



Comparator Balances

Nano & vacuum technology

Robot-controlled solutions

Automated & manual operation

From 5 g up to 6000 kg



Impressively Global
With Cutting-edge Innovation

METTLER TOLEDO

Forerunner with Innovation and Global Competence

In the metrology or quality assurance lab, you constantly have to make quick and accurate decisions. Reliable results as well as a competent, global partner that offers you more than just a high-precision weighing instrument are of utmost importance.

Professional solutions for every weight class. You can easily determine even the smallest differences in mass with METTLER TOLEDO Comparator Balances. They provide highest resolution and excellent repeatability, the critical factors for your weighing performance. We offer several models with readabilities as fine as 100 nanograms and capacities up to 6000 kilograms.

Complete consultation from planning on up to installation
Whether you need a few useful tips or a turn-key solution, call on METTLER TOLEDO to help find the right solution for your application. We would like nothing better than to see you profit from our comparative weighing knowledge.

Quality – controlled and assured
All METTLER TOLEDO products have been developed, manufactured and tested under the most stringent international standards. Our top-of-the-line Comparator Balance models meet the most demanding standards and tests.

Our production facilities in Greifensee (Switzerland) and Albstadt (Germany) fulfill the ISO 9001 and ISO 14001, proof that their Quality Assurance System meets the highest standards.



ServiceXXL®
Tailored Services

Service and support worldwide
We are available with advice and help almost anywhere in the world. You may count on us for regular maintenance and checks and, of course, whenever you need a quick service response.



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Nano-vacuum Technology

World-leading Repeatability up to 1 kg

- Best performance and highest readability in vacuum and constant pressure
- Highest flexibility and comfort with 3-beam weighing pan
- Unique vacuum loading system with round vacuum chamber

The system: world-unique

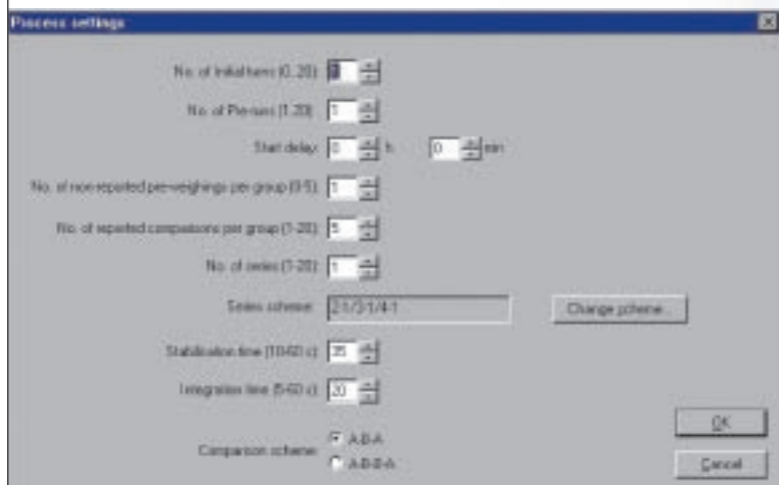
A high-resolution comparator balance, precise weight handler, vacuum chamber: together they form the M_one, the only weighing system in the world for fully automatic mass determination up to 1 kg under constant pressure or vacuum.

Pressure-controlled atmosphere

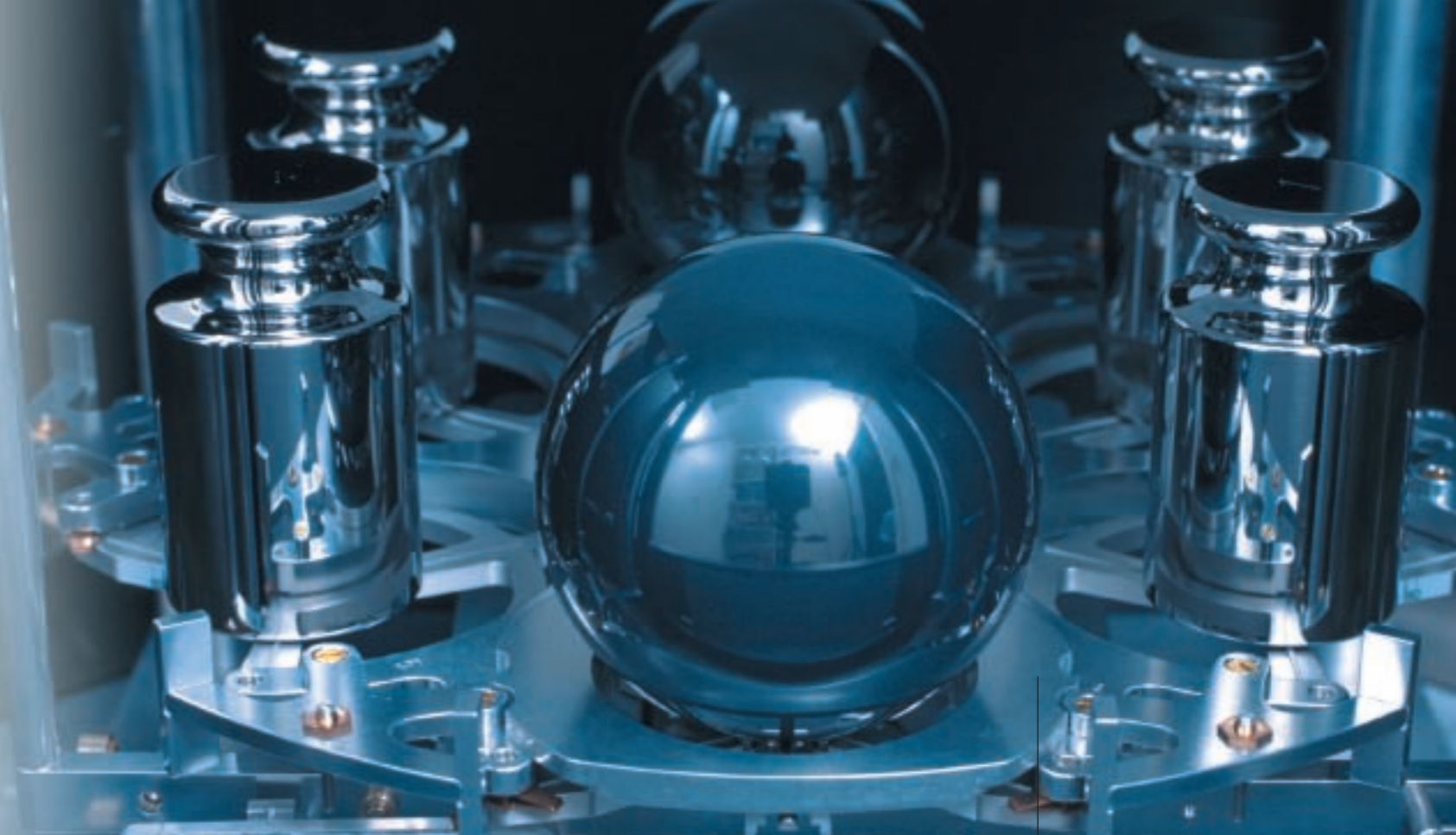
The cleverly constructed vacuum chamber allows measurements at extremely constant ambient conditions ranging from normal atmospheric pressure to an underpressure of 10^{-6} mbar. The maximum measurement evaluation of 10 ng (0.0000001 g) and an accuracy of 100 ng is attained with a high repeatability better than 300 ng: most probably a world record.

Weighing range up to 1 kg

The M_one gives you utmost precision for standard 1:1 comparison weighings as well as various patterns of downward calibration. Yet placing the compensation weights is easy and fast.



Programmed automation and flexibility. You can configure the entire measuring process according to your requirements. The Windows® based software performs the measurement completely automatic with just one keystroke.



Vacuum transportation.

Optionally available are a vacuum load lock and a vacuum transportation container. They make the M_one a unique vacuum measuring system – an ideal configuration for research and development in gravimetric metrology.

Comparison in every form.

