

Robotic Mass Comparators



Automate Weight Calibration

Increase throughput

Reduce errors

Simplify dissemination



Automated Solutions

Go Beyond Manual Weight Calibration

METTLER TOLEDO

Automated Solutions

Go Beyond Manual Weight Calibration

Manual weight calibration is a time-consuming and labor-intensive process. It requires precise weight handling, and the highly repetitive nature of the task demands the utmost concentration to prevent weights being mixed up and to avoid errors in transcription or calculation of results.

Automating the mass comparison process with METTLER TOLEDO's e_Line and a_Line mass comparators removes such errors entirely. With weights, results and calculations all handled automatically, additional sources of errors are reduced to the very minimum. Quality and traceability are assured in significantly less time.

Increase throughput



- Fully automated calibration of weights and weight sets from 0.05 mg up to 20 kg
- Up to 100 weights in one automated run
- Continuous operation 24 hours per day
- System notification by email or text message

Reduce errors



- No mix ups of weights in one-to-one comparisons or disseminations
- Negligible eccentricity error thanks to precise weight placement
- Automated data handling eliminates transcription errors

Simplify dissemination



- Full traceability to your primary standard by combining robotic mass comparators to disseminate any decade from 1 kg down to 0.05 mg
- Up to 110 million measurement points ensure the smallest possible uncertainties



Perfect for weight dissemination, the a10XL automated mass comparator delivers the highest result accuracy with smallest uncertainties.

Save time and reduce cost



- High throughput
- Consistently high quality results
- Operators gain time to focus on other tasks
- Efficient workflow boosts productivity
- Excellent return-on-investment



Download our free white paper to learn more about how automation can simplify your weight calibration workflow.

► www.mt.com/lab-mass-calibration

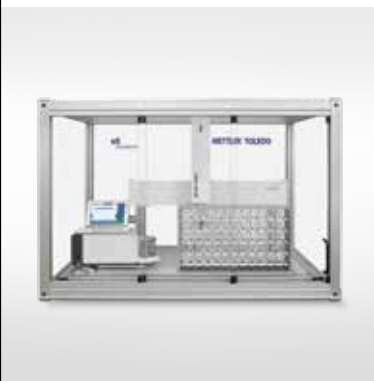
Flexible Solutions

Meet Your Calibration Needs

Automated weight calibration with METTLER TOLEDO's robotic mass comparators meets today's increasing demands for lean laboratory practices. Accurate and efficient calibration of up to 100 weights in one automated run delivers substantial time and cost savings.

The flexible e_Line and a_Line robotic systems can be combined according to your specific requirements to create a high-throughput weight calibration system suitable for one-to-one calibrations or for weight disseminations for weights from 0.05 mg up to 20 kg. The Efficiency Pack software option, in conjunction with an environmental monitoring station, automatically processes all mass calibration results and compensates for the influences of air buoyancy.

Tabletop e_Line



- Weights of any OIML class and shape from 1 mg up to 100 g
- Up to 60 weights in one run
- Belt-driven vibration-free robotic unit
- Easy to use control software

Full-size a_Line



- Weights of any OIML class and shape from 0.05 mg up to 20 kg
- Up to 100 weights in one run
- Ball-bearing vibration-free robotic unit
- Easy to use control software

Accessories & Options

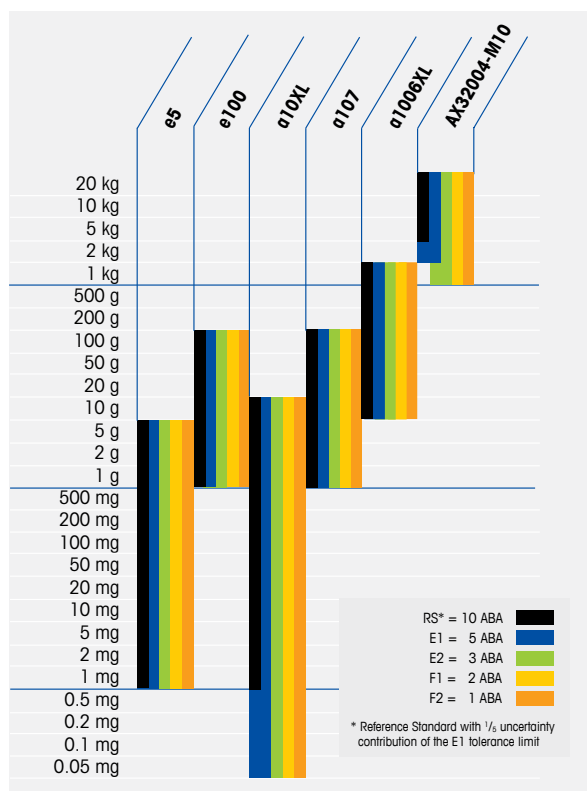


- Environmental monitoring station
- Efficiency Pack software options:
 - Task management
 - Air buoyancy compensation
- Control Professional software for dissemination
- Reference weight sets
- Dedicated weight carriers



The e_Line tabletop robotic mass comparator is ideal as the first step to automating your weight calibration workflow.

OIML Application Ranges



The illustration shows the application ranges according to the OIML R111 recommendation at zero meter altitude. In cases where the application range is limited by the physical size of the weight, additional support plates may be required to accommodate smaller weights.

Please contact us for a personal consultation to discuss your individual needs.

