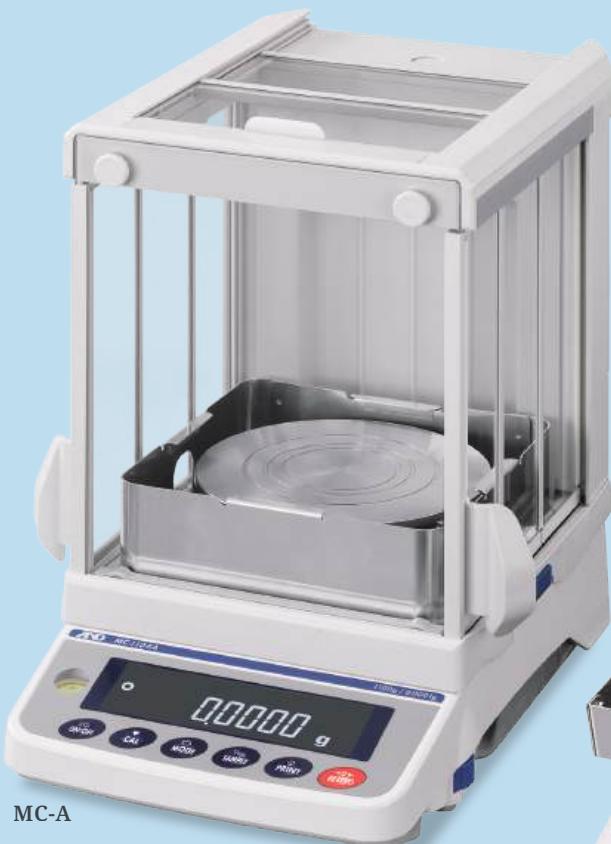


Mass Comparators

MC-A/MC-M

Series



MC-A



MC-M



CERTIFIED

Enhanced Performance. Unchanged Value.

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Upgraded Mass Comparators

— Now More Precise, More Stable

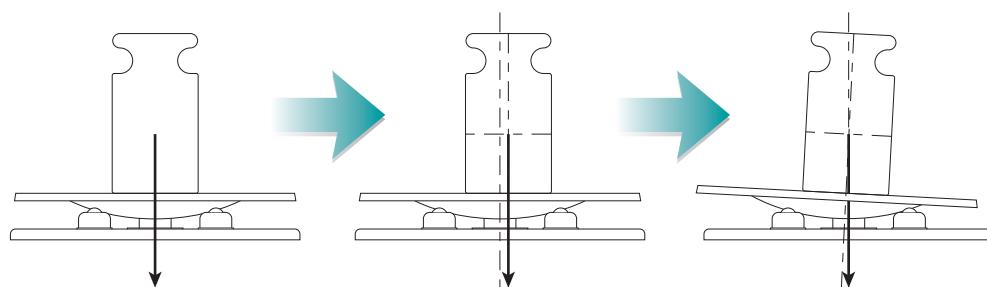
The MC-A and MC-M series mass comparators deliver significantly improved precision and stability over the previous generation, enabling reliable comparison of reference weights in calibration labs—whether in-house or service-based. Despite the performance upgrades, the series remain cost-effective, making high-end mass comparison accessible to a broader range of users.

Smart tools for confident mass comparison

Auto-centering pan to ensure consistent accuracy

One of the challenges in high-precision mass comparison is eccentricity error caused by off-center loading, which can compromise repeatability and overall measurement accuracy. The optional auto-centering pan addresses this by automatically bringing the mass to the center of the balance. Its dome-shaped bottom rests on three ball-tipped supports, allowing smooth movement to correct eccentricity errors. If an automatic loading system is not used, **A&D strongly recommends this option** for manual loading.

How the auto-centering pan works



Stable weighing through control of external disturbances

Mass comparators, due to their extremely high sensitivity, are more susceptible to various external disturbances. To help the MC-A and MC-M series fully demonstrate their true capabilities, A&D also recommends the following optional accessories:

Remote controller (AD-8922A)

Operate the balance without direct contact, reducing vibration caused by manual handling.