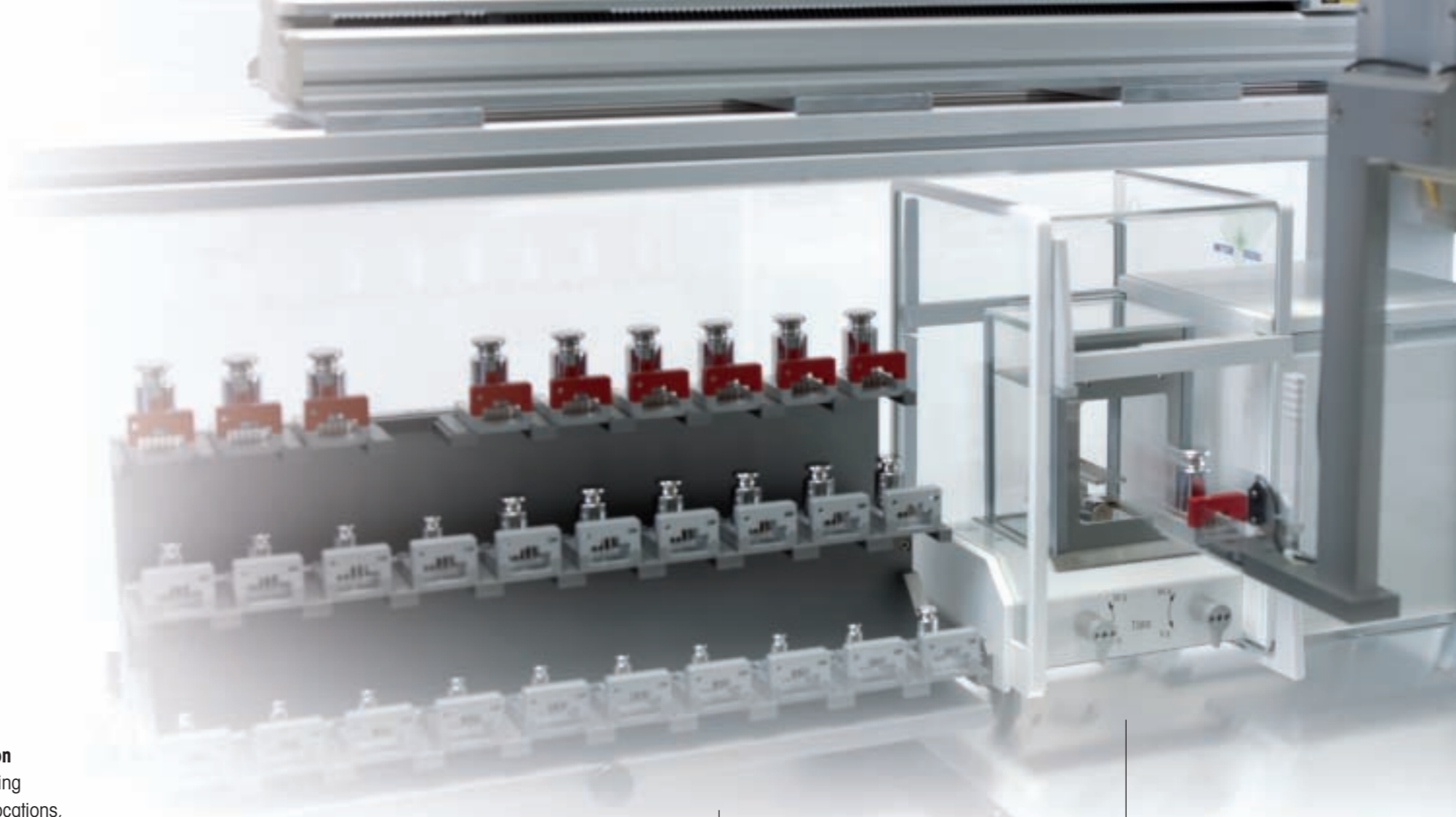
The weight handler with its 3-beam weighing pan and four or six platforms takes standard cylindrical or spherical weights in any combination. Under vacuum, practically error-free comparisons between weights of different volume become possible.

Model	E1	E2	F1	Max. load	Readability	Repeatability
M_one Comparator	■	■	■	1001.5 g	100 ng	500 ng

a_comparator

The Fully Automatic Solution with Nanogram Resolution

- Peak performance with nanogram resolution
- High productivity with large weight magazine
- Fully automated with 3-axis robot



Systemized solution

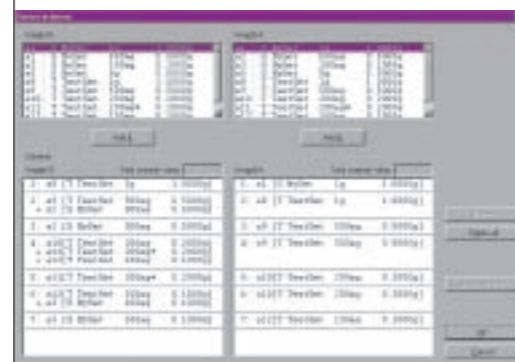
Systems in the a_comparator line are completely automated solutions. The a107 and a5 have an unsurpassed nanogram resolution. Each have a large weight magazine for high productivity, a 3-axis robot and Windows® based controller.

Systemized efficiency

At the start of the calibration procedure you insert the mass-standard weights and the weights for testing into the holders of the magazine. The robot then takes the individual weights, transfers them to the weighing pan, and returns them after weighing. You can program the sequence and weighing pattern according to your needs.

Systemized documentation

Needless to say, all weighing operations, references, allocations, and results are comprehensively documented in a Windows® based software.

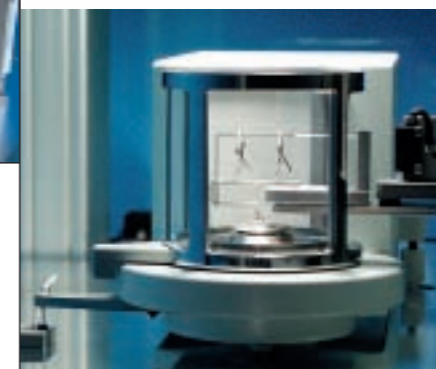


Choose your program

The a_control software is Windows® based software. You can program your procedures practically any way you like. Or use the familiar standard programs.



Productivity included
18 weights fit into the magazine of the a1000 comparator.



Large magazine, efficient weighing pan

The magazine of the a5 comparator has three rows each with twelve weight holders. You can therefore load 36 weights and automatically perform correspondingly numerous downward weight calibrations. Thanks to the special weighing pan, the robot can place up to three weights on it simultaneously.

High performance as standard
The magazine of the a107 comparator measures 30 weights with 100 nanograms (0.000001g) accuracy.

Model	E1	E2	F1	Max. load	Readability	Repeatability
a5 comparator	■	■	■	5.1 g	100 ng	0 – 1 g 150 ng 1 – 2 g 250 ng 2 – 5 g 400 ng
a107 comparator	■	■	■	111 g	100 ng	980 ng
a100 comparator	■	■	■	111 g	1 µg	1.6 µg
a1000 comparator	■	■	■	1109 g	10 µg	10 µg

Unrivalled Mass Comparison

Up to 64 kg with 0.1 mg Resolution

- Highest accuracy up to 64 kg
- Full automation with 4-position weight handler
- Flexibility with large weighing pan



Precision for heavyweights, too
At METTLER TOLEDO, innovative solutions are our speciality. Here's another one. The AX64004 comparator performs comparison weighings up to 64 kg, with sensational 0.1 mg resolution.

Reliable and highly reproducible
Self-centering of the weighing platform and high-performance weighing cell automatically gives highly reliable measurements which are always reproducible.

Seamless from 1 kg to 64 kg
By automatically switching substitution weights in and out, the patented METTLER TOLEDO substitution weight mechanism enables mass determination of any weight between 1 kg and 64 kg.

Menu-driven, Windows® based
Structured menus and comprehensive dialogs with Windows® based software guide the user through the mass determination process easily and conveniently.

Convenience factor
User-friendly, menu-driven Windows® based software make operating the system and recording data easy and secure.



Capacity factor
The large weighing pan allows several weights to be placed side by side and compared. The weights can have different shapes: cylindrical, disk, rectangular.

Certainty factor
Individual draft shields guarantee high-quality measurements and a stable measuring environment.



Productivity factor
The automatic four-platform weight handler simplifies working procedures and increases efficiency.

Model	E1	E2	F1	F2	Max. load	Readability	Repeatability
AX64004 Comparator	■	■	■	■	64 kg	0.1 mg	0.4 mg
AX32004 Comparator	■	■	■	■	32 kg	0.1 mg	0.2 mg
AX16004 Comparator	■	■	■	■	16 kg	0.1 mg	0.2 mg

Superior Performance Meets Automatic Operation

- Ultimate accuracy with nanogram resolution
- Highest repeatability with hanging pan
- Full automation with 4-position weight handler

Cutting-edge technology

With their extraordinary resolution and incomparable repeatability, the AX107H, AX106H, AX1006 and AX10005 Comparator Balances comprise a class of their own. They meet the highest requirements for accuracy up to 100 nanograms in the determination of weight pieces of up to 10 kg. Human error is eliminated due to fully automatic operation.

Cleverly designed turntable

With the AX107H and AX106H the efficiency is increased by placing several weights on the turntable for each weighing position. This enables you to calibrate the weight decade 10 – 100 g without the aid of disk weights.

Wide weighing range

The entire weighing range of the AX1006 is available to you – from 0 to 1011 g. This makes it possible to use the Comparator Balance without any restrictions, even for testing non-metric weights.

Saves time

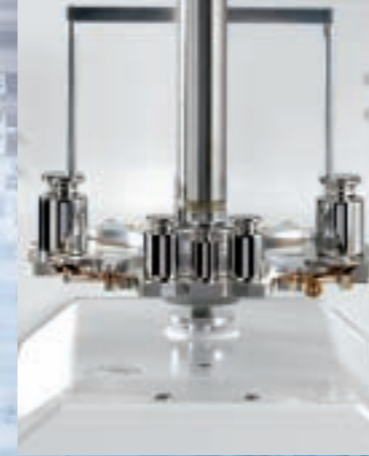
By simply switching in tare weights, the AX10005 can be quickly and easily set to the desired weighing range such as 1, 2, 5 or 10 kg.

Records results automatically

Comparison weighings are carried out completely automatically. The measurement data are captured, evaluated, and recorded automatically in a Windows® based software. The standardized system structure and controls make operation easy. All measurement results are completely traceable at any time.

Automatic evaluation

Climatic data can be read directly into the controller using our highly accurate measuring station.



AX107H
Downward calibration of a weight set.



AX107H
The automated nano comparator up to 100g.

Model	E1	E2	F1	Max. load	Readability	Repeatability
AX107H Comparator	■	■	■	111 g	100 ng	800 ng
AX106H Comparator	■	■	■	111 g	1 ng	1,5 µg
AX1006 Comparator	■	■	■	1 011 g	1 µg	2 µg
AX10005 Comparator	■	■	■	10 011 g	10 µg	20 µg

When the Smallest Difference Counts

- 8 models up to 2kg maximum capacity
- XP56C – Peak performance up to 52 g
- Menu-guided application
- Easy operation with touchscreen display

Easy to use

Thanks to the full weighing range, you can use the UMX5, XP26C and XP56C at any capacity. With the UMX5, XP26C and XP56C, weighing is fully electronic. The doors to the weighing chamber of all eight models open and close automatically. This leaves your hands free to work with the sample.

