



**Sartorius ultra-micro-  
and microbalances**  
Maximum precision  
for minimum sample  
quantities

# Sartorius SE2 and ME5

## The highest possible accuracy for the smallest samples available

### Sartorius ultra-micro- and microbalances are the first choice for measuring the smallest sample quantities

Once again, Sartorius brings uncompromising quality in weighing technology to the forefront in its new generation of microbalances. These instruments combine incomparably fast response times and extremely high repeatability to meet the very highest demands on accurate weighing. Sartorius ultra-micro- and microbalances deliver results that measure up to the strictest requirements of both legal regulations and quality management systems without exception.

### Astonishingly fast response times

The time spent on weighing procedures is dramatically reduced by a stabilization time of only 10 seconds. Full resolution over the entire weighing capacity, from 0.1 µg to 2.1 g in the SE2 and 1 µg to 5.1 g in the ME5, makes all weighing processes uncomplicated – and that saves valuable time with every sample weighed.

### Intelligent draft shield

The motorized all-glass draft shield has no frame components to interfere with the view "of what's going on" inside the weighing chamber. A special conductive coating on the glass prevents build-up of static electricity, and all of the draft shield components can be removed from the balance in just a few quick steps for fast and easy cleaning. With the intelligent learning function, the draft shield can be adapted to any work routine at the press of a key. Large keys on the optimized display and control unit can be pressed with the ball of the hand to open and close the draft shield, for even faster operation.



### Operating elements that are easy to "grasp"

The backlit, graphic display ensures a high-contrast presentation of all text input and excellent viewing readability of weighing results. Ergonomically designed "bubble" keys provide positive feedback for confident operation.

### Ideal test and measuring equipment

The "isoCAL" function for fully automatic calibration and adjustment ensures consistently high accuracy and provides unparalleled support for use in quality management systems. This function can be triggered by a change in temperature or automatically activated at defined intervals or specific times of day. ISO | GLP-compliant user-definable documentation, calibration record memory, and the SQmin function for monitoring minimum initial sample weight in accordance with tough USP standards form the basis for complete reliability.



### Versatile application programs built in

A total of 14 applications programs are integrated into our premium microbalances. In addition to the standard laboratory applications, other programs particularly important for microweighing include, for example, air buoyancy correction for exact absolute measurement, or for determining the diameter of microscopically fine wires. A flexible differential weighing program, for up to 999 samples with sample and batch IDs, plus a powerful statistics program offer every convenience for reliable and fast evaluations. This comprehensive software package is rounded off by programs for calculation of weights by a factor and time-controlled functions.

### Specialists for a highly special weighing application

The SE2-F and ME5-F are specially designed for highly accurate weighing of filters of sizes up to 90 mm. Both models are equipped with a special low-profile stainless steel draft shield to reduce the effects of static electricity to a minimum when weighing filters.

To ensure fast and user-friendly operation, the draft shield has a cover that easily rotates open manually and is conveniently adaptable for both left- and right-handed users. A choice of weighing pan diameters (50 mm standard; 75 mm or 90 mm optional) enable flexible adaptation of the SE2-F and ME5-F to a variety of filter sizes.

All micro- and ultra-microbalances come with both an RS-232C communication port and an additional printer port.



## The new Sartorius ME36S microbalance

### Unlimited weighing capacity for micro-sized samples

The new Sartorius ME36S is a microbalance for highly specific weighing situations. Even more than the Expert LE26P, it is designed for weighing the smallest sample quantities in relatively large amounts of a basic substance, solvent or substrate.

Yet the ME36S also shows its true strengths in applications such as ashing, where the procedure requires ultra-small sample quantities to be weighed into relatively heavy or bulky tare containers. And all this with a readability of 1 µg and full resolution over the entire range of its capacity extending up to 31g.

#### No comparison in sight

With its expert weighing technology, the ME36S has cleared a wide swath in the field of competition. It offers an exceptionally high weighing capacity for a microbalance, along with outstanding technical specifications. The concept of separately installed weighing and control units, which has already proved itself in the ME5 and SE2 high-resolution micro- and ultra-microbalances, makes the ME36S unique from both a weighing technology and an ergonomic perspective. The source of heat, the display unit, is spaced far enough from the weigh cell to prevent it from affecting the accuracy, yet both units are positioned close enough for operating convenience.

Unlike other balances in this performance class, there are no limitations in workflow caused by the need for additional interior draft shields, permitting the ME36S to deliver fast and reliable results.

