-shaped draft shield encircling the weighing pan. Models characterized with the highest accuracy additionally comprise an internal box-shaped draft shield made of glass.

A supplementary external anti-draft chamber comes standard with each WAY 4Y.KO comparator*.

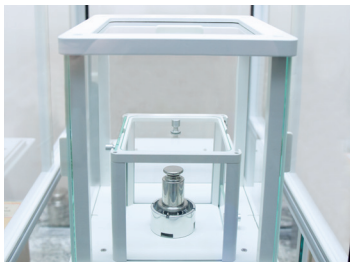


** Not applicable to WAY 1200.4Y.KO comparator.*

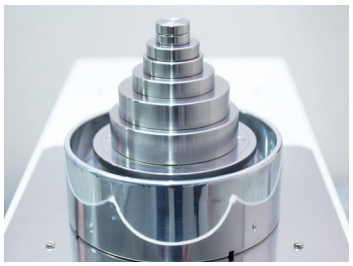


Ring-shaped draft shield encircling the weighing pan, apart from protecting the pan against air drafts, prevents potential shocks that could be applied accidentally to the weighing pan while loading the weight.

Weighing pan, made of the best quality non-magnetic stainless steel, features centrically positioned markings allowing easy and precise weights placement.



Glass draft shield minimizes influence of air drafts on comparison process. The glass with special conductive coating supports discharge of static electricity.



Selected WAY 4Y.KO models allow use of supplementary external loads, with this it is possible to carry out comparison of non-standard weights.

		WAY 100.4Y.KO	WAY 200.4Y.KO	WAY 500.4Y.KO	WAY 1.4Y.KO	WAY 2.4Y.KO	WAY 5.4Y.KO	WAY 1200.4Y.KO	WAY 5100.4Y.KO
Calibration range	E1	5 g – 100 g	5 g – 200 g	200 g – 500 g	500 g – 1 kg	1 kg – 2 kg	2 kg – 5 kg	–	–
	E2	100 mg – 100 g	100 mg – 200 g	10 g – 500 g	100 g – 1 kg	500 g – 2 kg	500 g – 5 kg	500 g – 1 kg	–
	F1	1 mg – 100 g	1 mg – 200 g	1 g – 500 g	10 g – 1 kg	100 g – 2 kg	100 g – 5 kg	100 g – 1 kg	5 kg
	F2	1 mg – 100 g	1 mg – 200 g	1 g – 500 g	1 g – 1 kg	10 g – 2 kg	10 g – 5 kg	5 g – 1 kg	2 kg – 5 kg
	M1	1 mg – 100 g	1 mg – 200 g	1 g – 500 g	1 g – 1 kg	1 g – 2 kg	1 g – 5 kg	1 g – 1 kg	500 g – 5 kg
	M2	1 mg – 100 g	1 mg – 200 g	1 g – 500 g	1 g – 1 kg	1 g – 2 kg	1 g – 5 kg	1 g – 1 kg	200 g – 5 kg
Max capacity [Max]		110 g	210 g	520 g	1.02 kg	2.3 kg	5.05 kg	1.2 kg	5.1 kg
Readability [d]		0.001 mg	0.001 mg	0.01 mg	0.01 mg	0.1 mg	0.1 mg	0.1 mg	1 mg
Standard repeatability [5% Max]*		0.0025 mg	0.003 mg	0.012 mg	0.025 mg	0.08 mg	0.15 mg	0.08 mg	0.8 mg
Standard repeatability [Max]*		0.003 mg	0.004 mg	0.02 mg	0.03 mg	0.1 mg	0.2 mg	0.1 mg	1 mg

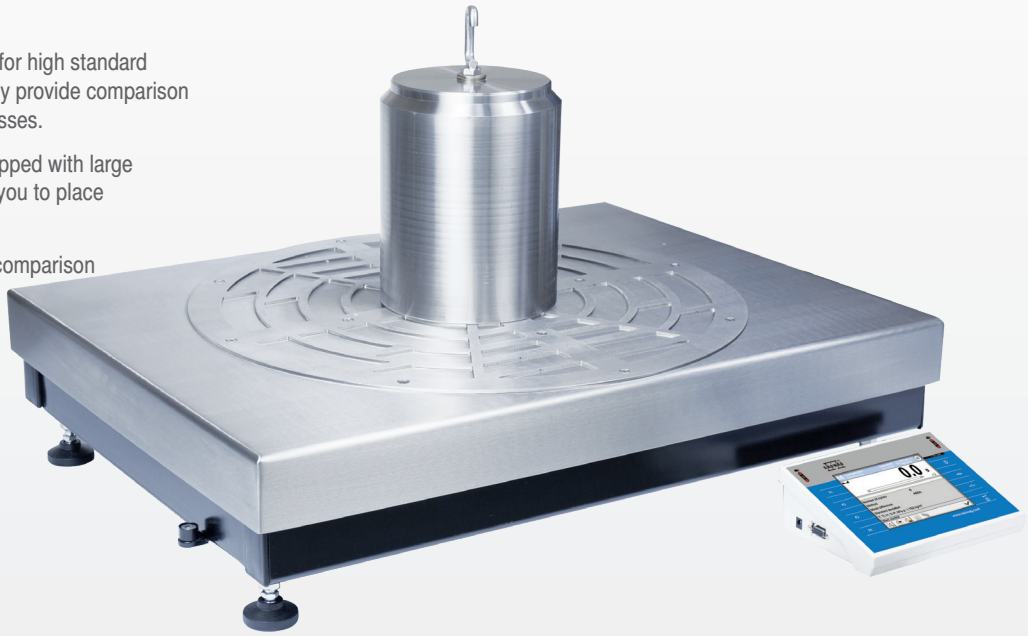
** Standard deviation of 6 ABBA cycles (acc. to R111 OIML) for maximal mass being subjected to comparison when stable laboratory conditions are maintained.*

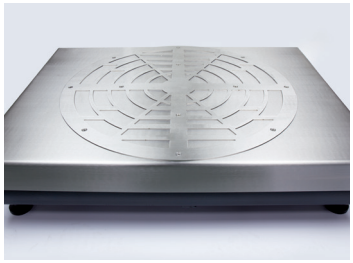
Manual Mass Comparators
HRP 4Y.KO

Mass comparators of HRP 4Y.KO series stand for high standard of professional manual mass comparators. They provide comparison of 10 kg – 2000 kg weights of F2 and lower classes.

HRP 4Y.KO mass comparators have been equipped with large weighing platform featuring markings allowing you to place the weights centrically and precisely.

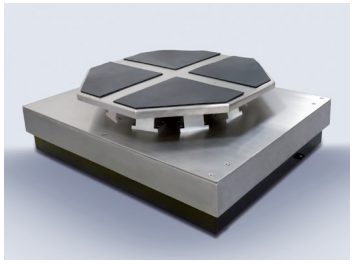
HRP 4Y.KO mass comparators serve not only comparison purposes, they can be used for weighing processes and other related operations.



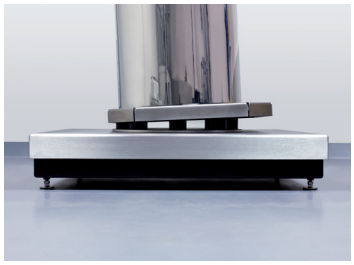


Precisely marked weighing platform of HRP 4Y.KO comparator is of great help when trying to place the weight accurately in the center.

Colour 5.7" touchscreen comes standard with all RADWAG manufactured comparators.



HRP mass comparators have been equipped with special self-centering weighing pan to provide both greater comfort of operation and reduced off-center load error.



The self-centering weighing pan has been designed in order to enable stabilising and levelling of weights that are put off the center, plus to allow comparison of weights of atypical shape.