Adjusted whenever you want ...

The motorized calibration of the UMX, XP and AX is triggered at the touch of a button.

... or whenever the balance needs it.

The UMX, XP and AX comparators adjust themselves automatically when changes in environmental conditions make this necessary. Because of proFACT (Fully Automatic Calibration Technology), you are always working with the highest precision.

Adapted to the environment

Modern signal processing facilitates weighing that is adapted to the application and the location. The easy configuration of the vibration adapter and the stability detector helps provide reliable results.

Stable conditions

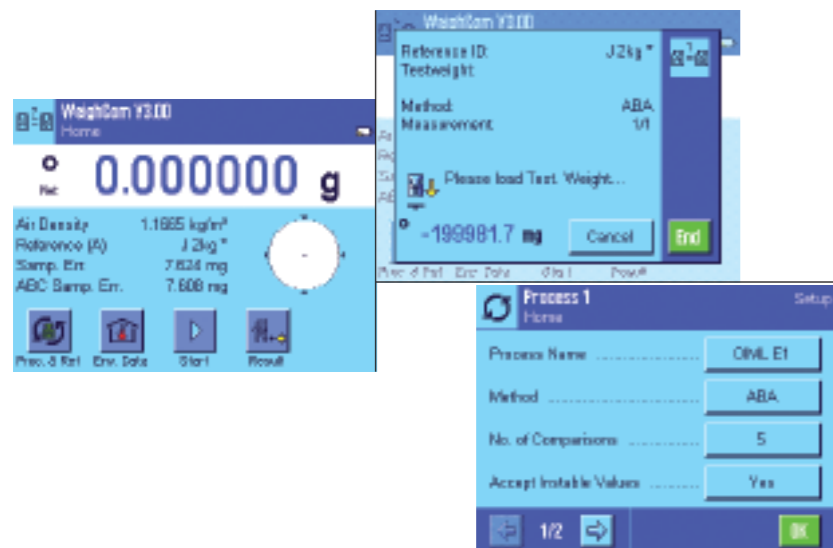
In designing the UMX, XP and AX, we separated the electronics from the actual weighing cell. This effectively reduces any thermal influence on the weighing results. When the sample is acclimatized in the weighing chamber, even higher stability can be achieved.

Evaluation with a system

All models are system compatible with standard built-in data interfaces. With the MCLink Software, you can evaluate the measurement data with a PC, print them out or store them for interpretation later on.

Retrofitting the AX106

If you have even greater demands on accuracy, we also offer the weight handler separately. You can use it to convert the AX106 to an AX106H and hence weigh fully automatically.



WeighCom – easy operation, clear layout. Menu-assisted process for mass determination.



Model	E1	E2	F1	F2	Max. load	Readability	Repeatability
UMX5 Comparator	■	■	■		5.1g	0.1 µg	0.25 – 0.4 µg
XP26C Comparator	■	■	■		22 g	1 µg	1.5 µg
XP56C Comparator	■	■	■		52 g	1 µg	3 µg
AX106 Comparator	■	■	■		111 g	1 µg	3 µg
AX206 Comparator	■	■	■		211 g	1 µg	4 µg
AX1005 Comparator	■	■	■	■	1109 g	0.01 mg	0.02 mg
AX2005 Comparator	■	■	■	■	2109 g	0.01 mg	0.04 mg
AX1004 Comparator	■	■	■	■	1109 g	0.1 mg	0.07 mg

Comparator Balances for a Variety of Applications

Tested in industry and government

Industrial companies and government metrology labs both place high priority on reliability. Comparator Balances are indispensable anywhere finest weight changes are critical.

XP Comparator Balances

XP Comparators are delivered with state-of-the-art technology:

WeighCom application:

Intelligent user guidance for the mass determination process

Levelmatic®:

The self-centering device of the weighing pan

Pro Draftshield:

The draftshield with patented sliding doors

Always up to date:

Download future software releases from the Internet



Levelmatic centering device to eliminate corner load error.

Model	E1	E2	F1	F2	M1	Max. load	Readability	Repeatability
XP2004S Comparator	■	■	■	■	■	2300 g	0.1 mg	0.1 mg
XP2003S Comparator		■	■	■	■	2300 g	1 mg	1 mg
XP5003S Comparator	■	■	■	■	■	5100 g	1 mg	0.8 mg
XP10003S Comparator	■	■	■	■	■	10100 g	1 mg	1 mg

The Unique 2-Position Solution up to 12 kg

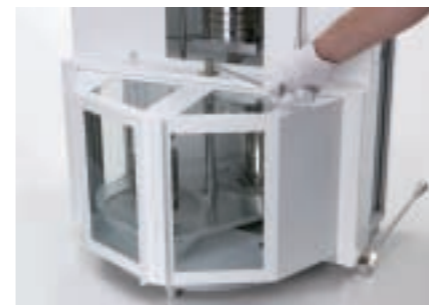
AX12004 Comparator

The AX12004 Comparator shows leading-edge performance up to 12 kg.

It has been designed to offer outstanding flexibility in terms of manual handling:

- Manual 2-position turntable
- Manual process for up- and down-load of turntable
- Manual dial weights for weighing range flexibility

The AX12004 Comparator is delivered with a large integrated draftshield, for maximum measurement stability.



Manual 2-position turntable guarantees high precision



Manual dial weights increase flexibility

Model	E1	E2	F1	F2	M1	Max. load	Readability	Repeatability
AX12004 Comparator	■	■	■	■	■	12 kg	0.1 mg	0.25 mg

Unsurpassed and Unique In Its Weight Class

- Top performance with full weighing range
- Reliability with integrated Levelmatic
- Optimal ergonomics with SmartScreen color display

High Load Line up to 64 kg

The XP-L High Load Line is a complete product range up to 64 kg with a unique resolution up to 26 Million points in kilogram range. The high resolution combined with the innovative integrated Levelmatic® weighing pan delivers peak performance to determine smallest differences at an accuracy second to none.

Intelligent ergonomics

The color touchscreen display with user-guidance in association with the integrated Level Control enables convenient and error-free operation.

Stable environment

The Levelmatic weighing pan, which eliminates corner load effects, combined with the large draft shield, which eliminates air turbulences, guarantees utmost reliability and accuracy of measurements.

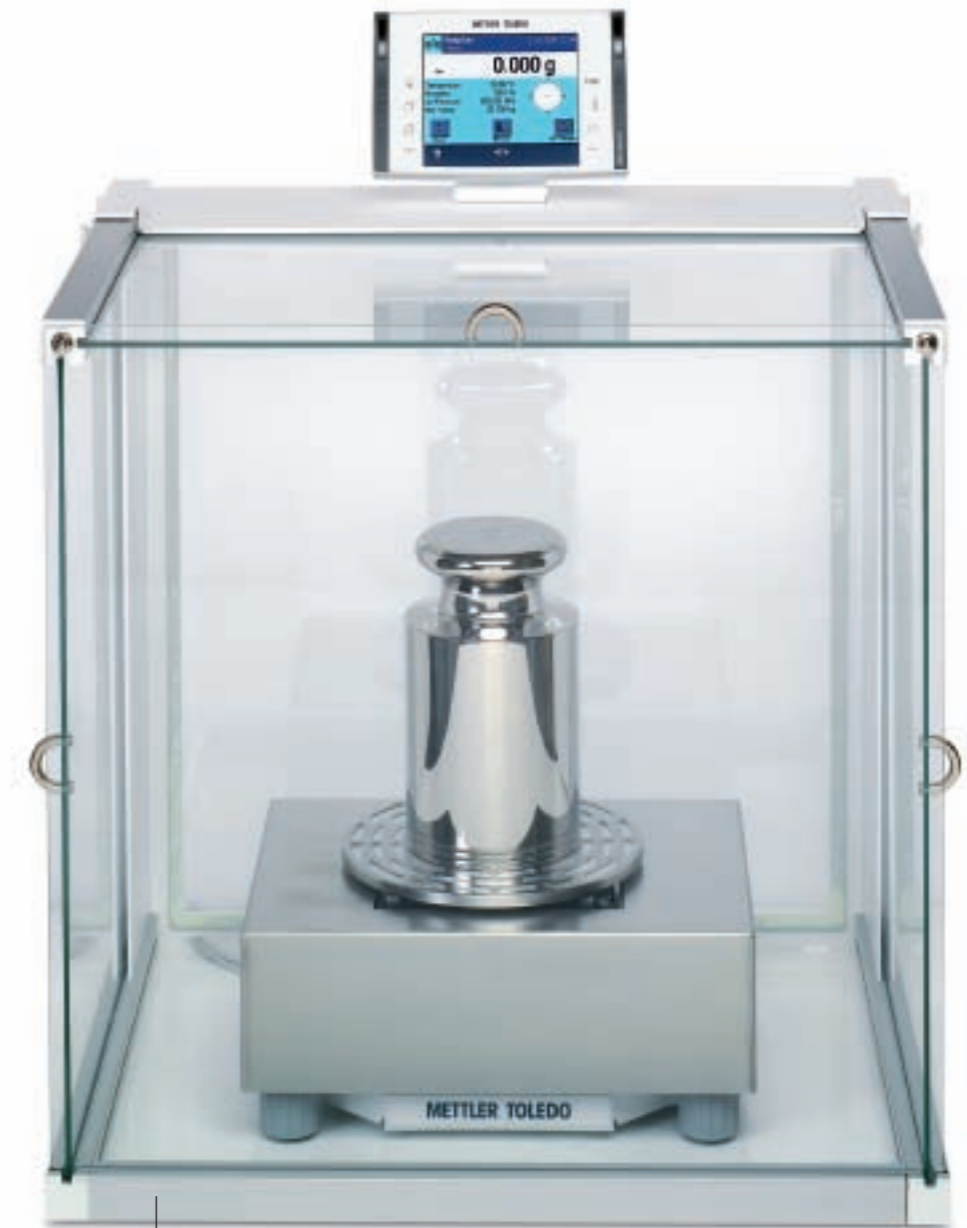
Menu-guided application

The built-in WeighCom application for mass determination guides you step by step through the process. Complex processes are solved in an easy way.