#### User-friendly operation and flexible handling

The flexible draft shield system allows fully automatic operation at the press of a key. For even faster operation, the draft shield can also be opened and closed securely and reliably using the ball of your hand, for example, when working with a loaded spatula. The intelligent learning function adapts the motorized control of the three draft shield elements ideally to every weighing situation.

When you work with micro-samples, convenient handling is especially important. The high-contrast display with its easy-to-read weights and clear text prompts gives you the freedom to handle even the smallest samples without getting sidetracked.

#### Fully equipped

When used in quality management systems, the ME36S offers the same functionality as the ME5 micro or SE2 ultra-microbalances with optimum user support.

Additionally, ME36S balances are standard equipped with a complete application software package, giving you greater flexibility, especially if your requirements go beyond strictly weighing.

For communications, the ME36S features an RS-232C data interface along with an additional printer interface port.



## The Sartorius Expert LE26P microbalance A microbalance spanning two worlds

The LE26P microbalance closes the gap between high-resolution microbalances and classic semi-microbalances for ensuring the minimum sample weight in compliance with the United States Pharmacopeia.

The LE26P features a structured weighing range: a fine range with a readability from 2 µg to 5 g and a coarse range with a readability from 10 µg to 21 g. As the fine range can be used continuously, i.e., even after taring a heavy container, the full resolution is available at all times when you need to use relatively large vessels to weigh in samples. This makes the LE26P the ideal microbalance for weighing small sample quantities in large and heavy containers.

### An incomparable weigh cell

The LE26P features the high-resolution, 21st century robotically etched monolithic weigh cell patented by Sartorius. This proprietary cell, a true innovation in Sartorius microbalances, continues to be unrivalled by the competition to this very day. Especially for microbalances, it is important to minimize the effects of ambient conditions, such as temperature fluctuations, on the weighing result. As the monolithic well cell is made only from one material, a high-grade aluminum alloy, it eliminates the problem, right at the root, of varying temperature-dependent expansions and contractions that occur when different materials are used.

### Microweighing on a "macropan"

The weighing pan with a diameter of 50 mm is exceptionally large for a microbalance, allowing easy "rock-steady" positioning of the sample container used. Moreover, the large-volume, all-glass draft shield on this microbalance provides optimal access to the weighing chamber. Particularly for microweighing, this is an advantage for handling minuscule samples. The ample space all around the weighing pan enables samples to be placed inside the weighing chamber to acclimatize them to the interior temperature.

### The highest accuracy is ensured at all times – thanks to isoCAL

The automatic calibration and adjustment function, isoCAL, ensures that the LE26P consistently weighs at the highest accuracy level. This means that compliance with the calibration and adjustment intervals prescribed by quality systems on a regular basis is assured fully automatically. Moreover, the standard features and equipment on the LE26P flexibly accommodate your expanding needs. The following application programs are built into the microbalance: weighing in percent, net-total formulation, dynamic weighing and mass unit conversion by toggling between two units.

With its winning price|performance ratio, the LE26P is more than just an entry-level balance for stepping into the world of microweighing.



## Sartorius Competence CP2P microbalance

### An introduction to the world of microweighing

The Sartorius Competence microbalance is designed for users who do not process a high volume of samples, and only occasionally work with the minuscule sample quantities that must be analyzed with microgram accuracy. This is an "entry-level" model that offers incomparable value for money. The new structure of the operating elements, built-in motorized calibration weight and unique draft shield focused on functionality offer real advantages for the user.

#### **Microweighing has never been so easy**

This microbalance equipped with a monolithic weigh cell, provides a combination of the highest precision and fast response times with 100% reliability. Moreover, the mechanical ruggedness of monolithic weighing technology is unbeatable in this performance class.

#### **Our 5-point program for maximum quality**

The PolyRange structure provides weighing capacities of 0.5 | 1 | 2 g with readabilities of 1 | 2 | 5 µg. In addition, the finest range can be shifted for continuous use, which means the best resolution can be used even with heavy tare containers.

Thanks to the built-in motorized calibration weight, calibration and adjustment can be performed automatically at the press of a key, ensuring that the balance always operates with the highest possible accuracy.

The manual draft shield has been specially designed for practical operation in the handling of exceptionally small samples. The smooth-action draft shield doors glide open quietly to facilitate fast and ergonomic work routines when handling "micro-samples."