		HRP 200.4Y.KO	HRP 500.4Y.KO	HRP 500.1.4Y.KO	HRP 1000.4Y.KO	HRP 2000.4Y.KO	HRP 2000.1.4Y.KO
Calibration range	E1	–	–	–	–	–	–
	E2	–	–	–	–	–	–
	F1	–	–	500 kg	–	–	–
	F2	200 kg	500 kg	100 kg – 500 kg	1000 kg	2000 kg	–
	M1	50 kg – 200 kg	100 kg – 500 kg	20 kg – 500 kg	200 kg – 1000 kg	500 kg – 2000 kg	500 kg – 2000 kg
	M2	10 kg – 200 kg	50 kg – 500 kg	10 kg – 500 kg	100 kg – 1000 kg	200 kg – 2000 kg	500 kg – 2000 kg
Max capacity [Max]		210 kg	510 kg	510 kg	1050 kg	2100 kg	2100 kg
Readability [d]		0.2 g	0.5 g	0.1 g	1 g	2 g	5 g
Standard repeatability [5% Max]*		0.4 g	0.6 g	0.2 g	1.5 g	2.5 g	5 g
Standard repeatability [Max]*		0.6 g	1.5 g	0.4 g	2.5 g	5 g	10 g

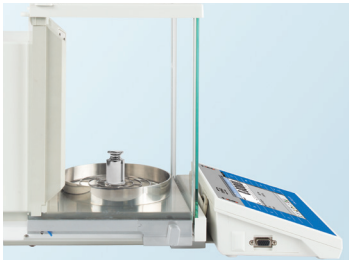
** Standard deviation of 6 ABBA cycles (acc. to R111 OIML) for maximal mass being subjected to comparison when stable laboratory conditions are maintained.*

Manual Mass Comparators
XA 4Y.A.KO

Mass comparators of XA 4Y.A.KO series are standard manual mass comparators. They provide comparison of 1 mg – 200 g weights of E1 and lower classes.

XA 4Y.A.KO mass comparators have been equipped with transparent weighing chamber featuring automatically opened door.

XA 4Y.A.KO mass comparators serve not only comparison purposes, they can be used for weighing processes and other related operations that are typical for standard analytical balances of XA 4Y.A series.



Spacious and airtight weighing chamber of XA 4Y.A.KO mass comparator features automatically opened door.

Openwork weighing pan significantly reduces ambient conditions influence on the measurement.

Transparent weighing chamber of PS 4Y.KB mass comparator, protecting the weighing pan, provides utmost visibility of the tested weight.

Semi-automatic levelling system is a standard feature of each 4Y series mass comparator.

		XA 6.4Y.A.KO	XA 21.4Y.A.KO	XA 52.4Y.A.KO	XA 200.4Y.A.KO
Calibration range	E1	100 mg – 5 g	500 mg – 20 g	50 g	200 g
	E2	1 mg – 5 g	1 mg – 20 g	100 mg – 50 g	50 g – 200 g
	F1	1 mg – 5 g	1 mg – 20 g	1 mg – 50 g	50 mg – 200 g
	F2	1 mg – 5 g	1 mg – 20 g	1 mg – 50 g	1 mg – 200 g
	M1	1 mg – 5 g	1 mg – 20 g	1 mg – 50 g	1 mg – 200 g
	M2	1 mg – 5 g	1 mg – 20 g	1 mg – 50 g	1 mg – 200 g
Max capacity [Max]		6 g	21 g	52 g	210 g
Readability [d]		0.001 mg	0.001 mg	0.005 mg	0.01 mg
Standard repeatability [5% Max]*		0.0012 mg	0.0012 mg	0.0025 mg	0.005 mg
Standard repeatability [Max]*		0.002 mg	0.003 mg	0.006 mg	0.025 mg

** Standard deviation of 6 ABBA cycles (acc. to R111 OIML) for maximal mass being subjected to comparison when stable laboratory conditions are maintained.*

COMPARISON OF 1 kg – 50 kg WEIGHTS
OF CLASS F2, M1 AND M2

Manual Mass Comparators
PM 4Y.KB

Mass comparators of PM 4Y.KB series are standard manual mass comparators. They provide comparison of 1 kg – 50 kg weights of F2 and lower classes.

PM 4Y.KB mass comparators have been equipped with an open-work weighing pan featuring centering holders that facilitate precise weights placement.

PM 4Y.KB mass comparators serve not only comparison purposes, they can be used for weighing processes and other related operations that are typical for standard precision balances of PM 4Y series.

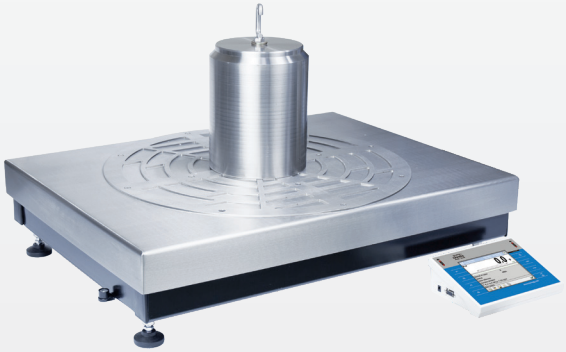
COMPARISON OF 200 kg – 1000 kg WEIGHTS
OF CLASS M1 AND M2

Manual Mass Comparators
HRP 4Y.KB

Mass comparators of HRP 4Y.KB series stand for high standard of professional manual mass comparators. They provide comparison of 200 kg – 1000 kg weights of M1 and lower classes.

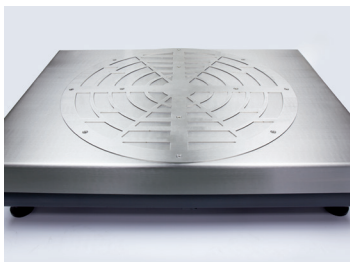
HRP 4Y.KB mass comparators have been equipped with large weighing platform featuring markings allowing you to place the weights centrically and precisely.

HRP 4Y.KB mass comparators serve not only comparison purposes, they can be used for weighing processes and other related operations.



Centering holders of the openwork weighing pan allow precise placement of the weights, it is especially helpful when working with heavy and large mass standards.

Dedicated box for PM 4Y.KB mass comparator is a warranty for safe transport. With in-built interfaces you have a green light for immediate operation right after opening the box.



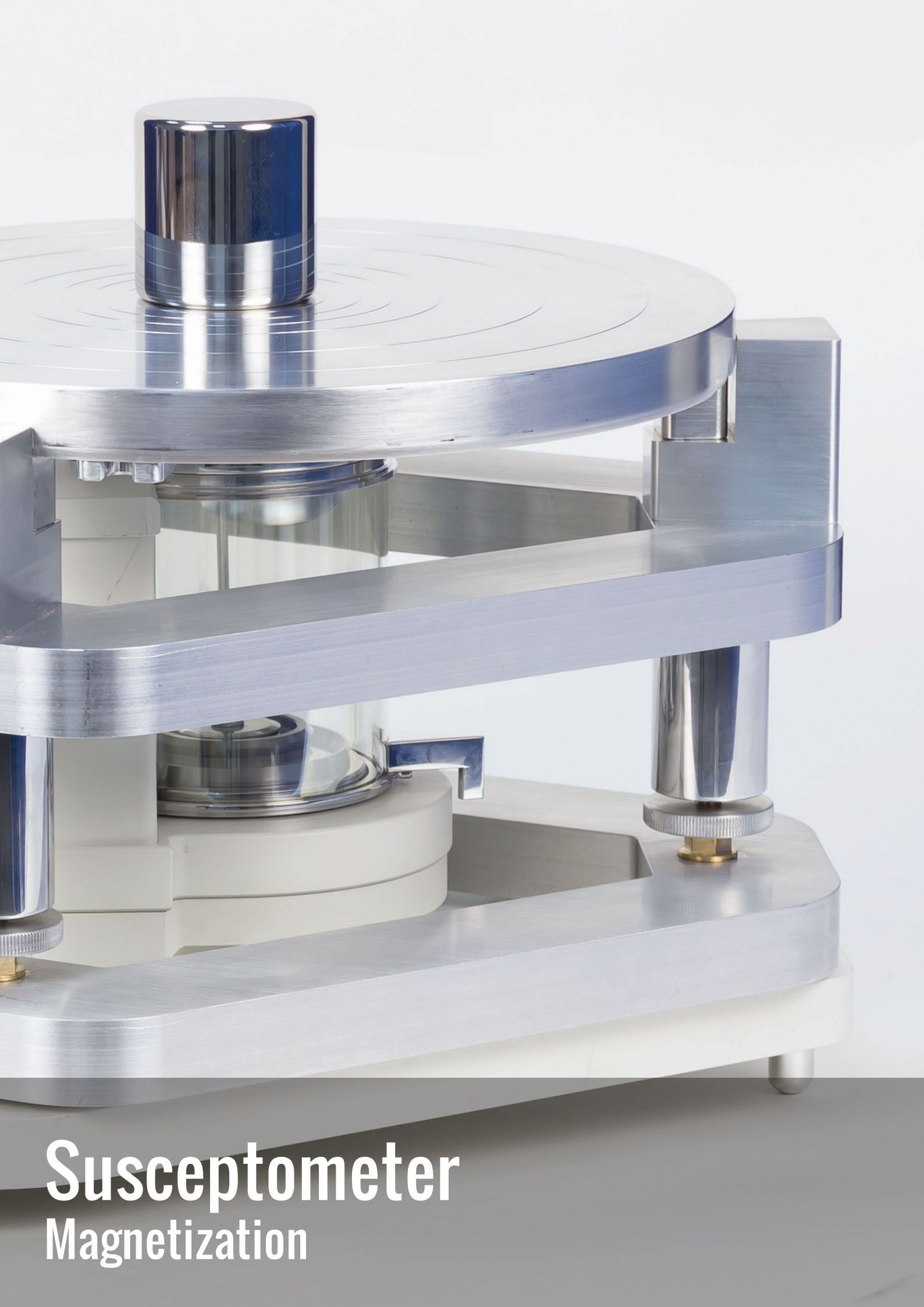
Precisely marked weighing platform of HRP 4Y.KB comparator is of great help when trying to place the weight accurately in the center.