Levelmatic

The Innovative self-centering device Levelmatic® reduces corner load error drastically. It is fully integrated and ensures high accuracy and reliability.



Choice of 10 weighing platforms from 15 to 6000 kg.

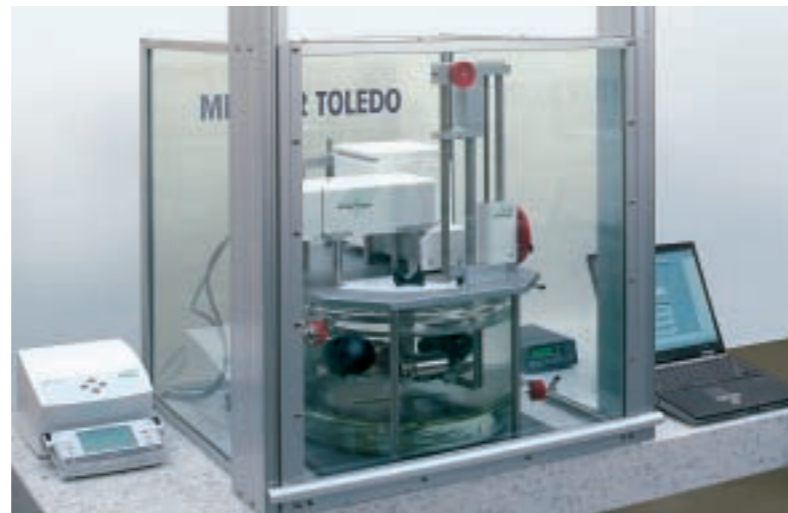
Model	E1	E2	F1	F2	M1	M2	Max. load	Readability	Repeatability
XP26003L Comparator	■	■	■	■	■		26 kg	1 mg	3 mg
XP32003L Comparator		■	■	■	■		32 kg	5 mg	10 mg
XP64003L Comparator	■	■	■	■	■		64 kg	5 mg	8 mg
XP64002L Comparator		■	■	■	■		64 kg	10 mg	25 mg
XP64002L-T Comparator			■	■	■		64 kg	5 mg	30 mg
XP155KS Komparator			■	■	■	■	150 kg	0.05 g	0.15 g
XP604KM Komparator			■	■	■	■	600 kg	0.1 g	0.3 – 0.5 g
XP1003KM Komparator				■	■	■	1100 kg	0.5 g	2 – 3 g
XP2003KL Komparator				■	■	■	2200 kg	1 g	10 g
XP6002KL Komparator					■	■	6000 kg	10 g	100 g

Volume and Density Determination From 1g up to 20 kg

- VC1005X for automated density and volume determination up to 1 kg
- P20 density and volume determination from 2 to 20 kg
- Time-saving, reliable and convenient system solutions

Determining the density and volume of solid bodies is very important both in industrial (e.g. materials manufacturing) and in metrological applications. In metrology it is recommended to specify the volume and density on calibration certificates for weight pieces in the OIML accuracy class E1.

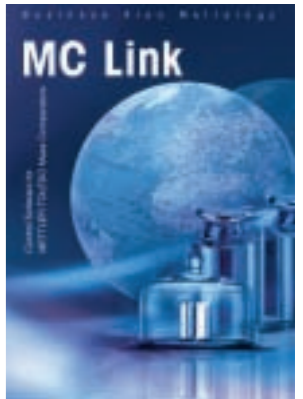
Especially versatile: VC1005X
The VC1005X is used to determine the density and volume of OIML weights and spheres. The VC1005X covers the range up to 1 kg.



Especially reliable: P20Density
To be used in combination with comparator balance. With the Windows® base software, density determination is performed accurately and easily from 2 kg up to 20 kg

Dedicated Control Software Expand, Analyze and Specialize

- MC Link software
- Klimet A30 high-precision climate station
- Susceptometer control software



MCLink software

- User-friendly process guidance
- Simultaneous control of up to four comparator balances
- Compatible with METTLER TOLEDO comparator balances

Professional solution for weights calibration and mass determination.

Continuous air buoyancy calculations. Control of up to 4 comparator balances together with the Klimet A30 (for climatic parameters such as temperature, relative humidity, air pressure). User-friendly process guidance in 5 languages (E, S, D, F, I).



MCLink for controlling up to four comparator balances.

MCLink with its high flexibility lets you define complex process according to your needs. Reports produced in .TXT and .XLS format include all measurement uncertainties and air density parameters for full traceability.



Susceptometer Control Software

Professional software for the measurement of magnetic properties, for use with BIPM (Bureau International des Poids et Mesures) susceptometer. With the easy setup or all measurements parameter and menu-guided procedures, the Susceptometer Control Software can be used with UMX5 or UMT5 comparators. The consistent reporting is available in two different formats (*.TXT and *.XLS).

Klimet A30 high-precision climate station

- Reliable
- Accurate
- Stand-alone or networked



Klimet A30 for air buoyancy correction

This module collects the temperature, relative humidity, and air pressure data for the calculation of the air density and buoyancy correction. Up to four temperature sensors can be connected to Klimet.

Stability, Precision, Quality Values You Can Read Everywhere



- Complete range of weights: in OIML classes E1, E2, F1, F2, M1–M3
- OIML standard weights and weights for testing and adjustment of balances
- Compliance with ISO9001 and GLP standards assured



E1



Individual weights	Weights – without certificate – with wooden box		Weights – with SCS certificate – with wooden box	
	Part No.	Part No.	Part No.	Part No.
Nominal				
1 mg	159000	159001	158300	158301
2 mg	159010	159011	158310	158311
5 mg	159020	159021	158320	158321
10 mg	159030	159031	158330	158331
20 mg	159040	159041	158340	158341
50 mg	159050	159051	158350	158351
100 mg	159060	159061	158360	158361
200 mg	159070	159071	158370	158371
500 mg	159080	159081	158380	158381
1 g	159090	159091	158390	158391
2 g	159100	159101	158400	158401
5 g	159110	159111	158410	158411
10 g	159120	159121	158420	158421
20 g	159130	159131	158430	158431
50 g	159140	159141	158440	158441
100 g	159150	159151	158450	158451
200 g	159160	159161	158460	158461
500 g	159170	159171	158470	158471
1 kg	159180	159181	158480	158481
2 kg	159190	159191	158490	158491
5 kg	159200	159201	158500	158501
10 kg	159210	159211	158510	158511
20 kg	159220	159221	158520	158521
50 kg	159230	159231	158530	158531
Weight sets				
1 mg–500 mg	159300	159301	158800	158801
1 mg–200 g	159340	159341	158840	158841
1 mg–1 kg	159350	159351	158850	158851
1 mg–2 kg	11117614	11117615	11117624	11117625
1 mg–5 kg	11117616	11117617	11117626	11117627
1 g–50 g	159310	159311	158810	158811
1 g–500 g	159320	159321	158820	158821
1 mg–1 kg 2x	159360	159361		

E2



F1



Individual weights	Weights – without certificate – with wooden box		Weights – with SCS certificate – with wooden box		Weights – without certificate – with plastic box		Weights – with SCS certificate – with plastic box	
	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
Nominal								
1 mg	159410	159411	159411	159411	11119491	11119491	11119561	11119561
2 mg	159420	159421	159421	159421	11119492	11119492	11119562	11119562
5 mg	159430	159431	159431	159431	11119493	11119493	11119563	11119563
10 mg	159440	159441	159441	159441	11119494	11119494	11119564	11119564
20 mg	159450	159451	159451	159451	11119495	11119495	11119565	11119565
50 mg	159460	159461	159461	159461	11119496	11119496	11119566	11119566
100 mg	159470	159471	159471	159471	11119497	11119497	11119567	11119567
200 mg	159480	159481	159481	159481	11119498	11119498	11119568	11119568
500 mg	159490	159491	159491	159491	11119499	11119499	11119569	11119569
1 g	158600	158601	158601	158601	11119455	11119455	11119525	11119525
2 g	158610	158611	158611	158611	11119456	11119456	11119526	11119526
5 g	158620	158621	158621	158621	11119457	11119457	11119527	11119527
10 g	158630	158631	158631	158631	11119458	11119458	11119528	11119528
20 g	158640	158641	158641	158641	11119459	11119459	11119529	11119529
50 g	158650	158651	158651	158651	11119460	11119460	11119530	11119530
100 g	158660	158661	158661	158661	11119461	11119461	11119531	11119531
200 g	158670	158671	158671	158671	11119462	11119462	11119532	11119532
500 g	158680	158681	158681	158681	11119463	11119463	11119533	11119533
1 kg	158690	158691	158691	158691	11119464	11119464	11119534	11119534
2 kg	158700	158701	158701	158701	11119465	11119465	11119535	11119535
5 kg	158710	158711	158711	158711	11119466	11119466	11119536	11119536
10 kg	158720	158721	158721	158721	11119467	11119467	11119537	11119537
20 kg	158730	158731	158731	158731	11119468	11119468	11119538	11119538
50 kg	158740	158741	158741	158741				
Weight sets								
1 mg–500 mg	161700	161701	161701	161701	11119511	11119511	11119581	11119581
1 mg–200 g	158900	158901	158901	158901	11119512	11119512	11119582	11119582
1 mg–1 kg	158910	158911	158911	158911	11119513	11119513	11119583	11119583
1 mg–2 kg	11117802	11117803	11117803	11117803	11119514	11119514	11119584	11119584
1 mg–5 kg	11117804	11117805	11117805	11117805	11119515	11119515	11119585	11119585
1 g–50 g	158870	158871	158871	158871	11119516	11119516	11119586	11119586
1 g–500 g	158880	158881	158881	158881	11119517	11119517	11119587	11119587