Tabletop breeze breaks (AD-1676 or AD-1672(A)*1)

Shield the balance from drafts and minor temperature changes caused by air conditioning or operator movement. Made of antistatic panels to minimize static effects.



*1 The AD-1676 is suitable for the MC-A series, and the AD-1672 or AD-1672A for the MC-M series.

Recommended measurement ranges

Model	BM-20				BM-252				BM-500				MC-1104A				MC-6203A				MC-10203M				MC-32002M				
Class	E2	F1	F2	M1	M2	F1	F2	M1	M2	F1	F2	M1	M2	F1	F2	M1	M2	F1	F2	M1	M2	F1	F2	M1	M2	F1	F2	M1	M2
Nominal value	1 mg																											1 mg	
	2 mg																											2 mg	
	5 mg																											5 mg	
	10 mg																											10 mg	
	20 mg																											20 mg	
	50 mg																											50 mg	
	100 mg																											100 mg	
	200 mg																											200 mg	
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	1 kg																											1 kg	
	2 kg																											2 kg	
	5 kg																											5 kg	
	10 kg																											10 kg	
	20 kg																											20 kg	

Note: For the BM-20, BM-252, and BM-500, please refer to the BM series of micro/analytical balances.

Beyond their primary role as mass comparators

Extra decimal place for system integration and fine control

The MC-A and MC-M series offer extended resolution not typically available in balances of similar capacity. This extra decimal place enables accurate tracking of small weight changes—even with heavy tare weights common in automated systems for precise dosing, blending, and other demanding processes.

Impact shock detection (ISD) for reliable automation

The ISD function detects impact loads on the weight sensor and displays their intensity in five levels (0–4). High-impact events (Levels 3 and 4) also trigger an audible alert and are logged for review, supporting system adjustments to prevent future errors and sensor damage.



	Internal Weight		Super Hybrid Sensor		Reverse Backlit LCD		Bi-directional/Quick USB		RS-232C Interface		User Access Control		GLP Compliant		Date & Time		Data Memory Function		Impact Shock Detection		Electronically Controlled Load
	Counting with ACAI		Percentage Function		Animal Weighing		Statistical Calculation		Comparator Function		Auto Power ON		Auto Power OFF		Underhook		Universal Flexi Coms		IP65	MC-M only	

Optional

	MC-A only		Ethernet (TCP/IP) Interface		Bluetooth® Interface		Rechargeable Battery
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Specifications

	MC-1104A	MC-6203A	MC-10203M	MC-32002M
Capacity	1100 g	6200 g	10.2 kg	32.2 kg
Readability	0.0001 g	0.001 g		0.01 g
Repeatability (standard deviation)*i	0.00035 g	0.0035 g (over 2000 g) 0.0015 g (up to 2000 g)		0.05 g (over 20 kg) 0.015 g (up to 20 kg)
Linearity*ii	±0.003 g	±0.03 g		±0.2 g
Sensitivity drift (10 to 30 °C/50 to 86 °F, when automatic self-sensitivity adjustment is OFF)		±2 ppm/°C		±3 ppm/°C
Accuracy immediately after internal sensitivity adjustment*ii	±0.0100 g	±0.150 g		±1.50 g
Operating environment	5 to 40 °C (41 to 104 °F), 85 %RH or less (no condensation)			
Display refresh rate	5 times/sec, 10 times/sec or 20 times/sec			
Units of measure*iii	g (gram), kg (kilogram), oz (ounce), lb (pound), lb-oz (pound-ounce), ozt (troy ounce), ct (metric carat), mom (momme), dwt (pennyweight), gr (grain), pcs (counting mode), % (percent mode), and a user-programmable unit			
Standard communication interface	RS-232C (D-Sub 9-pin), USB (mini B)			
Weighing pan size	128 × 128 mm	165 × 165 mm	270 × 210 mm	
External dimensions	259 (W) × 358 (D) × 332 (H) mm (with the large glass breeze break)		300 (W) × 355 (D) × 111 (H) mm	
Net weight	Approx. 7 kg		Approx. 9.3 kg	
Dust and waterproof rating	N/A		IP65	
Power supply / consumption	AC adapter / approx. 30 VA			
Standard accessories	Breeze break × 1*iv, Display cover × 1, AC adapter × 1, USB cable (1.8 m) × 1			