Colour 5.7" touchscreen comes standard with all RADWAG manufactured comparators.

		PM 25.4Y.KB	PM 50.4Y.KB
Calibration range	E1	–	–
	E2	–	–
	F1	20 kg	–
	F2	5 kg – 20 kg	50 kg
	M1	2 kg – 20 kg	10 kg – 50 kg
	M2	1 kg – 20 kg	5 kg – 50 kg
Max capacity [Max]		25.5 kg	51 kg
Readability [d]		10 mg	100 mg
Standard repeatability [5% Max]*		8 mg	70 mg
Standard repeatability [Max]*		15 mg	100 mg

		HRP 1000.4Y.KB
Calibration range	E1	–
	E2	–
	F1	–
	F2	–
	M1	1000 kg
	M2	200 kg – 1000 kg
Max capacity [Max]		1050 kg
Readability [d]		10 g
Standard repeatability [5% Max]*		6 g
Standard repeatability [Max]*		10 g

** Standard deviation of 6 ABBA cycles (acc. to R111 OIML) for maximal mass being subjected to comparison when stable laboratory conditions are maintained.*



Susceptometer
Magnetization

Susceptometer

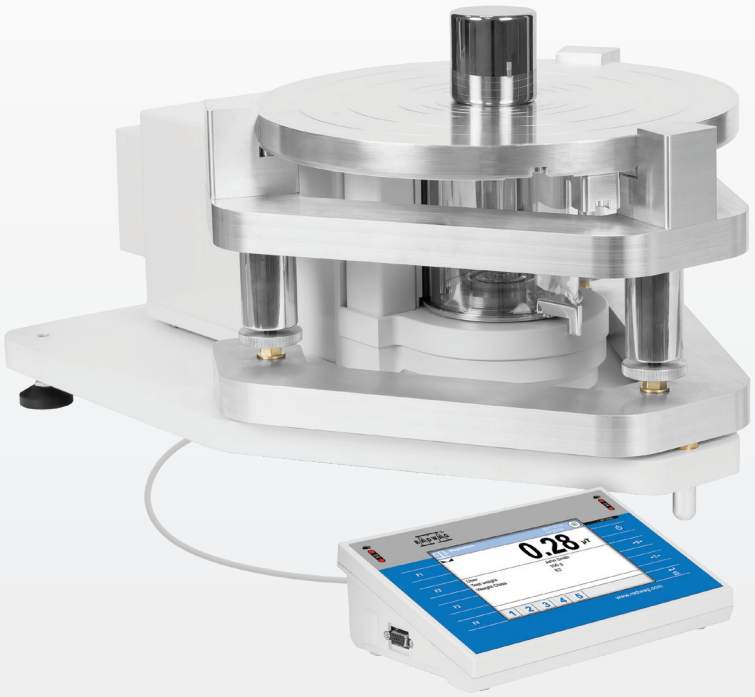
SM-UYA, SM-MYA

RADWAG-designed SM susceptometer enables determination of magnetic characteristics of mass standards of the following classes: E1, E2, F1 and F2. The device features 3 different heights, from the mass standard base to the centre of the magnet. The recommended distance between the mass standard and the magnet depends on the mass standard's class. The measurement result is magnetic susceptibility and polarisation, i.e. residual magnetism.

Modular design, upon disassembling respective module and depending on the model, enables using the susceptometer as a mass comparator or a balance.

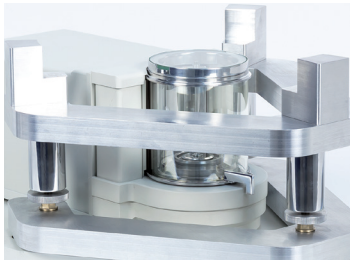
Innovative design of the susceptometer enables verification of magnetic characteristics of 2g-50kg mass standards.

With use of modern indicator with very efficient processor, the susceptometer does not require additional external devices supporting calculations. Indicator software calculates magnetic susceptibility and polarisation, which facilitates and accelerates mass standards testing. The software automatically verifies measurements compliance with OIML R111. Mass standard status can be read on the test report.



A top-class magnet guarantees repeatability.

Positioners on the susceptometer weighing pan facilitate centring of the mass standard.



The modular design enables to use the susceptometer as a microbalance or a mass comparator.

Specially designed susceptometer weighing pan does not require any additional elements to change the measuring range of the device.

		SM-UYA-5.4Y.KO	SM-UYA-3.4Y	SM-MYA-5.4Y	SM-MYA-11.4Y
Calibration range	E1	2 g – 50 kg	2 g – 50 kg	2 g – 50 kg	2 g – 50 kg
	E2	2 g – 50 kg	2 g – 50 kg	2 g – 50 kg	2 g – 50 kg
	F1	2 g – 50 kg	2 g – 50 kg	2 g – 50 kg	2 g – 50 kg
	F2	2 g – 50 kg	2 g – 50 kg	2 g – 50 kg	2 g – 50 kg
	M1	–	–	–	–
	M2	–	–	–	–
Max capacity [Max]		50 kg	50 kg	50 kg	50 kg
Readability [d]		0.1 µg	0.1 µg	1 µg	1 µg
Dipole moment of magnets		⩽ 0.1 Am^2	⩽ 0.1 Am^2	⩽ 0.1 Am^2	⩽ 0.1 Am^2
Distance platform Z0		20; 27; 43 mm	20; 27; 43 mm	20; 27; 43 mm	20; 27; 43 mm
Magnetizing field strenght		2000, 800, 200 A/m	2000, 800, 200 A/m	2000, 800, 200 A/m	2000, 800, 200 A/m

PC Software
RMCS

Radwag Multiple Comparator Software, RMCS, has been designed to enable management of laboratory-performed calibration procedures, starting from the moment of accepting an order, through its progress, until issuing a calibration certificate.

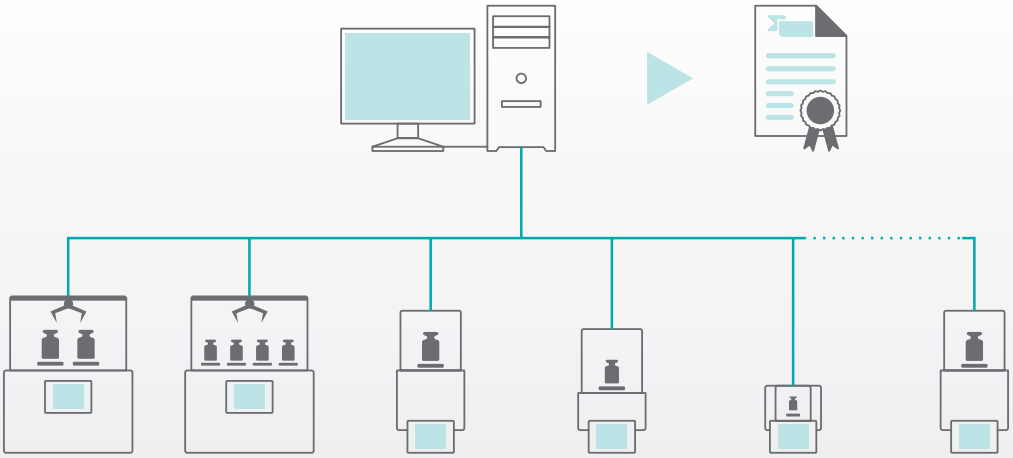
The calibration process supported by means of RMCS provides improved efficiency, reliable measurement results and complete documentation on calibration process, together with lower labour costs.

RMCS PC Software is intended for cooperation with RADWAG manufactured mass comparators. With the software you can carry out calibration processes using ABBA and ABA methods.