*Adjusting Cavity

M1

Stainless steel



M1

Cast iron



Individual weights	Weights only		Weights with SCS certificate		Weights without certificate		Weights with SCS certificate	
	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	
Nominal								
5 kg	11116600	11116601	11116601	11116601	160900	160901	160901	160901
10 kg	11116610	11116611	11116611	11116611	160910	160911	160911	160911
20 kg	11116620	11116621	11116621	11116621	160920	160921	160921	160921
50 kg	11116630	11116631	11116631	11116631	160930	160931	160931	160931

Special weights (Disc; 100 kg, 200 kg...) available on request.

Weight accessories	Part No.
Tweezers for 1 mg–20 g	15900
Tweezers for 20 g–500 g	15901
Weight fork for 500 g–1 kg	222175
Weight fork for 2 kg	15902
Weight fork for 5 kg	15903
Weight grip for 10–20 kg	15904
Pair of leather gloves	72001
Glass bells on request	



www.mt.com/weights

For more information

Select the Right Comparator For the Calibration of Weights

In metrology, weights conforming to the guidelines of OIML are categorized into accuracy classes E1, E2, F1, F2, M1, M2 and M3. Calibration depends on three factors. Each of these factors may reach a maximum of one third of the tolerance range of the test object to be determined. The three factors are:

The uncertainty of the standard weight

The standard weight being used should be at least one class higher than the test object, e.g. E2 standard weights should be used to calibrate weight pieces in class F1.

The uncertainty of the adjustment of the test object

For economic reasons, the adjusting procedure is terminated when the systematic deviation of the weight being tested becomes less than one third of the tolerance limit.

The uncertainty of the weighing

This depends on the maximum repeatability of the balance and on the number of comparison weighings: with multiple weighings the mean value of the individual results will be closer to the true value than with a single weighing.

Also, when considering measurement uncertainties, the level of confidence must be matched to the requirements. With a level of confidence of 95 %, the true value is within the given range (mean value ± measurement uncertainty) in 95 out of 100 cases and it is outside this range in five cases.

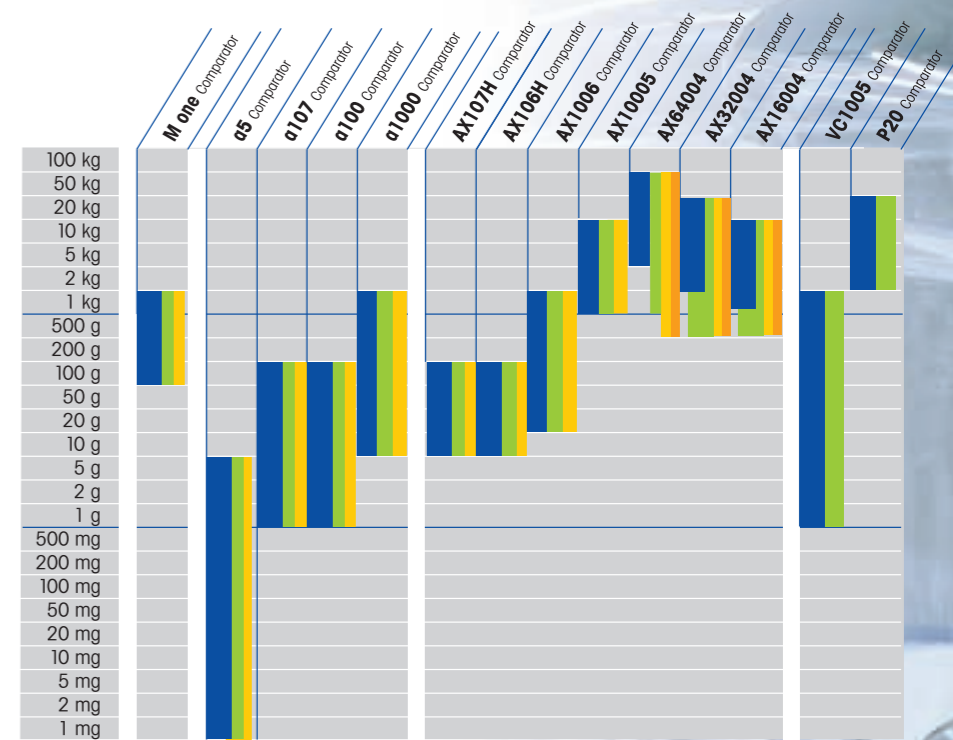
Tolerance limits

The maximum possible errors on verification for conventional masses are:

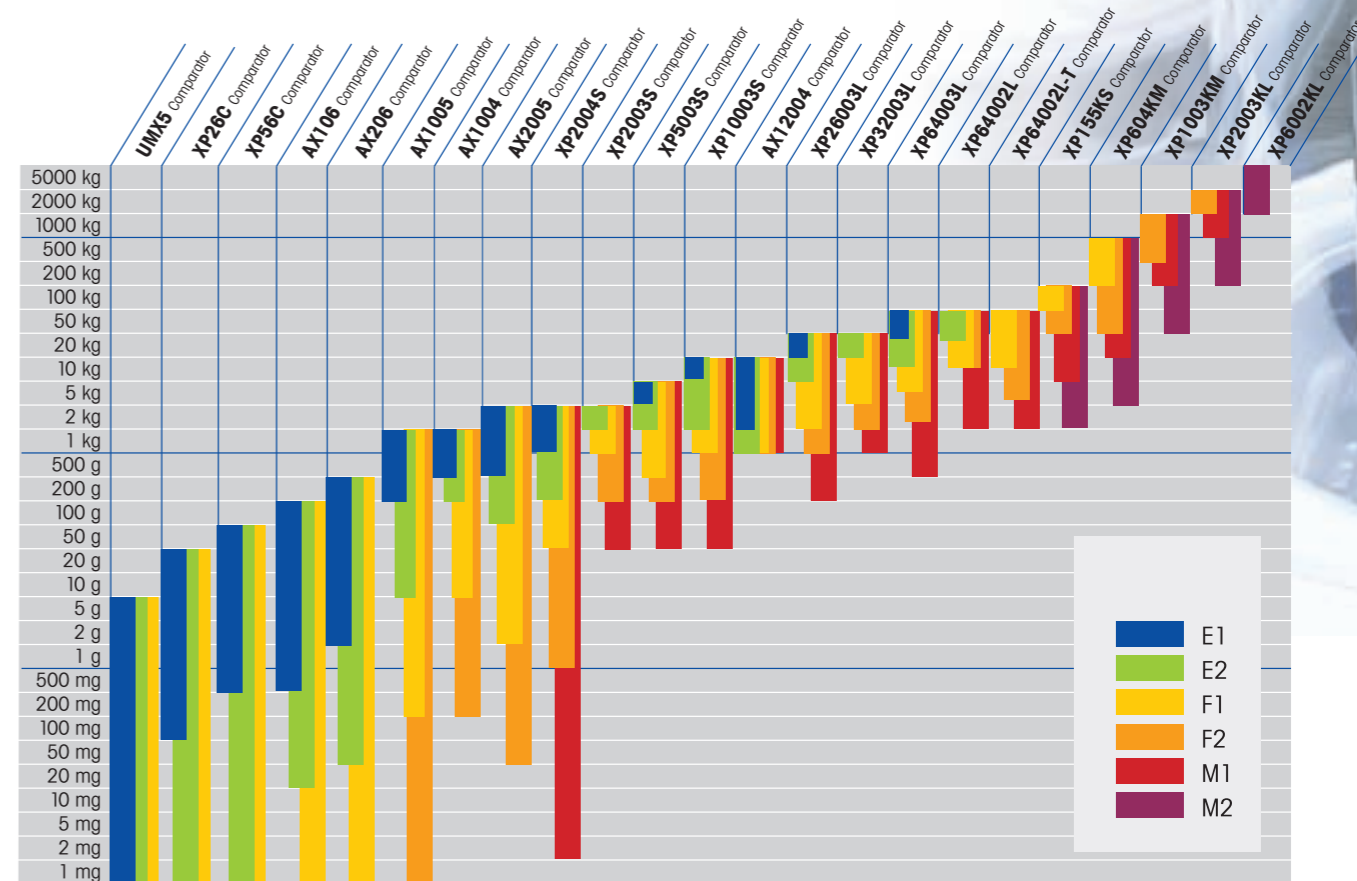
Weight	E1 ± mg	E2 ± mg	F1 ± mg	F2 ± mg	M1 ± mg	M2 ± mg	M3 ± mg
1mg	0.003	0.006	0.02	0.06	0.02		
2mg	0.003	0.006	0.02	0.06	0.2		
5mg	0.003	0.006	0.02	0.06	0.2		
10mg	0.003	0.008	0.025	0.08	0.5		
20mg	0.003	0.01	0.03	0.1	0.3		
50mg	0.004	0.012	0.04	0.12	0.4		
100mg	0.005	0.016	0.05	0.16	0.5	1.6	
200mg	0.006	0.02	0.06	0.2	0.6	2	
500mg	0.008	0.025	0.08	0.25	0.8	2.5	
1g	0.01	0.03	0.1	0.3	1	3	10
2g	0.012	0.04	0.12	0.4	1.2	4	12
5g	0.016	0.05	0.16	0.5	1.6	5	16
10g	0.02	0.06	0.2	0.6	2	6	20
20g	0.025	0.08	0.25	0.8	2.5	8	25
50g	0.03	0.10	0.3	1	3	10	30
100g	0.05	0.16	0.5	1.6	5	16	50
200g	0.1	0.3	1	3	10	30	100
500g	0.25	0.8	2.5	8	25	80	250
1kg	0.5	1.6	5	16	50	160	500
2kg	1	3	10	30	100	300	1000
5kg	2.5	8	25	80	250	800	2500
10kg	5	16	50	160	500	1600	5000
20kg	10	30	100	300	1000	3000	10000
50kg	25	80	250	800	2500	8000	25000
100kg		160	500	1600	5000	16000	50000
200kg		300	1000	3000	10000	30000	100000
500kg		800	2500	8000	25000	80000	250000
1000kg		1600	5000	16000	50000	160000	500000
2000kg			10000	30000	100000	300000	1000000
5000kg			25000	80000	250000	800000	2500000