The high-grade, polished metal surfaces inside the weighing chamber and the stainless steel work area are highly practical features for keeping the microbalance clean. They make it easy to comply with stringent requirements for cleanliness in microweighing applications.

The "operating philosophy" followed by the successful Competence laboratory balance series from Sartorius provides state-of-the-art support for error-free operation of the microbalance, which is especially important in precision microweighing.

Take advantage of our competence in microweighing for the reliability required in quality management systems. The Competence CP2P from Sartorius is an investment in the high quality of both processes and results in today's microweighing applications.

#### **A special choice for filter weighing**

The CP2P-F model version is the one to choose for tasks generally involved in the measurement of particulate residues. This model can be used with filters of up to 120 mm in diameter, thanks to its separate filter pan cover, and eliminates interference from static electricity. The low-profile stainless steel draft shield permits fast work and easy cleaning in accordance with the strictest requirements.



## Product line-up

Model	SE2	ME5	ME36S	LE26P
Weighing range structure	SuperRange	SuperRange	SuperRange	PolyRange
Maximum weighing capacity	g 2.1	5.1	31	5   21
Readability	µg 0.1	1	1	2   10
Tare range (subtractive)	g 2.1	5.1	31	21
Repeatability	µg ± 0.25	± 1	± 2	± 4
Weighing ranges	g			
Max. linearity	µg ± 0.9	± 4	± 10	± 8
Stabilization time (avg.)	s 10	10	14 – 18	10
Adaptation to ambient conditions	4 optimized filter levels	4 optimized filter levels	4 optimized filter levels	4 optimized filter levels
Calibration weight	Built-in   isoCAL	Built-in   isoCAL	Built-in   isoCAL	Built-in   isoCAL
Allowable ambient operating temperature	°C +5 to +40	+5 to +40	+5 to +40	+5 to +40
Pan size (dia. = Ø)	mm 20	30	30	50
Dimensions				
Weigh cell (W×D×H)	mm 122×315.5×121.5	122×315.5×121.5	222×419×290	213×342×270
Electronic unit (W×D×H)	mm 254×320×106	254×320×106	254×320×106	134×51×155
Weighing chamber (Dia.×H   W×D×H)	mm Ø 80×H 77	Ø 80×H 77	222×180×190	206×242×178
Net weight, approx.				
Weigh cell	kg 3.3	3.3	9.9	6.5
Electronic unit	kg 3.5	3.5	3.5	1.1
Data interface port(s)	RS-232C + printer	RS-232C + printer	RS232C + printer	RS-232C
Models verified for use in legal metrology in the EU <sup>1)</sup>	SE2-OCE	ME5-OCE	ME36S-OCE	LE26P-OCE
Operating range acc. to CD <sup>2)</sup>	g 0.00001 – 2.1	0.0001 – 5.1	0.0001 – 31	0.0002 – 21

<sup>1)</sup>including the Signatories of the Agreement on the European Economic Area

<sup>2)</sup> Council Directive 90/384/EEC

\* with standard 20 mm Ø pan

\*\* with standard 30 mm Ø pan

The ultra-microbalance ranks at the top of the line, with full, 0.1-µg resolution throughout the entire weighing range up to a 2.1-g capacity

The microbalance with the convenient all-glass draft shield and full, 1-µg resolution throughout the entire weighing range up to a 5.1-g capacity

The balance featuring an amazing 31-g weighing capacity with full, 1-µg resolution throughout the entire weighing range; with a manually operable draft shield

The ideal microbalance for small sample quantities and large containers; with a continuous fine range from 2-µg readability to a 5-g capacity level and with an electronic weighing capacity of up to 21 g