Radwag Multiple Comparator Software – operation scheme

RMCS PC software makes it possible to initiate the calibration procedure by means of task sent to a particular mass comparator. Additionally it features option for autonomous performance of calibration process, triggered by the mass comparator itself.

In both cases, data is transferred to the software for the purpose of registering, controlling and finally issuing a calibration certificate.



RMCS System functions

- Complete management of a calibration laboratory calibrating mass standards and weights
- Complex management of RADWAG comparators
- Calibration using ABBA and ABA methods
- Cooperation with monitoring system for ambient conditions
- Databases support: comparators, mass standards, users and calibration orders
- Bilateral data synchronization with RADWAG mass comparators
- Archiving orders, calibration certificates and ambient conditions records
- Record of events and calibration process reporting
- Export of report results and calibration certificates

Mass comparators linked in the RMCS system autonomously cooperate with THB ambient conditions modules recording ambient conditions state (temperature, humidity and atmospheric pressure) throughout the whole control process.

Measurement results are displayed and sent, in real time, to RMCS software for the purpose of process control and data archiving.

Ambient Conditions Monitoring

THB

Maintaining optimal ambient conditions at a workplace is a warranty of precise results for comparison processes.

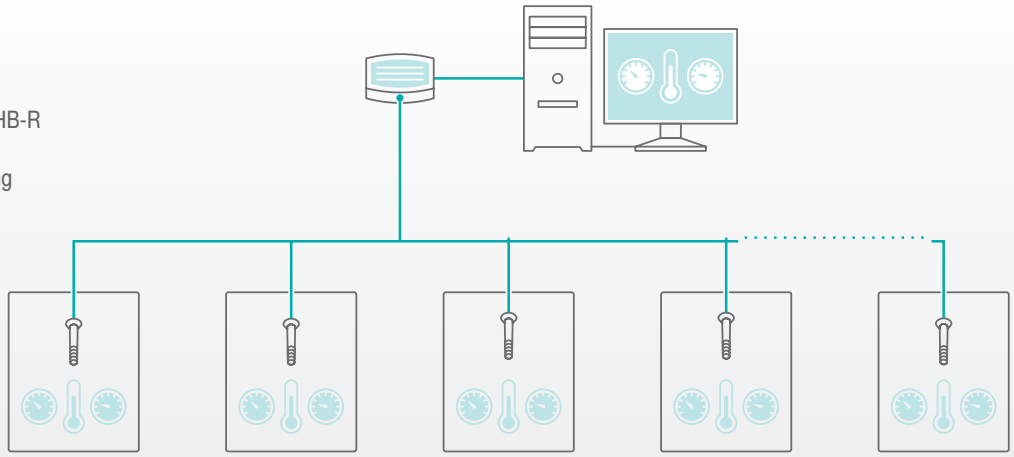
THB monitoring system has been designed to offer option of constant ambient conditions supervision provided at the place of mass comparator operation or in any laboratory room. The system performs real-time measurement of air temperature, relative humidity and atmospheric pressure. The measured values are then used for calculation of air density and dew point temperature.

The measurements carried out for a particular workstation are performed by means of its local sensors – THB Ambient Conditions Modules. Current state of given measurements is displayed on the comparators terminal along with messages informing on critical values, all this thanks to connection established between the THB module and the comparator.

Ambient Conditions Monitoring performed for separate laboratory rooms - operation scheme

Measurements results of particular THB modules are transferred in real time to THB-R recorder. The recorder supports up to 16 modular sensors, thus allowing monitoring of ambient conditions in multiple points in the proximity of up to 1200 m.

THB-Multi software enables displaying the measurements results on the computer screen. Additionally it offers data analysis, reports and graphs preparation and measurements record in database.



Basic parameters for THB Ambient Conditions Modules

Measured temperature range	+5 °C – +45 °C
Temperature measurement accuracy	d = 0.01 °C / error ± 0.1 °C
Measured pressure range	850 – 1050 hPa
Pressure measurement accuracy	d = 0.1 hPa / error ± 2 hPa
Measured humidity range	0 – 100 %
Humidity measurement accuracy	d = 0.1 % / error ± 2 % (from 0 % to 10 % and from 90 % to 100 % the accuracy is 5 %)

Errors for weights
according to OIML and ASTM

According to OIML and ASTM guidelines mass standards and weights, used for mass measurement purposes, are divided into accuracy classes: E1, E2, F1, F2, M1, M2 and M3 (OIML classification) or 1 – 7 (ASTM classification).

In the course of calibration of mass standards and weights the measurement uncertainty for coverage factor k = 2 (with confidence of about 95%) shall not be greater than 1/3 of maximum error value specified for a particular mass standard or weight of a given class or nominal value.

Maximum permissible errors according to OIML R 111-1

±δm in mg

Nominal value	Class E1	Class E2	Class F1	Class F2	Class M1	Class M1–2	Class M2	Class M2–3	Class M3
1 mg	0.003	0.006	0.02	0.06	0.2				
2 mg	0.003	0.006	0.02	0.06	0.2				
5 mg	0.003	0.006	0.02	0.06	0.2				
10 mg	0.003	0.008	0.025	0.08	0.25				
20 mg	0.003	0.01	0.03	0.1	0.3				
50 mg	0.004	0.012	0.04	0.12	0.4				
100 mg	0.005	0.016	0.05	0.16	0.5		1.6		
200 mg	0.006	0.02	0.06	0.2	0.6		2		
500 mg	0.008	0.025	0.08	0.25	0.8		2.5		
1 g	0.01	0.03	0.1	0.3	1		3		10
2 g	0.012	0.04	0.12	0.4	1.2		4		12
5 g	0.016	0.05	0.16	0.5	1.6		5		16
10 g	0.02	0.06	0.2	0.6	2		6		20
20 g	0.025	0.08	0.25	0.8	2.5		8		25
50 g	0.03	0.1	0.3	1	3		10		30
100 g	0.05	0.16	0.5	1.6	5		16		50
200 g	0.1	0.3	1	3	10		30		100
500 g	0.25	0.8	2.5	8	25		80		250
1 kg	0.5	1.6	5	16	50		160		500
2 kg	1	3	10	30	100		300		1 000
5 kg	2.5	8	25	80	250		800		2 500
10 kg	5	16	50	160	500		1 600		5 000
20 kg	10	30	100	300	1 000		3 000		10 000
50 kg	25	80	250	800	2 500	5 000	8 000	16 000	25 000
100 kg		160	500	1 600	5 000	10 000	16 000	30 000	50 000
200 kg		300	1 000	3 000	10 000	20 000	30 000	60 000	100 000
500 kg		800	2 500	8 000	25 000	50 000	80 000	160 000	250 000
1 000 kg		1 600	5 000	16 000	50 000	100 000	160 000	300 000	500 000
2 000 kg			10 000	30 000	100 000	200 000	300 000	600 000	1 000 000
5 000 kg			25 000	80 000	250 000	500 000	800 000	1 600 000	2 500 000