Example:






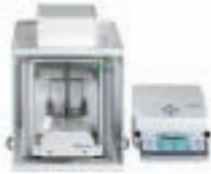


















The illustration below shows the application range of each model based on the assumption of 95 % confidence with five comparison weighings.



Robotic and automated comparators



Manual comparators

												
												
Maximum load	1001.5 g	111 g	5.1g	111 g	1109 g	111 g	111 g	1011 g	10011 g	16260 g	32260 g	64260 g
Readability	100 ng	100 ng	100 ng	1 µg	10 µg	100 ng	1 µg	1 µg	10 µg	0.1 mg	0.1 mg	0.1 mg
Repeatability at nominal load (5x ABA, measured at)	500 ng	980 ng	0-1 g: 150 ng 1-2 g: 250 ng 2-5 g: 400 ng	1.6 µg	10 µg	800 ng	1.5 µg	2 µg	20 µg	0.2 mg	0.2 mg	0.4 mg
Repeatability typical ABA	300 ng	850 ng	0-1 g: 50 ng 1-2 g: 150 ng 2-5 g: 350 ng	1.3 µg	5 µg	600 ng	1.2 µg	1.5 µg	15 µg	0.1 mg	0.1 mg	0.2 mg
Electrical weighing range	1.5 g	0...11 g	0...5.1 g	0...11 g	0...109 g	0...11 g	0...11 g	0...11 g	0...11 g	0...260 g	0...260 g	0...260 g
Dial weights	External	50, 30, 10, 10 g	-	50, 30, 10, 10 g	500, 300, 100, 100 g	50, 30, 10, 10 g	50, 30, 10, 10 g	50, 30, 10, 10 g	5, 3, 1 kg	0.25, 0.25, 0.25, 0.25, 0.5, 0.5, 2, 2, 2, 4, 4 kg	0.25, 0.25, 0.25, 0.25, 0.5, 0.5, 2, 2, 2, 8, 8, 4, 4, kg	0.25, 0.25, 0.25, 0.25, 0.5, 0.5, 2, 2, 2, 8, 8, 8, 8, 8, 8 kg
Linearity (electrical weighing range)	2 µg	±8 µg	±4 µg	±8 µg	±12 µg	±8 µg	±8 µg	±8 µg	±0.05 mg	±0.5 mg	±0.5 mg	±0.5 mg
Eccentric load deviation (at test load)	0.0 ng (1 g)	0.0 ng (10 g)	0.0 ng (5 g)	0.0 µg (10 g)	0.0 µg (100 g)	0.0 ng (10 g)	0.0 µg (10 g)	0.0 µg (10 g)	0.0 µg (10 g)	0.0 mg (260 g)	0.0 mg (260 g)	0.0 mg (260 g)
Settling time*	30 s	5 s	5 s	5 s	5 s	5 s	5 s	5 s	5 s	5 s	5 s	5 s
Adjustment built-in	motorized	motorized	motorized	motorized	motorized	motorized	motorized	motorized	motorized	motorized	motorized	motorized
Adjustment with external weight	-	10 g	5 g	10 g	100 g	10 g	10 g	10 g	10 g	200 g	200 g	200 g
Standard equipment												
Weight handler	Turntable, 4 or 6 positions	3-axis robot	3-axis robot	3-axis robot	3-axis robot	Turntable, 4 positions	Turntable, 4 positions	Turntable, 4 positions	Turntable, 4 positions	Turntable, 4 positions	Turntable, 4 positions	Turntable, 4 positions
Weight magazin	-	30 positions	36 positions	30 positions	18 positions	-	-	-	-	-	-	-
Software and controller	Windows®, standard	Windows®, standard	Windows®, standard	Windows®, standard	Windows®, standard	Windows®, standard	Windows®, standard	Windows®, standard	Windows®, standard	Windows®, standard	Windows®, standard	Windows®, standard
Vacuum chamber	Standard – round	-	-	-	-	-	-	-	-	-	-	-
Draft shield	-	Motorized	Motorized	Motorized	Motorized	Motorized	Motorized	Motorized	Standard	Standard	Standard	Standard
Self centering pan	Integrated	-	-	-	-	Integrated	Integrated	Integrated	Integrated	Integrated	Integrated	Integrated
Weighing pan	Hanging pan	Fork-shaped	Fork-shaped	Fork-shaped	Fork-shaped	Hanging pan	Hanging pan	Hanging pan	Hanging pan	Levelmatic	Levelmatic	Levelmatic
SmartScreen	Touch Screen	Touch Screen	Touch Screen	Touch Screen	Touch Screen	Touch Screen	Touch Screen	Touch Screen	Touch Screen	Touch Screen	Touch Screen	Touch Screen
SmartSens	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
LevelControl	-	-	-	-	-	-	-	-	-	-	-	-
Separate display	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Admissible environmental conditions												
Temperature (°C)	17-27	17-27	17-27	17-27	17-27	17-27	17-27	17-27	17-27	17-27	17-27	17-27
Max. temperature change (°C/24h)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Relative Humidity (%)	45-60	45-60	45-60	45-60	45-60	45-60	45-60	45-60	45-60	45-60	45-60	45-60
Dimensions												
Balance (WxDxH, mm)	4-Pl.: 274 x 409 x 620 6-Pl.: 344 x 440 x 620	1430 x 890 x 1730	1430 x 890 x 1730	1430 x 890 x 1730	1430 x 890 x 1730	346 x 514 x 432	346 x 514 x 432	346 x 514 x 432	315 x 720 x 850	1200 x 1200 x 1500	1200 x 1200 x 1500	1200 x 1200 x 1500
Display unit (WxDxH, mm)	226 x 370 x 155	224 x 366 x 94	224 x 366 x 94	224 x 366 x 94	224 x 366 x 94	226 x 370 x 155	226 x 370 x 155	226 x 370 x 155	226 x 370 x 155	224 x 366 x 94	224 x 366 x 94	224 x 366 x 94
Balance weight (kg)	300	290	290	290	290	23	23	25	85	290	290	290
Object Diameter (D, mm)	cylindrical: 22-90 mm spherical: 40-100 mm	6-26 mm	cylindrical: 4-14 mm wire weight: 5.5-18mm sheet weight: 4-14 mm	6-26 mm	10-60 mm	8-30 mm	8-30 mm	12-60 mm	16-110 mm	50-380 mm	50-380 mm	50-380 mm
Object Height (H, mm)	100 mm	50 mm	cylindrical: 16 mm wire weight: 6 mm	50 mm	85 mm	70 mm	70 mm	95 mm	185 mm	350 mm	350 mm	350 mm
Control unit for weight handler (WxDxH, mm)	202 x 197 x 92	-	-	-	-	226 x 370 x 155	226 x 370 x 155	226 x 370 x 155	226 x 370 x 155	-	-	-
Vacuum chamber (WxDxH, mm)	684 x 884 x 930	-	-	-	-	-	-	-	-	-	-	-
Rack for control & display unit	-	-	-	-	-	-	-	-	-	Standard	Standard	Standard
Accessories												
Reference weight certified	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Software MC Link 11116504	-	-	-	-	-	-	-	-	-	-	-	-
Disc weights	-	-	-	-	-	-	-	Optional	Optional	-	-	-
Klimet A30 certified 00222012	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Temperature sensor for Klimet A30 (5m) 00222014	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Professional software for weight dissemination 11132540	-	Optional	Optional	Optional	Optional	-	-	-	-	-	-	-

Other accessories on request

* shortest settling time of weighing pan

Important

The stated specifications and technical data apply only under good ambient conditions. Disruptive factors at the place of installation such as strong drafts (especially from air conditioning equipment), excessive vibrations, physical effects of the items being weighed (e.g. magnetic fields or electrostatic charges), or ambient conditions outside the allowable tolerances, may have adverse effects on the specifications.