*i Under good environmental conditions using the auto-centering pan, or with consistent positioning in automated systems.

*ii Under good environmental conditions using the internal weight. The mass of the internal weight may change over time or due to environmental factors.

*iii The kg unit is for the MC-M series only. One additional unit from tael (Singapore/HK jewelry/Taiwan), tola, or Newton can be added upon request.

*iv Large glass breeze break for the MC-A series, and simple, soft plastic breeze break for the MC-M series.

Options

For the MC-A series

GXA-03*2	2nd RS-232C interface	GXA-23-PRINT*2	External key input interface + AX-SW137-PRINT foot switch
GXA-04*2	Comparator relay output/buzzer/ external key input interface	GXA-23-REZERO*2	External key input interface + AX-SW137-REZERO foot switch
GXA-06*2	Analog (0-1/0.2-1 V) output interface	GXA-23-PLUG*2	External key input interface + AX-T-314A-S plug
FXi-08*2	Ethernet (TCP/IP) interface	GXA-24A*2	USB host interface
GXA-09*2*3	Built-in rechargeable battery	GXA-25*2	Fanless ionizer with Quick Ion® technology
GXA-10*4	Large glass breeze break	GXA-26*2	External IR switch
GXA-12	Animal weighing pan	GXA-27*2	Bluetooth® interface
GXA-17*2	Large glass breeze break with built-in fanless ionizer and external IR switch		

*2 Only one of GXA-03, GXA-04, GXA-06, FXi-08, GXA-09, GXA-17, GXA-23-PRINT /REZERO/PLUG, GXA-24A, GXA-25, GXA-26, or GXA-27 can be installed.

*3 Factory-installed/dealer option.

*4 Also provided as standard.

For the MC-M series

GXM-04*5*6	Comparator relay output/buzzer/ RS-232C/external key input interface	GXM-08*5*6	Ethernet (TCP/IP) interface	*5 Only one of GXM-04, GXM-06, GXM-08, GXM-27, or the standard (RS-232C and USB) interfaces can be installed.
GXM-06*5*6	Analog (0-1/0.2-1 V) output/RS-232C interface	GXK-012	Animal weighing pan	*6 The MC-M series is not IP65 with GXM-04, GXM-06, or GXM-08.

Accessories

AD-1603*7	Calibration masses	AD-8541-SCALE	RS-232C/Bluetooth® converter
AD-1682	Rechargeable battery unit	AD-8920A	Remote display
AD-1683A*8	Static eliminator	AD-8922A	Remote controller
AD-1684A	Electrostatic fieldmeter	AX-073007197-S	Display cover for the MC-M series (5 pcs)
AD-1687	Weighing environment logger	AX-GXA-31	Display cover for the MC-A series (5 pcs)
AD-1688	Weighing data logger	AX-MC10K/30KPAN	Auto-centering pan for the MC-M series
AD-1689	Tweezers for calibration weight	AX-MC1104APAN	Auto-centering pan for the MC-1104A
AD-8129TH	Compact printer	AX-MC6203APAN	Auto-centering pan for the MC-6203A
AD-8526	RS-232C/Ethernet (TCP/IP) converter	AX-USB-9P	RS-232C/USB converter with cable
AD-8541-PC	Bluetooth® dongle for PC		

*7 Available in weights from 1 mg to 20 kg, in OIML classes E2, F1, and F2.

*8 For in-line use in automated systems, the AD-1683 (without A) is recommended.



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