Maximum permissible errors according to ASTM E617 - 13

±δm in mg

Nominal value	Class 000	Class 00	Class 0	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7
0.05 mg	0.002	0.003	0.005							
0.1 mg	0.002	0.003	0.005	0.01						
0.2 mg	0.002	0.003	0.005	0.01	0.014					
0.3 mg	0.002	0.003	0.005	0.01	0.014	0.025				
0.5 mg	0.002	0.003	0.005	0.01	0.014	0.025	0.05	0.05	0.1	
1 mg	0.002	0.003	0.005	0.01	0.014	0.025	0.05	0.05	0.1	
2 mg	0.002	0.003	0.005	0.01	0.014	0.025	0.05	0.06	0.2	
3 mg	0.002	0.003	0.005	0.01	0.014	0.026	0.052	0.07	0.2	
5 mg	0.002	0.003	0.005	0.01	0.014	0.028	0.055	0.08	0.2	
10 mg	0.002	0.003	0.005	0.01	0.014	0.03	0.06	0.1	0.5	0.4
20 mg	0.002	0.003	0.005	0.01	0.014	0.035	0.07	0.12	0.5	0.56
30 mg	0.002	0.003	0.005	0.01	0.014	0.038	0.075	0.14	0.5	0.68
50 mg	0.002	0.003	0.005	0.01	0.014	0.042	0.085	0.16	0.5	0.88
100 mg	0.002	0.003	0.005	0.01	0.025	0.05	0.1	0.2	1	1.2
200 mg	0.002	0.003	0.005	0.01	0.025	0.06	0.12	0.26	1	1.8
300 mg	0.002	0.003	0.005	0.01	0.025	0.07	0.14	0.3	1	2.2
500 mg	0.002	0.003	0.005	0.01	0.025	0.08	0.16	0.38	1	3
1 g	0.005	0.01	0.017	0.034	0.054	0.1	0.2	0.5	2	4.5
2 g	0.005	0.01	0.017	0.034	0.054	0.13	0.26	0.75	2	7
3 g	0.005	0.01	0.017	0.034	0.054	0.15	0.3	0.95	2	9.4
5 g	0.005	0.01	0.017	0.034	0.054	0.18	0.36	1.3	2	13
10 g	0.01	0.02	0.025	0.050	0.074	0.25	0.5	2	2	21
20 g	0.013	0.025	0.037	0.074	0.1	0.35	0.7	3	3	33
30 g	0.014	0.026	0.037	0.074	0.15	0.45	0.9	4	5	44
50 g	0.015	0.03	0.06	0.12	0.25	0.6	1.2	5.6	7	62
100 g	0.025	0.05	0.13	0.25	0.5	1	2	9	10	100
200 g	0.05	0.1	0.25	0.50	1	2	4	15	20	160
300 g	0.075	0.15	0.38	0.75	1.5	3	6	20	30	210
500 g	0.13	0.25	0.6	1.2	2.5	5	10	30	50	300
1 kg	0.25	0.50	1.3	2.5	5	10	20	50	100	470
2 kg	0.5	1	2.5	5	10	20	40	100	200	750
3 kg	0.75	1.5	3.8	7.5	15	30	60	150	300	1 000
5 kg	1.3	2.5	6	12	25	50	100	250	500	1 400
10 kg	2.5	5	13	25	50	100	200	500	1 000	2 200
20 kg	5	10	25	50	100	200	400	1 000	2 000	3 800
25 kg	6.25	12.5	31	62	125	250	500	1 200	2 500	4 500
30 kg	7.5	15	38	75	150	300	600	1 500	3 000	4 500
50 kg	13	25	63	125	250	500	1 000	2 500	5 000	7 500
100 kg					500	1 000	2 000	5 000	10 000	15 000
200 kg					1000	2 000	4 000	10 000	20 000	30 000
300 kg					1500	3 000	6 000	15 000	30 000	45 000
500 kg					2 500	5 000	10 000	25 000	50 000	75 000
1 000 kg					5 000	10 000	20 000	50 000	100 000	150 000
2 000 kg					10 000	20 000	40 000	100 000	200 000	300 000
3 000 kg					15 000	30 000	60 000	150 000	300 000	450 000
5 000 kg					25 000	50 000	100 000	250 000	500 000	750 000

		NANO.AK-4/500	AVK-1000	AGV-8/1000	AGV-2/20	RMCM 5	RMCM 100
Calibration range	E1	0.05 mg – 500 mg	100 g – 1 kg	1 g – 1000 g	1 kg – 20 kg	1 mg – 5 g	1 g – 100 g
	E2	0.05 mg – 500 mg	100 g – 1 kg	–	1 kg – 20 kg	1 mg – 5 g	1 g – 100 g
	F1	0.05 mg – 500 mg	100 g – 1 kg	–	1 kg – 20 kg	1 mg – 5 g	1 g – 100 g
	F2	0.05 mg – 500 mg	100 g – 1 kg	–	1 kg – 20 kg	1 mg – 5 g	1 g – 100 g
	M1	–	–	–	–	–	–
	M2	–	–	–	–	–	–
Max capacity [Max]		510 mg	1002 g	1110 g	26.1 kg	5.1 g	110 g
Readability [d]		10 ng	0.1 µg	0.01 mg	1 mg	0.1 µg	1 µg
Repeatability at low load [S]*		0.04 µg	0.4 µg	0.04 mg	2 mg	0.25 µg	1.5 µg
Repeatability at nominal load [S]*		0.06 µg	0.5 µg	0.05 mg	3 mg	0.4 µg	2 µg
Electric compensation range		0 – +510 mg	-1 g – +2 g	-10 g – +110 g	100 g – +26.1 kg	0 g – +5.1 g	-1 g – +10 g
Eccentricity (tested load)		0 mg					
Internal supplementary weights		–	automatic	automatic	half-automatic	half-automatic	half-automatic
Stabilization time		30 s	60 s	30 s	30 s	30 s	30 s
Adjustment		external	external	external	external	internal	internal
Power supply		100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz
Weighing pan size		Ø 20 mm	Ø 100 mm	Ø 60 mm	Ø 220 mm self centering	24 × 50 mm	24 × 63 mm
Weights magazine		4 positions	6 positions	8 positions	automatic 2 positions	120 positions	75 positions
Weighing unit size (L×W×H)		385 × 245 × 390 mm	965 × 745 × 1150 mm	690 × 710 × 1060 mm	385 × 215 × 600 mm	1750 × 1070 × 1800 mm	1750 × 1070 × 1800 mm
Control unit size (L×W×H)		460 × 250 × 195 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 ×140 × 70 mm	206 ×140 × 70 mm
Draft shield size (L×W×H)		–	–	–	560 × 340 × 665 mm	560 × 340 × 665 mm	560 × 340 × 665 mm
Net/gross weight		20 kg / 30 kg	250 kg / 280 kg	.... kg / .....kg	25 kg / 41 kg	25 kg / 41 kg	25 kg / 41 kg
Comparator packaging size (L×W×H)		860 × 750 × 570 mm	1200 × 1000 × 1200 mm	1200 × 1000 × 1300 mm	860 × 800 × 560 mm	860 × 800 × 560 mm	860 × 800 × 560 mm
Draft shield packaging size (L×W×H)		–	–	–	950 × 420 × 630 mm	950 × 420 × 630 mm	950 × 420 × 630 mm
Operating temperature		+15 – +30 °C	+15 – +30 °C	+15 – +30 °C	+15 – +30 °C	+15 – +30 °C	+15 – +30 °C
Operating temperature change rate		±0.5 °C / 12 h	±0.5 °C / 12 h	±0.5 °C / 12 h	±0.5 °C / 12 h	±0.5 °C / 12 h	±0.5 °C / 12 h
Relative humidity		40 % – 60 %	40 % – 60 %	40 % – 60 %	40 % – 60 %	40 % – 60 %	40 % – 60%
Relative humidity change		±5 % / 12 h	±5 % / 12 h	±5 % / 12 h	±5 % / 12 h	±2 % / 4 h	±2 % / 4 h