	UMX5 Comparator	XP26C Comparator	XP56C Comparator	AX106 Comparator	AX206 Comparator	AX1005 Comparator	AX1004 Comparator	AX2005 Comparator	XP2003S Comparator	XP2004S Comparator	XP5003S Comparator	XP10003S Comparator	AX12004 Comparator
Maximum load	5.1 g	22 g	52 g	111 g	211 g	1109 g	1109 g	2109 g (min. 998 g)	2300 g	2300 g	5100 g	10100 g	12111 g
Readability	0.1 µg	1 µg	1 µg	1 µg	1 µg	0.01 mg	0.1 mg	0.01 mg	1 mg	0.1 mg	1 mg	1 mg	0.1 mg
Repeatability at nominal load (5x ABA, measured at)	0.40 µg (0.2-5 g)	1.5 µg (20 g)	3 µg (50 g)	3 µg (100 g)	4 µg (200 g)	0.02 mg (1kg)	0.07 mg (1kg)	0.04 mg (2kg)	1 mg (2 kg)	0.1 mg (2 kg)	0.8 mg (5 kg)	1 mg (10 kg)	0.25 mg (10 kg)
Repeatability at low load (5x ABA, measured at)	0.25 µg (0-0.2 g)	0.7 µg (1g)	0.7 µg	-	-	-	-	-	0.8 mg (100 g)	0.08 mg (100 g)	0.6 mg (200 g)	0.8 mg (500 g)	-
Repeatability typical ABA	0.2 µg + 3x10 ⁻⁸ • Rgr	0.5 µg + 4x10 ⁻⁸ • Rgr	0.5 µg + 4x10 ⁻⁸ • Rgr	2 µg (100 g)	2.5 µg (200 g)	0.015 mg (1kg)	0.05 mg (1kg)	0.025 mg (2kg)	0.6mg + 9x10 ⁻⁸ • Rgr	0.06mg + 9x10 ⁻⁹ • Rgr	0.4mg + 4x10 ⁻⁸ • Rgr	0.6mg + 1.7x10 ⁻⁸ • Rgr	0.15 mg (10 kg)
Electrical weighing range	0...5.1 g	0...22 g	0...52 g	0...11 g	0...11 g	0...109 g	0...109 g	0...109 g	0...2300 g	0...2300 g	0...5100 g	0...10100 g	0...111 g
Dial weights	-	-	-	50, 30, 10, 10 g	50, 30, 10, 10 g; 100 g disc weight	500, 300, 100, 100 g	500, 300, 100, 100 g	500, 300, 100, 100 g	-	-	-	-	5, 3, 2, 1, 1 kg
Linearity (electrical weighing range)	±4 µg	±0.006 mg	±0.02 mg	±8 µg	±8 µg	±0.12 mg	±0.15 mg	±0.12 mg	±5 mg	±1 mg	±3 mg	±7 mg	±0.6 mg
Eccentric load deviation (at test load)	5 µg (2.5 g)	0.00 mg (20 g)	0.00 mg (50 g)	0.0 µg (10 g)	0.0 µg (10 g)	0.0 µg (100 g)	0.0 µg (100 g)	0.0 µg (100 g)	4.0 mg (1 kg)	0.0 mg (1 kg)	0.0 mg (2 kg)	0.0 mg (5 kg)	0.0 mg (10 kg)
Settling time*	5 s	3.5 s	3.5 s	5 s	5 s	5 s	5 s	5 s	3.5 s	3.5 s	3.5 s	3.5 s	10 s
Adjustment built-in	ProFACT	ProFACT	ProFACT	ProFACT	ProFACT	ProFACT	ProFACT	ProFACT	proFACT	proFACT	proFACT	proFACT	Built in 100g E2
Adjustment with external weight	5 g	20 g	50 g	10 g	10 g	100 g	100 g	100 g	500 g	500 g	1000 g	1000 g	100 g
Standard equipment													
Application software	Weighing	Weighing, WeighCom	Weighing, WeighCom	Weighing, WeighCom	Weighing, WeighCom	Weighing, WeighCom	Weighing, WeighCom	Weighing, WeighCom	Weighing, WeighCom	Weighing, WeighCom	Weighing, WeighCom	Weighing, WeighCom	Weighing, WeighCom
Draft shield	Motorized	2 x motorized	2 x motorized	Motorized	Motorized	Motorized	Motorized	Motorized	Standard	Standard	Standard	Standard	Standard
Self centering pan	-	Hanging pan	Hanging pan	Hanging pan	Hanging pan	Hanging pan	Hanging pan	Hanging pan	Optional	LevelMatic	LevelMatic	LevelMatic	Hanging Pan
Below the balance weighing	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	-
Weighing pan	Round & Hook	Hanging & Grid	Hanging & Grid	Hanging	Hanging	Hanging	Hanging	Hanging	Square	LevelMatic	LevelMatic	LevelMatic	Hanging
SmartScreen	Touch Screen	Color Touch Screen	Color Touch Screen	Touch Screen	Touch Screen	Touch Screen	Touch Screen	Touch Screen	Color Touch Screen	Color Touch Screen	Color Touch Screen	Color Touch Screen	Touch Screen
SmartSens	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
LevelControl	-	Standard	Standard	-	-	-	-	-	Standard	Standard	Standard	Standard	-
Separate display	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Admissible environmental conditions													
Temperature (°C)	10...30	10...30	10...30	10...30	10...30	10...30	10...30	10...30	10...30	10...30	10...30	10...30	10...30
Max. temperature change (°C/24h)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Relative Humidity (%)	40-70	40-70	40-70	40-70	40-70	40-70	40-70	40-70	40-70	40-70	40-70	40-70	40-70
Dimensions													
Balance (WxDxH, mm)	128 x 287 x 113	263 x 487 x 322	263 x 487 x 322	241 x 353 x 291	241 x 353 x 291	241 x 353 x 291	241 x 353 x 291	241 x 353 x 291	214 x 260 x 363	214 x 260 x 363	214 x 260 x 363	390 x 480 x 620	837 x 614 x 952
Display unit (WxDxH, mm)	224 x 366 x 94	194 x 133 x 58	194 x 133 x 58	224 x 366 x 94	224 x 366 x 94	224 x 366 x 94	224 x 366 x 94	224 x 366 x 94	194 x 133 x 58	194 x 133 x 58	194 x 133 x 58	194 x 133 x 58	224 x 366 x 94
Weighing pan (mm)	∅ 14 Hook / 13	∅ 35 / 40 x 40	∅ 35 / 40 x 40	∅ 60 (45)	∅ 60 (45)	∅ 100	∅ 100	∅ 100	125x125	∅ 130	∅ 130	∅ 130	∅ 220
Balance weight (kg)	4.9 kg	11.5 kg	11.5 kg	13.5 kg	13.5 kg	13.5 kg	13.5 kg	13.5 kg	8.3 kg	8.3 kg	8.3 kg	17.2 kg	62.5 kg
Object Diameter (D, mm)	0...9 / 13	0...35	0...35	0...45	0...45	0...80	0...80	0...80	0...125	0...130	0...130	0...130	34...220
Object Height (H, mm)	0...26 / 50	0...72 (235)	0...72 (235)	0...85 (120)	0...85 (120)	0...135	0...135	0...135	0...248	0...228	0...228	0...335	0...230
Accessories													
Reference weight certified	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Software MC Link 11116504	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Klimet A30 certified 00222012	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Temperature sensor for Klimet A30 (5m) 00222014	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
BT-P42 printer wireless bluetooth 11132540	-	Optional	Optional	-	-	-	-	-	Optional	Optional	Optional	Optional	-
RS-P42 printer RS232 00229265	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
External draft shield	Optional	-	-	Standard	Standard	Optional	Optional	Optional	Optional	Optional	Optional	-	-

Other accessories on request

*shortest settling time of weighing pan

Important

The stated specifications and technical data apply only under good ambient conditions. Disruptive factors at the place of installation such as strong drafts (especially from air conditioning equipment), excessive vibrations, physical effects of the items being weighed (e.g. magnetic fields or electrostatic charges), or ambient conditions outside the allowable tolerances, may have adverse effects on the specifications.