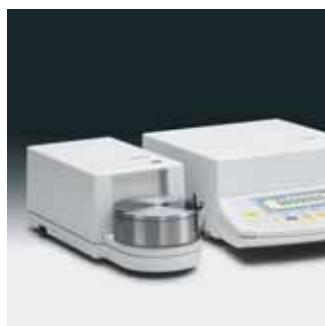
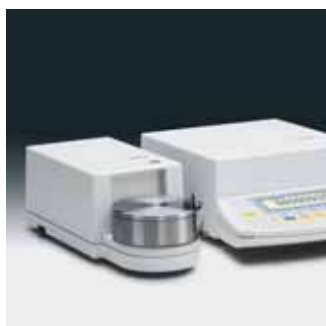
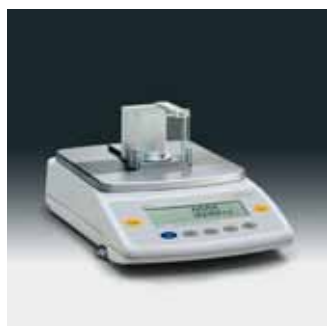
CP2P	SE2-F Filter Weighing	ME5-F Filter Weighing	CP2P-F Filter Weighing
PolyRange	SuperRange	SuperRange	PolyRange
0.5   1   2	2.1	5.1	0.5   1   2
1   2   5	0.1	1	1   2   5
2	2.1	5.1	2
± 1   2   3 0.5   1   2	± 0.25*	± 1**	± 2   3   4* 0.5   1   2
± 2   4   5	± 0.9*	± 4**	± 2   4   5*
10	10*	10**	10*
4 optimized filter levels	4 optimized filter levels	4 optimized filter levels	4 optimized filter levels
Built-in   isoCAL	Built-in   isoCAL	Built-in   isoCAL	Built-in   isoCAL
+5 to +40	+5 to +40	+5 to +40	+5 to +40
20	50 or 20 (75 and 90 optional)	50 or 30 (75 and 90 optional)	120 or 20
213×342×151	122×318×106	122×318×106	213×342×115
-	254×320×106	254×320×106	-
54×49.5×55.5	∅ 106 × H 40	∅ 106 × H 40	H 12
4.35	4.2	4.2	5.0
-	3.5	3.5	-
RS-232C	RS-232C + printer	RS-232C + printer	RS-232C
-	-	-	-
-	-	-	-

The economical microbalance featuring a resolution of 1 µg and an electronic weighing range of up to 2 g

The filter weighing ultra-microbalance with full, 0.1-µg resolution up to 2.1 g, specially designed for weighing filters of up to 50 mm diameters (optionally up to 90 mm ∅)

The filter weighing microbalance with full, 1-µg resolution up to 5.1 g, specially designed for weighing filters of up to 50 mm diameters (optionally up to 90 mm ∅)

The filter weighing balance for convenient and high-precision measurement of residual quantities; for filters of up to 120 mm ∅



## Accessories for ultra-micro- and microbalances

Model	SE2	ME5	ME36S	LE26P	CP2P
Data printer	YDP03-OCE	YDP03-OCE	YDP03-OCE	YDP03-OCE	YDP03-OCE
Remote display	YRD02Z	YRD02Z	YRD02Z	YRD02Z	YRD02Z
Carrying case					YDB01M
Balance table (wooden frame with cast stone slab inset)	YWT01	YWT01	YWT01	YWT01	YWT01
Balance table, completely made of cast stone	YWT03	YWT03	YWT03	YWT03	YWT03
Rechargeable battery pack	YRB05Z	YRB05Z	YRB05Z	YRB05Z	YRB05Z
SartoConnect program software for direct data transfer to a PC	YSC01	YSC01	YSC01	YSC01	YSC01
Weight set for determination of the air density	*	YSS35	*		
Pipette calibration set	*	*			
Foot switch for opening/ closing the draft shield, taring and printing	YPE01RC	YPE01RC	YPE01RC		
Foot switch for taring	YFS01	YFS01	YFS01	YFS01	YFS01
Ionizing blower for eliminating static electricity	YIB01-ODR	YIB01-ODR	YIB01-ODR	YIB01-ODR	YIB01-ODR
Stat-Pen ionizing probe for neutralization of electrostatic charges on samples	YSTP01	YSTP01	YSTP01	YSTP01	YSTP01

Model	SE2-F	ME5-F	CP2P-F
Data printer	YDP03-OCE	YDP03-OCE	YDP03-OCE
Remote display	YRD02Z	YRD02Z	YRD02Z
Carrying case			YDB01M
Balance table (wooden frame with cast stone slab inset)	YWT01	YWT01	YWT01
Balance table, completely made of cast stone	YWT03	YWT03	YWT03
SartoConnect program software for direct data transfer to a PC	YSC01	YSC01	YSC01
Foot switch for taring	YFS01	YFS01	YFS01
Ionizing blower for eliminating static electricity	YIB01-ODR	YIB01-ODR	YIB01-ODR
Stat-Pen ionizing probe for neutralization of electrostatic charges on samples	YSTP01	YSTP01	YSTP01
Filter weighing pan, 75 mm Ø	VF2562	VF2562	
Filter weighing pan, 90 mm Ø	VF2880	VF2880	

\* available on request

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