		AK-4/1000	AK-4/1001	AK-4/2000	AK-4/5000	AK-4/5000.1	AK-4/10000
Calibration range	E1	100 g – 1 kg	100 g – 1 kg	200 g – 2 kg	1 kg – 5 kg	1 kg – 5 kg	1 kg – 10 kg
	E2	100 g – 1 kg	100 g – 1 kg	200 g – 2 kg	1 kg – 5 kg	1 kg – 5 kg	1 kg – 10 kg
	F1	100 g – 1 kg	100 g – 1 kg	200 g – 2 kg	1 kg – 5 kg	1 kg – 5 kg	1 kg – 10 kg
	F2	100 g – 1 kg	100 g – 1 kg	200 g – 2 kg	1 kg – 5 kg	1 kg – 5 kg	1 kg – 10 kg
	M1	–	–	–	–	–	–
	M2	–	–	–	–	–	–
Max capacity [Max]		1.02 kg	1.02 kg	2.05 kg	5.05 kg	5.05 kg	10.05 kg
Readability [d]		0.005 mg	0.001 mg	0.01 mg	0.01 mg	0.1 mg	0.01 mg
Repeatability at low load [S]*		8 µg	1.7 µg	12 µg	15 µg	0.08 mg	15 µg
Repeatability at nominal load [S]*		15 µg	2 µg	15 µg	20 µg	0.1 mg	20 µg
Electric compensation range		-10 g – +20 g	1 g – +10 g	-10 g – +20 g	-10 g – +50 g	-10 g – +50 g	-10 g – +50 g
Eccentricity error		1 division per 1 mm	1 division per 1 mm	1 division per 1 mm	1 division per 1 mm	1 division per 1 mm	1.5 division per 1 mm
Internal supplementary weights		–	half-automatic	half-automatic	half-automatic	half-automatic	half-automatic
External supplementary weights		–	–	–	–	–	–
Stabilization time		30 s	30 s	30 s	30 s	30 s	30 s
Adjustment		external	external	external	external	external	external
Power supply		100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz
Weighing pan size		ø 50 mm	ø 50 mm	ø 75 mm	ø 75 mm	ø 75 mm	ø 100 mm
Weighing unit size (L×W×H)		370 × 160 × 175 mm	385 × 215 × 600 mm	385 × 215 × 600 mm	350 × 405 × 650 mm	350 × 405 × 650 mm	800 × 500 × 930 mm
Control unit size (L×W×H)		206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm
Draft shield size (L×W×H)		560 × 350 × 255 mm	560 × 340 × 665mm	560 × 340 × 665 mm	660 × 470 × 700 mm	660 × 470 × 700 mm	1000 × 900 × 685 mm
Net/gross weight		46.8 / 66.8 kg	25 kg / 41 kg	68 kg / 95 kg	70 kg / 97 kg	46 kg / 60.5 kg	90 kg / 140 kg
Comparator packaging size (L×W×H)		600 × 600 × 400 mm	760 × 860 × 560 mm	860 × 800 × 560 mm	1000 × 900 × 685 mm	1000 × 900 × 685 mm	1000 × 900 × 685 mm
Draft shield packaging size (L×W×H)		820 × 840 × 630 mm	950 × 420 × 630 mm	950 × 420 × 630 mm	930 × 750 × 1000 mm	930 × 750 × 1000 mm	1100 × 800 × 1150 mm
Operating temperature		+15 – +30 °C	+15 – +30 °C	+15 – +30 °C	+15 – +30 °C	+15 – +30 °C	+15 – +30 °C
Operating temperature change rate		±0.5 °C / 12 h	±0.5 °C / 12 h	±0.5 °C / 12 h	±0.5 °C / 12 h	±0.5 °C / 12 h	±0.5 °C / 12 h
Relative humidity		40 % – 80 %	40 % – 60 %	40 % – 60 %	40 % – 60 %	40 % – 60 %	40 % – 60 %
Relative humidity change		±2 % / 4 h	±3 % / 4 h	±3 % / 4 h	±3 % / 4 h	±3 % / 4 h	±5 % / 4 h

RMC 100.1	RMC 1000.1	UMA 5	UMA 100	UMA 1000	AK-4/100	AK-4/100.1
100 g – 1 kg	10 g – 1000 g	1 mg – 5 g	1 g – 100 g	100 g – 1000 g	10 g – 100 g	10 g – 100 g
100 g – 1 kg	10 g – 1000 g	1 mg – 5 g	1 g – 100 g	10 g – 1000 g	10 g – 100 g	10 g – 100 g
100 g – 1 kg	10 g – 1000 g	1 mg – 5 g	1 g – 100 g	10 g – 1000 g	10 g – 100 g	10 g – 100 g
100 g – 1 kg	10 g – 1000 g	1 mg – 5 g	1 g – 100 g	10 g – 1000 g	10 g – 100 g	10 g – 100 g
–	–	–	–	–	–	–
–	–	–	–	–	–	–
106 g	1060 g	5.1 g	110 g	1060 g	110 g	106 g
0.1 µg	1 µg	0.0001 mg	0.001 mg	0.005 mg	0.001 mg	0.1 µg
0.5 µg	1.2 µg	0.2 µg	1.5 µg	8 µg	1.5 µg	0.8 µg
0.8 µg	2 µg	0.4 µg	2 µg	12 µg	2 µg	0.8 µg
-1 g – +6 g	-1 g – +50 g	0 – +5.1 g	-1 g – +10 g	-10 g – +110 g	-1 g – +10 g	-1 g – +6 g
			0 mg			
half-automatic	half-automatic	–	automatic	automatic	half-automatic	half-automatic
30 s	30 s	30 s	30 s	30 s	30 s	30 s
external	external	internal	external	external	external	external
100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz
24 × 63 mm	50 × 125 mm	ø 20 mm	ø 20 mm	ø 50 mm	ø 24 mm	ø 24 mm
100 positions	36 positions	36 positions	36 positions	18 positions	4 positions	4 positions
1750 × 1070 × 1800 mm	1750 × 1070 × 1800 mm	950 × 590 × 540 mm	700 × 585 × 720 mm	700 × 585 × 820 mm	385 × 215 × 600 mm	385 × 215 × 600 mm
206 ×140 × 70 mm	206 × 140 × 70 mm	460 × 250 × 195 mm	460 × 250 × 195 mm	460 × 250 × 195 mm	206 × 140 × 70 mm	206 × 140 × 70 mm
560 × 340 × 665 mm	560 × 340 × 665 mm	–	–	–	560 × 340 × 665 mm	560 × 340 × 665 mm
25 kg / 41 kg	25 kg / 41 kg	55 kg / 75 kg	60 kg / 80 kg	70 kg / 90 kg	45,8 kg / 65,8 kg	45,8 kg / 65,8 kg
860 × 800 × 560 mm	860 × 800 × 560 mm	1200 × 800 × 950 mm	1200 × 1000 × 1200 mm	1200 × 1000 × 1300 mm	860 × 800 × 560 mm	860 × 800 × 560 mm
950 × 420 × 630 mm	950 × 420 × 630 mm	–	–	–	950 × 420 × 630 mm	950 × 420 × 630 mm
+15 – +30 °C	+15 – +30 °C	+15 – +30 °C	+15 – +30 °C	+15 – +30 °C	+15 – +30 °C	+15 – +30 °C
±0.5 °C / 12 h	±0.5 °C / 12 h	±0.5 °C / 12 h	±0.5 °C / 12 h	±0.5 °C / 12 h	±0.5 °C / 12 h	±0.5 °C / 12 h
40 % – 60 %	40 % – 60 %	40 % – 60 %	40 % – 60 %	40 % – 60 %	40 % – 60 %	40 % – 60 %
±2 % / 4 h	±2 % / 4 h	±2 % / 4 h	±2 % / 4 h	±2 % / 4 h	±2 % / 4 h	±2 % / 4 h

AKM-2/10	AKM-2/20	AKM-2/50	SM-UYA-5.4Y.KO	SM-UYA-3.4Y	SM-MYA-5.4Y	SM-MYA-11.4Y
2 kg – 10 kg	5 kg - 20 kg	20 kg – 50 kg	2 g – 50 kg	2 g – 50 kg	2 g – 50 kg	2 g – 50 kg
500 g – 10 kg	1 kg – 20 kg	5 kg – 50 kg	2 g – 50 kg	2 g – 50 kg	2 g – 50 kg	2 g – 50 kg
500 g – 10 kg	1 kg – 20 kg	5 kg – 50 kg	2 g – 50 kg	2 g – 50 kg	2 g – 50 kg	2 g – 50 kg
500 g – 10 kg	1 kg – 20 kg	5 kg – 50 kg	2 g – 50 kg	2 g – 50 kg	2 g – 50 kg	2 g – 50 kg
–	–	–	–	–	–	–
–	–	–	–	–	–	–
10.2 kg	20.5 kg	51 kg	50 kg	50 kg	50 kg	50 kg
0.1 mg	0.1 mg	1 mg	0.0001 mg	0.0001 mg	0.001 mg	0.001 mg
0.15 mg	0.3 mg	2.5 mg	–	–	–	–
0.2 mg	0.4 mg	3.5 mg	–	–	–	–
-100 g – +200 g	-500 g – +500 g	0 – +50.5 kg	–	–	–	–
2 divisions per 1 mm	2 divisions per 1 mm	2 divisions per 1 mm	–	–	–	–
half-automatic	half-automatic	–	–	–	–	–
–	–	–	–	–	–	–
30 s	30 s	30 s	10 s	10 s	10 s	10 s
external	external	external	internal	internal	internal	internal
100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz
ø 90 mm	ø 90 mm	ø 100 mm	ø 300 mm	ø 300 mm	ø 300 mm	ø 300 mm
950 × 650 × 1150 mm	455 × 275 × 380 mm	1050 × 650 × 1150 mm	525 × 350 × 250 mm	525 × 350 × 250 mm	525 × 350 × 250 mm	525 × 350 × 250 mm
206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm
–	–	–	–	–	–	–
230 kg / 350 kg	235 kg / 352 kg	260 kg / 380 kg	25 kg / 35 kg	25 kg / 35 kg	25 kg / 35 kg	25 kg / 35 kg
1050 × 800 × 1320 mm	1150 × 770 × 1320 mm	1150 × 800 × 1320 mm	950 × 750 × 750 mm	950 × 750 × 750 mm	950 × 750 × 750 mm	950 × 750 × 750 mm
–	–	–	–	–	–	–
+15 – +30 °C	+15 – +35 °C	+10 – +40 °C	+15 – +30 °C	+15 – +30 °C	+15 – +30 °C	+15 – +30 °C
±0.5 °C / 12 h	±0.5°C / 12 h	±0.5°C / 12 h	±0.5°C / 12 h	±0.5°C / 12 h	±0.5°C / 12 h	±0.5°C / 12 h
40 % – 60 %	30 % – 70 %	30 % – 70 %	40 % – 60 %	40 % – 60 %	40 % – 60 %	40 % – 60 %
±3 % / 4 h	±5 % / 4 h	±10 % / 4 h	±2 % / 4 h	±2 % / 4 h	±2 % / 4 h	±2 % / 4 h