Draft shield for AX1005 Comparator

Dimensions (B x T x H mm)	342 x 514 x 350
Weight	7.5 kg

Draft shield XP W12

Dimensions (B x T x H mm)	350 x 450 x 450
Weight	7.5 kg



Bluetooth Printer BT-P42

Dimensions (B x T x H mm)	157 x 210 x 85
Weight	1.5 kg



XP26003L Comparator



XP64003L Comparator



XP32003L Comparator



XP64002L Comparator



XP64002L-T Comparator



XP155KS Comparator



XP604KM Comparator



XP1003KM Comparator



XP2003KL Comparator



XP6002KL Comparator



Maximum load	26.1 kg	64.1 kg	32.1 kg	64.1 kg	64.1 kg	150 kg	600 kg	1100 kg	2200 kg	6000 kg
Readability	1 mg	5 mg	5 mg	10 mg	10 mg	0.05 g	0.1 g	0.5 g	1 g	10 g
Repeatability at nominal load (5x ABA, measured at)	3 mg (26 kg)	8 mg (60 kg)	10 mg (30 kg)	25 mg(60 kg)	30 mg (60 kg)	0.15 g (100 kg)	0.3 g (500 kg)	3 g (1000 kg)	10 g (2000 kg)	100 g (5000 kg)
Repeatability at low load (5x ABA, measured at)	2 mg (1kg)	4 mg (5 kg)	5 mg (2 kg)	10 mg (5 kg)	15 mg (5 kg)	0.1 g (2 kg)	0.2 g (10 kg)	2 g (20 kg)	6 g (20 kg)	60 g (100 kg)
Repeatability typical ABA	1.5mg + 6x10 ⁻⁸ •Rgr	3.5 mg + 8x10 ⁻⁸ •Rgr	4 mg + 2x10 ⁻⁷ •Rgr	8 mg + 3x10 ⁻⁷ •Rgr	12 mg + 6x10 ⁻⁷ •Rgr	0.06 g + 4.2x10 ⁻⁷ •Rgr	0.15 g + 1.0x10 ⁻⁷ •Rgr	1.5 g + 5.3x10 ⁻⁷ •Rgr	3.5 g + 1.3x10 ⁻⁶ •Rgr	45 g + 3.0x10 ⁻⁶ •Rgr
Electrical weighing range	0...26100 g	0...64100 g	0...32100 g	0...64100 g	0...64100 g	0...150 kg	0...600 kg	0...1100 kg	0...2200 kg	0...6000 kg
Linearity (electrical weighing range)	±25 mg	±50 mg	±40 mg	±50 mg	±50 mg	±2 g	±10 g	±20 g	±100 g	±300 g
Eccentric load deviation (at test load)	0.0 g (10 kg)	0.0 g (25 kg)	0.25 g (10 kg)	0.4 g (25 kg)	0.5 g (25 kg)	5 g (50 kg)	40 g (200 kg)	40 g (200 kg)	120 g (1000 kg)	240 g (2000 kg)
Settling time*	8...12 s	8...12 s	8...12 s	8...12 s	8...12 s	15 s	15 s	15 s	15 s	15 s
Adjustment built-in	proFACT	proFACT	proFACT	proFACT	proFACT	–	–	–	–	–
Adjustment with external weight	5 kg	10 kg	5 kg	10 kg	10 kg	50 kg	200 kg	400 kg	1000 kg	2000 kg
Standard equipment										
Application software	Weighing, WeighCom	Weighing, WeighCom	Weighing, WeighCom	Weighing, WeighCom	Weighing, WeighCom	Weighing, WeighCom	Weighing, WeighCom	Weighing, WeighCom	Weighing, WeighCom	Weighing, WeighCom
Draft shield	Standard	Standard	Optional	Optional	–	–	–	–	–	–
Self centering pan	Integrated	Integrated	–	–	–	LevelMatic 1000	LevelMatic 1000	LevelMatic 5000	LevelMatic 5000	LevelMatic 5000
Below the balance weighing	Standard	Standard	Standard	Standard	–	–	–	–	–	–
Weighing pan	Levelmatic	Levelmatic	Square	Square	Round	Square	Square	Square	Square	Square
SmartScreen	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
SmartSens	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
LevelControl	Standard	Standard	Standard	Standard	Standard	–	–	–	–	–
Separate display	Standard	Standard	Standard	Standard	integrated	Standard	Standard	Standard	Standard	Standard
Admissible ambient conditions										
Temperature (°C)	10...30	10...30	10...30	10...30	10...30	10...30	10...30	10...30	10...30	10...30
Max. temperature change (°C/24h)	0.5	0.5	0.5	0.5	0.5	1	1	1	1	1
Relative Humidity (%)	40-70	40-70	40-70	40-70	40-70	40-70	40-70	40-70	40-70	40-70
Dimensions										
Balance (WxDxH, mm)	360 x 280 x 185	360 x 280 x 185	360 x 280 x 130	360 x 280 x 130	845 x 445 x 295	800 x 600 x 130	1000 x 800 x 115	1000 x 800 x 115	1500 x 1250 x 182	1500 x 1250 x 182
Display unit (WxDxH, mm)	194 x 133 x 58	194 x 133 x 58	194 x 133 x 58	194 x 133 x 58	194 x 133 x 58	194 x 133 x 58	194 x 133 x 58	194 x 133 x 58	194 x 133 x 58	194 x 133 x 58
Weighing pan (mm)	∅ 220	∅ 220	360 x 280	360 x 280	∅ 220	800 x 600	1000 x 800	1000 x 800	1500 x 1250	1500 x 1250
Balance weight (kg)	15.7 kg	15.7 kg	10.7 kg	10.7 kg	22 kg	40 kg	91 kg	91 kg	353 kg	353 kg
Object Diameter (D, mm)	0...220	0...220	0...280	0...280	0...220	0...600	0...800	0...800	0...1250	0...1250
Object Height (H, mm)	0...395	0...395	–	–	–	–	–	–	–	–
Accessories										
Reference weight certified	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Software MC Link 11116504	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Klimet A30 certified 00222012	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Temperature sensor for Klimet A30 (5m) 00222014	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
BT-P42 printer wireless bluetooth 11132540	Optional	Optional	Optional	Optional	Optional	–	–	–	–	–
RS-P42 printer RS232 00229265	Optional	Optional	Optional	Optional	Optional	GA46	GA46	GA46	GA46	GA46
External draft shield	–	–	Optional	Optional	–	–	–	–	–	–
Terminal IND690	–	–	–	–	–	Optional	Optional	Optional	Optional	Optional

Other accessories on request

* shortest settling time of weighing pan



Draft shield	XP W64
Dimensions (B x T x H mm)	550 x 470 x 580
Weight	9.5 kg

Levelmatic®

By using Levelmatic pans the negative effect of cornerload errors is reduced to a minimum.



	LevelMatic 1000	LevelMatic 5000
Contact diameter	460 mm	900 mm
Weight	23.5 kg	90 kg

IND690

Corrosion-resistant – dustproof: The IND690 application terminal will withstand all industrial environments, whether the challenge comes from aggressive weighing samples, cleaning agents or a wet, corrosive, dusty or hazardous environment. The IND690 will provide reliable, precise weighing results and error-free functions for years to come.



VC1005X Volume



P20 Density

OIML weights	1 g – 1 kg	2 kg – 20 kg
Volume uncertainty (typical)	0.00015 cm ³	0.3 – 0.45 cm ³
Density uncertainty (typical)	0.0012 kg/m ³	1 – 15 kg/m ³
Readability	0.01 mg	–
Electrical weighing range	109 g	–
Repeatability of nominal load (5x ABA, measured at)	< 0.05mg (1kg)	–
Linearity (electrical weighing range)	±0.12 mg	–
Dial weights	500, 300, 100, 100 g	–
Settling time*	15	–
Adjustment with external weight	100 g	–
Standard equipment		
Weight handler	Turntable, 4 positions	–
Object Diameter (D, mm)	12...94 mm	55...127
Object Height (H, mm)	1...94 mm	1...255
Sphere diameter	12...94 mm	90...135
Software	Standard	Standard
Controller	Windows®	Optional
Draft shield	Standard	–
Hanging weighing pan	Standard	–
TouchScreen	Standard	–
SmartSens	Standard	–
Disk weights (support for weights < 100 g)	4 pieces	–
Precision thermometer	Standard	Standard
Fluid	Standard (first filling), Fluorinert FC40	Dist. Water
Container	–	Standard
Filling system	–	Standard (+ syringe, gloves)
Admissible environmental conditions		
Temperature (°C)	17 – 27	17 – 27
Max. temperature change (°C/24h)	0.2	0.2
Relative Humidity (%)	40 – 70	40 – 70
Dimensions		
Equipment (WxDxH, mm)	810 x 760 x 1500	300 x 250 x 450
Display unit (WxDxH, mm)	224 x 366 x 94	
Equipment net weight	94 kg	6 kg
Accessories		
Reference weight certified	Optional	Optional
10kg F1 Disc weights	–	Optional
XP26003L 11120685	–	Optional
XP32003L 11120686	–	Optional
XP64003L 11120687	–	Optional

Other accessories on request
*shortest settling time of weighing pan

Important The stated specifications and technical data apply only under good ambient conditions. Disruptive factors at the place of installation such as strong drafts (especially from air conditioning equipment), excessive vibrations, physical effects of the items being weighed (e.g. magnetic fields or electrostatic charges), or ambient conditions outside the allowable tolerances, may have adverse effects on the specifications.

Klimet A30/A30V climate station



Temperature (°C)

Resolution	0.001	[°C]
Range	15..25	[°C]
Accuracy	±0.05	[°C]

Relative Humidity

Resolution	0.01	[%]
Range	20..80	[%]
Accuracy	±0.15	[%]

Pressure

Resolution	0.001	[hPa]
Range	600...1060	[hPa]
Accuracy	±0.04	[hPa]

Klimet A30 sensing system including

- Air pressure sensor
- Dew point mirror system
- 1 air temperature sensor
- 4 temperature sensor inputs
- Data logging software including
 - Air density calculation CIPM 81/91
 - Serial communication
 - Direct data link for specific METTLER TOLEDO mass comparator software

Optional

- Pressure tight system Klimet A30V for special applications as vacuum (e.g. M_one)
- CO₂ content sensor calibrated
- Temperature sensor 2.5 m or 5.0 m cable length
- MCLink mass comparator control software for online air buoyancy correction

Special weight sets

für AX1006		für AX10005	
Nominal weight	Contents	Nominal weight	Contents
100 g	•	1 kg	•
200 g	••	2 kg	••
–		5 kg	•



Special weight sets

Weight set for AX1006, for determination of the first weight decade kg to 100g, comprising 2x200g and 1x100g disk weights.
Weight set for AX10005, for determination of the first weight decade 1kg to 10kg, comprising 1x5kg, 2x2kg and 1x1kg cylindrical weights.

Cumulated expertise

We are happy to make the technical experience of our users and ours available to you:



Glossary of Weighing Terms
A Practical Guide to the Terminology of Weighing.

Fundamentals of Mass Determination

Compiled under the auspices of Prof. Dr. M. Kochsiek, Federal Institute of Physics and Technology PTB, Braunschweig and Berlin.

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