Technical Specifications

Robotic Mass Comparators



Tabletop e_Line	e5	e100
Part Number	30402190	30402191
Maximum Load	6.1 g	111 g
Readability	0.1 µg	1 µg
Repeatability at Nominal Load 5 ABA	0 - 1 g: 0.15 µg > 1 - 2 g: 0.25 µg > 2 - 6 g: 0.4 µg	1.6 µg
Repeatability Typical 5 ABA	0 - 1 g: 0.08 µg > 1 - 2 g: 0.12 µg > 2 - 6 g: 0.25 µg	1.3 µg
Electrical Weighing Range	0..6.1 g	0..11 g
Substitution Weights		50, 30, 10, 10 g
Linearity (Electrical Weighing Range)	± 2 µg	± 8 µg
Eccentric Load Deviation	Eliminated through integrated centering aids	
Settling Time	20 s	20 s
Weight Magazine	60 positions	27 positions
Automated Adjustment	Internal & external	Internal & external

System Configuration

Robotic Design	Tabletop	Tabletop
eControl_Professional	Optional	Optional
Efficiency Pack	Optional	Optional

Dimensions

System (W x D x H, mm)	1080 x 700 x 760	1280 x 900 x 760
System Weight (kg)	50	60
Object Diameter (D, mm)	4 - 14	6 - 26
Object Height (H, mm)	16	50





Selected Key Accessories

Selected Key Accessories	Part No.
Software Control Professional	11107519
Software Efficiency Pack	11116875
ClimaLog30 DAkkS Certified	30078423
DataLog30 DAkkS Certified w. 2 Temp. Sensors	30078424
Klimet A30 inkl 1 Temp. Sensor non-Certified	222011
Klimet A30 inkl 1 Temp. Sensor DAkkS Certified	222012
Micro Weight Set incl. Tools	30078807

Further accessories on request

Selected Key Accessories

Selected Key Accessories	Part No.
Weight Set 1 mg - 200 g E1 - Certified	159341
Weight Set 1 mg-1000 g E1 - Certified	159351
Nylon Gloves, Suitable for all Environments	11123098
Tweezers, Bent Tips, Length 210 mm	15901
Air Bellow, for Weight Cleaning	11116548
Brush, Suitable for all Environments	158799
Micro Fibre Cloth, Suitable for all Environments	158798

				
Full-size a_Line	a10XL	a107	a1006XL	AX32004-M10
Part Number	30370207	11107547	30404059	11116962
Maximum Load	10.1 g	111 g	1011 g	21'260 g
Readability	0.1 µg	0.1 µg	1 µg	0.1 mg
Repeatability at Nominal Load 5 ABA	0 - 1 g: 0.15 µg > 1 - 2 g: 0.25 µg > 2 - 6 g: 0.4 µg > 6 - 10 g: 0.6 µg	1 µg	10 - 100 g: 3 µg > 100 - 500 g: 4.5 µg > 500 - 1000 g: 8 µg	0.2 mg
Repeatability Typical 5 ABA	0 - 1 g: 0.08 µg > 1 - 2 g: 0.12 µg > 2 - 6 g: 0.25 µg > 6 - 10 g: 0.4 µg	0.9 µg	10 - 100 g: 2 µg > 100 - 500 g: 3.5 µg > 500 - 1000 g: 5 µg	0.1 mg
Electrical Weighing Range	0...10.1 g	0...11 g	0...11 g	0...260 g
Substitution Weights		50, 30, 10, 10 g	500, 300, 200, 100, 50, 30, 10, 10 g	4x 0.25, 2x 0.5, 2x 2, 2x 4 kg
Linearity	± 2 µg	± 8 µg	± 8 µg	± 0.5 mg
Eccentric Load Deviation	Eliminated through integrated centering aids			
Settling Time	20 s	30 s	30 s	20 s
Weight Magazine	100 positions	30 positions	21 positions	10 positions
Automated Adjustment	Internal & external	Internal & external	Internal & external	Internal & external

System Configuration

Robotic Design	Full-size	Full-size	Full-size	Full-size
aControl_Professional	Optional	Optional	Optional	
Efficiency Pack	Optional	Optional	Optional	Optional

Dimensions

System (W x D x H, mm)	1672 x 897 x 1870	1430 x 890 x 1730	1672 x 897 x 1870	3500 x 1400 x 2158
System Weight (kg)	290	290	290	480
Object Diameter (D, mm)	4 - 14	6 - 26	10 - 60	48 - 200; 200 x 234
Object Height (H, mm)	19	50	85	235

				
Environment Stations	ClimaLog30	DataLog30	Klimet A30	
	30078423 (Certified)	30078424 (Certified)	222011 (Certified) 222012 (non-Certified)	
Application Range	E1 E2* F1 .. M3*	0 .. 330 m 0 .. 800 m 0 .. 2000 m	E1 E2* F1 .. M3*	0 .. 2000 m 0 .. 2000 m 0 .. 2000 m

* without weight density determination

METTLER TOLEDO Services

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We offer you a wide range of services across the full product lifecycle so that you get the most out of your valuable investment.



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Maintenance & Optimization

- Professional installation
- Preventive maintenance
- Setup and configuration



Uptime

Repair & Support

- Repair service
- Spare and wear parts
- Remote service



Expertise

Training & Consulting

- User training
- Technical consulting
- Documentation and downloads
- Good measuring practice

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For more information



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