** Standard deviation of 6 ABBA cycles (acc. to R111 OIML) for maximal mass being subjected to comparison when stable laboratory conditions are maintained.*

		UYA 5.4Y.K0	APP 10.4Y.K0	APP 30.4Y.K0	APP 64.4Y.K0	APP 64.1.4Y.K0	WAY 100.4Y.K0
Calibration range	E1	1 mg – 5 g	5 kg – 10 kg	20 kg	–	–	5 g – 100 g
	E2	1 mg – 5 g	1 kg – 10 kg	10 kg – 20 kg	50 kg	20 kg – 50 kg	100 mg – 100 g
	F1	1 mg – 5 g	500 g – 10 kg	5 kg – 20 kg	20 kg – 50 kg	5 kg – 50 kg	1 mg – 100 g
	F2	1 mg – 5 g	100 g – 10 kg	1 kg – 20 kg	5 kg – 50 kg	2 kg – 50 kg	1 mg – 100 g
	M1	1 mg – 5 g	100 g – 10 kg	1 kg – 20 kg	1 kg – 50 kg	1 kg – 50 kg	1 mg – 100 g
	M2	1 mg – 5 g	100 g – 10 kg	1 kg – 20 kg	1 kg – 50 kg	200 g – 50 kg	1 mg – 100 g
Max capacity [Max]		5.1 g	10.2 kg	30.5 kg	64 kg	64 kg	110 g
Readability [d]		0.1 µg	0.1 mg	1 mg	10 mg	5 mg	0.001 mg
Standard repeatability [5% Max]*		0.2 µg	0.35 mg	2 mg	13 mg	5 mg	2.5 µg
Standard repeatability [Max]*		0.4 µg	0.4 mg	3 mg	18 mg	8 mg	3 µg
Electric compensation range		0 – +5.1 g	-100 g – +200 g	+100 g – +30.5 kg	0 – +64 kg	0 – +64 kg	-1 g – +10 g
Eccentricity error		1 division per 1 mm	2 divisions per 1 mm	2 divisions per 1 mm	2 divisions per 1 mm	2 divisions per 1 mm	1 division per 1 mm
Internal supplementary weights		–	half-automatic	half-automatic	–	–	half-automatic
External supplementary weights		–	300 g; 200 g	–	–	–	10 g
Stabilization time		30 s	30 s	20 s	20 s	20 s	30 s
Adjustment		internal	external	external	external	external	external
Power supply		100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz
Weighing pan size		ø 16 mm	ø 190 mm (ø 300 mm)	ø 220 mm (ø 300 mm)	ø 300 mm (ø 400 mm)	ø 300 mm (ø 400 mm)	ø 30 mm
Weighing unit size (L×W×H)		370 × 160 × 175 mm	455 × 300 × 380 mm	454 × 275 × 200 mm	385 × 215 × 420 mm	385 × 215 × 420 mm	385 × 217 × 524 mm
Control unit size (L×W×H)		206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm
Draft shield size (L×W×H)		560 × 350 × 255 mm	660 × 440 × 680 mm	700 × 440 × 550 mm	–	–	560 × 340 × 570 mm
Net/gross weight		9.1 kg / 16.6 kg	30 kg / 59 kg	23 kg / 37 kg	25 kg / 39 kg	25 kg / 39 kg	35.5 kg / 55.5 kg
Comparator packaging size (L×W×H)		660 × 660 × 455 mm	1160 × 650 × 700 mm	1160 × 650 × 700 mm	1160 × 650 × 700 mm	1160 × 650 × 700 mm	860 × 800 × 550 mm
Draft shield packaging size (L×W×H)		820 × 840 × 630 mm	960 × 920 × 735 mm	960 × 825 × 730 mm	–	–	820 × 850 × 630 mm
Operating temperature		+15 – +30 °C	+15 – +30 °C	+15 – +35 °C	+10 – +40 °C	+10 – +40 °C	+15 – +30 °C
Operating temperature change rate		±0.5 °C / 12 h	±0.5 °C / 12 h	±0.5°C / 12 h	±0.5°C / 12 h	±0.5°C / 12 h	±0.5 °C / 12 h
Relative humidity		40 % – 80 %	40 % – 60 %	30 % – 70 %	30 % – 70 %	30 % – 70 %	40 % – 60 %
Relative humidity change		±2 % / 4 h	±3 % / 4 h	±5 % / 4 h	±10 % / 4 h	±10 % / 4 h	±3 % / 4 h

		HRP 200.4Y.K0	HRP 500.4Y.K0	HRP 500.1.4Y.K0	HRP 1000.4Y.K0	HRP 2000.4Y.K0	HRP 2000.1.4Y.K0
Calibration range	E1	–	–	–	–	–	–
	E2	–	–	–	–	–	–
	F1	–	–	500 kg	–	–	–
	F2	200 kg	500 kg	100 kg – 500 kg	500 kg – 1000 kg	2000 kg	–
	M1	50 kg – 200 kg	100 kg – 500 kg	20 kg – 500 kg	200 kg – 1000 kg	500 kg – 2000 kg	500 kg – 2000 kg
	M2	10 kg – 200 kg	50 kg – 500 kg	10 kg – 500 kg	100 kg – 1000 kg	200 kg – 2000 kg	500 kg – 2000 kg
Max capacity [Max]		210 kg	510 kg	510 kg	1050 kg	2100 kg	2100 kg
Readability [d]		0.2 g	0.5 g	0.1 g	1 g	2 g	5 g
Standard repeatability [5% Max]*		0.4 g	0.6 g	0.2 g	1.5 g	2.5 g	5 g
Standard repeatability [Max]*		0.6 g	1.5 g	0.4 g	2.5 g	5 g	10 g
Electric compensation range		0 – +210 kg	0 – +510 kg	0 – +510 kg	0 – +1050 kg	0 – +2100 kg	0 – +2100 kg
Eccentricity error		2 division per 1 mm	2 division per 1 mm	2 division per 1 mm	1 division per 1 mm	1 division per 1 mm	1 division per 1 mm
Internal supplementary weights		–	–	–	–	–	–
External supplementary weights		–	–	–	–	–	–
Stabilization time		10 s	10 s	10 s	10 s	10 s	10 s
Adjustment		internal	internal	internal	internal	internal	internal
Power supply		100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz
Weighing pan size		800 × 600 mm 600 × 600 mm (self-centering pan)	800 × 600 mm 600 × 600 mm (self-centering pan)	800 × 600 mm 600 × 600 mm (self-centering pan)	1000 × 800 mm 600 × 600 mm (self-centering pan)	1250 × 1000 mm	1250 × 1000 mm
Weighing unit size (L×W×H)		810 × 600 × 260 mm	810 × 600 × 260 mm	810 × 600 × 260 mm	1010 × 800 × 275 mm	1250 × 1000 × 430 mm	1250 × 1000 × 430 mm
Control unit size (L×W×H)		206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm
Draft shield size (L×W×H)		–	–	–	–	–	–
Net/gross weight		105 kg / 140 kg	142.5 kg / 165.5 kg	105 kg / 140 kg	199 kg / 268 kg	530 kg / 665 kg	530 kg / 665 kg
Comparator packaging size (L×W×H)		1000 × 800 × 355 mm	988 × 800 × 355 mm	988 × 800 × 355 mm	1200 × 1000 × 485 mm	1500 × 1200 × 735 mm	1500 × 1200 × 735 mm
Draft shield packaging size (L×W×H)		–	–	–	–	–	–
Operating temperature		+15 – +30 °C	+15 – +30 °C	+15 – +30 °C	+15 – +30 °C	+15 – +30 °C	+15 – +30 °C
Operating temperature change rate		±1 °C / 12 h	±1 °C / 12 h	±1 °C / 12 h	±1 °C / 12 h	±1 °C / 12 h	±1 °C / 12 h
Relative humidity		40 % – 60 %	40 % – 60 %	40 % – 60 %	40 % – 60 %	40 % – 60 %	40 % – 60 %
Relative humidity change		±5 % / 4 h	±5 % / 4 h	±5 % / 4 h	±5 % / 4 h	±5 % / 4 h	±5 % / 4 h

WAY 200.4Y.KO	WAY 500.4Y.KO	WAY 1.4Y.KO	WAY 1200.4Y.KO	WAY 2.4Y.KO	WAY 5.4Y.KO	WAY 5100.4Y.KO
5 g – 200 g	200 g – 500 g	500 g – 1 kg	–	1 kg – 2 kg	2 kg – 5 kg	–
100 mg – 200 g	10 g – 500 g	100 g – 1 kg	500 g – 1 kg	500 g – 2 kg	500 g – 5 kg	–
1 mg – 200 g	500 mg – 500 g	10 g – 1 kg	100 g – 1 kg	100 g – 2 kg	200 g – 5 kg	5 kg
1 mg – 200 g	1 g – 500 g	1 g – 1 kg	5 g – 1 kg	10 g – 2 kg	20 g – 5 kg	2 kg – 5 kg
1 mg – 200 g	1 g – 500 g	1 g – 1 kg	1 g – 1 kg	1 g – 2 kg	1 g – 5 kg	500 g – 5 kg
1 mg – 200 g	1 g – 500 g	1 g – 1 kg	1 g – 1 kg	1 g – 2 kg	1 g – 5 kg	200 g – 5 kg
210 g	520 g	1.02 kg	1.2 kg	2.3 kg	5.05 kg	5.1 kg
0.001 mg	0.01 mg	0.01 mg	0.1 mg	0.1 mg	0.1 mg	1 mg
3 µg	0.012 mg	0.25 mg	0.08 mg	0.08 mg	0.15 mg	0.8 mg
4 µg	0.02 mg	0.03 mg	0.1 mg	0.1 mg	0.2 mg	1 mg
-1 g – +10 g	-10 g – +20 g	-10 g – +20 g	0 g – +1200 g	-50 g – +300 g	-10 g – +50 g	0 g – +5100 g
1 division per 1 mm	1 division per 1 mm	1 division per 1 mm	1 division per 1 mm	1 division per 1 mm	1.5 division per 1 mm	1.5 division per 1 mm
half-automatic	half-automatic	half-automatic	–	half-automatic	half-automatic	–
10 g	30 g; 10 g (× 2)	50 g; 30 g; 10 g (× 2)	–	100 g (× 2)	500 g; 300 g; 100 g; 50 g; 30 g; 10 g (× 2)	–
30 s	30 s	30 s	10 s	20 s	20 s	10 s
external	external	external	external	external	external	external
100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz
ø 40 mm	ø 50 mm	ø 60 mm	ø 80 mm	ø 70 mm	ø 90 mm	ø 100 mm
385 × 217 × 525 mm	385 × 215 × 525 mm	385 × 215 × 525 mm	385 × 203 × 407 mm	385 × 215 × 525 mm	385 × 217 × 545 mm	385 × 195 × 210 mm
206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm
560 × 565 × 340 mm	560 × 300 × 665 mm	660 × 470 × 700 mm	560 × 340 × 455 mm	660 × 470 × 700 mm	560 × 340 × 570 mm	560 × 340 × 455 mm
21.5 kg / 31.5 kg	36.5 kg / 56.5 kg	37 kg / 57 kg	15 kg / 30 kg	38.5 kg / 58.5 kg	38 kg / 58 kg	15 kg / 30 kg
860 × 750 × 570 mm	860 × 800 × 550 mm	860 × 800 × 550 mm	860 × 750 × 560 mm	860 × 800 × 550 mm	860 × 800 × 550 mm	860 × 750 × 560 mm
860 × 830 × 840 mm	820 × 850 × 630 mm	820 × 850 × 630 mm	820 × 735 × 630 mm	820 × 850 × 630 mm	820 × 850 × 630 mm	820 × 735 × 630 mm
+15 – +30 °C	+15 – +30 °C	+15 – +30 °C	+15 – +30 °C	+15 – +30 °C	+15 – +30 °C	+15 – +30 °C
±0.5 °C / 12 h	±0.5 °C / 12 h	±0.5 °C / 12 h	±0.5 °C / 12 h	±0.5 °C / 12 h	±0.5 °C / 12 h	±0.5 °C / 12 h
40 % – 60 %	40 % – 60 %	40 % – 60 %	40 % – 60 %	40 % – 60 %	40 % – 60 %	40 % – 60 %
±3 % / 4 h	±3 % / 4 h	±3 % / 4 h	±3 % / 4 h	±3 % / 4 h	±5 % / 4 h	±5 % / 4 h

XA 6.4Y.A.KO	XA 21.4Y.A.KO	XA 52.4Y.A.KO	XA 200.4Y.A.KO	PM 25.4Y.KB	PM 50.4Y.KB	HRP 1000.4Y.KB
100 mg – 5 g	500 mg – 20 g	50 g	200 g	–	–	–
1 mg – 5 g	1 mg – 20 g	100 mg – 50 g	50 g – 200 g	–	–	–
1 mg – 5 g	1 mg – 20 g	1 mg – 50 g	50 mg – 200 g	20 kg	–	–
1 mg – 5 g	1 mg – 20 g	1 mg – 50 g	1 mg – 200 g	5 kg – 20 kg	50 kg	–
1 mg – 5 g	1 mg – 20 g	1 mg – 50 g	1 mg – 200 g	2 kg – 20 kg	10 kg – 50 kg	1000 kg
1 mg – 5 g	1 mg – 20 g	1 mg – 50 g	1 mg – 200 g	1 kg – 20 kg	5 kg – 50 kg	200 kg – 1000 kg
6 g	21 g	52 g	210 g	25.5 kg	51 kg	1050 kg
0.001 mg	0.001 mg	0.005 mg	0.01 mg	10 mg	100 mg	10 g
1.2 µg	1.2 µg	2.5 µg	0.005 mg	8 mg	70 mg	6 g
2 µg	3 µg	6 µg	0.025 mg	15 mg	100 mg	10 g
0 – +6 g	0 – +21 g	0 – +52 g	0 – +200 g	0 – +25.5 kg	0 – +51 kg	0 – +1050 kg
–	–	–	–	–	–	–
–	–	–	–	–	–	–
–	–	–	–	–	–	–
5 s	5s	5 s	5 s	5 s	3 s	10 s
internal	internal	internal	internal	internal	internal	internal
100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz	100–240 V AC / 50–60 Hz
ø 16 mm	ø 24 mm	ø 24 mm	ø 90 mm	302 × 252 mm	302 × 252 mm	1000 × 800 mm
564 × 253 × 300 mm	564 × 253 × 300 mm	564 × 253 × 300 mm	564 × 253 × 300 mm	370 × 280 × 150 mm	370 × 280 × 150 mm	1010 × 800 × 182 mm
206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm	206 × 140 × 70 mm
–	–	–	–	–	–	–
14.7 kg / 19.1 kg	14.7 kg / 19.1 kg	14.7 kg / 19.1 kg	14.7 kg / 19.1 kg	10.5 kg / 12.7 kg	11 kg / 13.2 kg	120 kg / 160 kg
720 × 385 × 485 mm	720 × 385 × 485 mm	720 × 385 × 485 mm	720 × 385 × 485 mm	520 × 520 × 280 mm	520 × 520 × 280 mm	1200 × 1000 × 440 mm
–	–	–	–	–	–	–
+15 – +35 °C	+15 – +35 °C	+15 – +35 °C	+15 – +35 °C	+10 – +40 °C	+10 – +40 °C	+15 – +30 °C
±1 °C / 12 h	±1 °C / 12 h	±1 °C / 12 h	±1 °C / 12 h	±2 °C / 12 h	±2 °C / 12 h	±2 °C / 12 h
40 % – 70 %	40 % – 70 %	40 % – 70 %	40 % – 70 %	30 % – 70 %	30 % – 70 %	40 % – 60 %
±5 % / 4 h	±5 % / 4 h	±5 % / 4 h	±5 % / 4 h	±10 % / 4 h	±10 % / 4 h	±10 % / 4 h

** Standard deviation of 6 ABBA cycles (acc. to R111 OIML) for maximal mass being subjected to comparison when stable laboratory conditions are maintained.*

RADWAG®

www.radwag.com