sartorius

Laboratory Weighing Products

turning science into solutions

Laboratory Weighing

A wide selection of ultramicro, micro, analytical and precision balances allows you to choose any entry-level to high-performance balance.

With more than 140 years of experience and quality "Made in Germany," we offer the best weighing option by excelling in speed, repeatability and accuracy. They feature a monolithic weigh cell – a technology that we first introduced and that continues at the leading edge in lab weighing.

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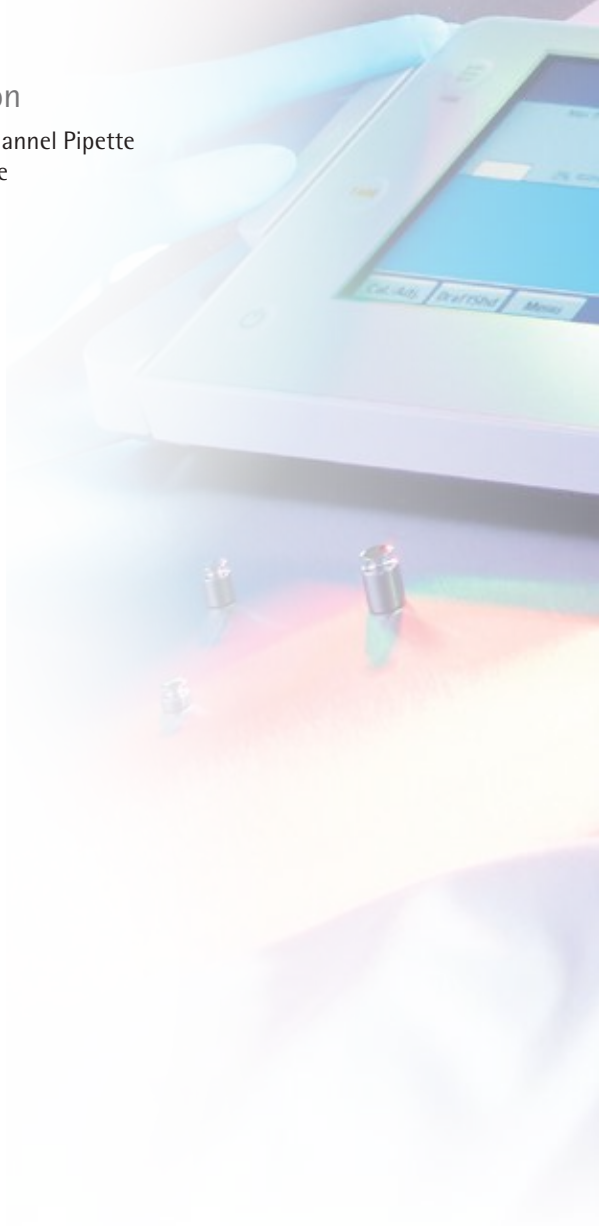


0.000 mg
Cubis


Cubis
sartorius

Laboratory Balances

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Cubis® Premium Laboratory Balances
Universal balances often only offer limited options to adapt them to special workflows in laboratories. Therefore, standard operating procedures (SOPs) must frequently be adapted to the existing functionalities of laboratory balances.

This does not apply to Sartorius Cubis®: they are the first laboratory balances that you can integrate into your individual workflows, as well as adapt to your weighing containers and the conditions at your workplace by using accessories and mechanical extensions.

Since we launched the Cubis® range of premium laboratory balances in 2009, it has become the benchmark for use in regulated sectors that impose the highest requirements, such as in global pharmaceutical labs.

Standard, Personalized or Fully Customized?

Your Choice

Cubis®

Modular Configuration
The first series of laboratory balances to feature a completely modular design, Cubis® enables you to combine your choice of display and control unit, weighing module, data interface module – and much more. You can choose from thousands of options to configure your balance to suit your individual needs and obtain the optimal solution for integration into your process.

The Cubis® Operating Design
Beyond the Q-Guide standard user interface, Cubis® offers you personalized solutions with Q-Apps. You can choose from a wide variety of downloadable Q-Apps for laboratory applications. The advantage is that you and your operators can adapt or fully personalize them according to your process workflows or even configure them to meet your special requirements right from the start.

MSA

MSA – The Ultimate Solution
- Top-of-the-line technology and information design
- Touch screen featuring high-resolution color TFT for brilliant reproduction of text and graphics
- Outstanding ease of use and display quality, especially for complex applications
- Q-Apps can be customized to your individual workflow

MSU

MSU – Classic and Universal
- High-resolution, generously sized, monochrome graphic display
- Keys that feature positive click action and precise activation of functions
- Classic key-operated control with the widest possible range of performance features

MSE

MSE – Weighing Pure and Simple
- Large, high-contrast liquid crystal display
- Easy-to-understand menu guidance with short text prompts
- Clearly structured keys for precise activation of functions
- For users without complex operations who primarily want to perform ultra-precise weighing

The Right Draft Shield for Any Task

All draft shield models for the Cubis® offer clear, practical advantages over conventional lab balances.

DF Draft Shield for Filter Weighing

DF Draft Shield for Filter Weighing
Manual stainless steel draft shield specially designed for ultra-accurate weighing of filters; for balances with 0.001 mg or 0.0001 mg readability (weighing modules 6.6S or 2.7S; not for 3.6P).

DM Draft Shield

DM Draft Shield
Automatic ultra-micro and micro balances draft shield with learning capability; for models with 0.001 mg or 0.0001 mg readability (weighing modules 6.6S, 3.6P, 2.7S).

DI Draft Shield

DI Draft Shield
Automatic analytical balance draft shield with an integrated ionizer for all models with 0.01 mg, 0.1 mg or 1 mg readability and for model 5202S.

DA Draft Shield

DA Draft Shield
Automatic analytical balance draft shield for all models with 0.01 mg, 0.1 mg or 1 mg readability and for model 5202S.

DU Draft Shield

DU Draft Shield
Manual analytical balance draft shield for all models with 0.01 mg, 0.1 mg or 1 mg readability and for model 5202S.

DE Draft Shield

DE Draft Shield
Manual draft shield for all models with 1 mg readability and for model 5202S.

DR Draft Shield

DR Draft Shield
Removable, flat draft shield made of stainless steel for all models with 1 mg readability and for model 5202S.

Cubis®. App-Solutely Individual

Homepage Q-App Shop

Permanent Use of Q-Apps

Uniqueness Wins
Turn your Cubis® lab balance into a Cubis® individual by integrating customer-specific applications, called Q-Apps. These are downloadable application programs that guide you step by step through a specific workflow sequence.

Q-Apps ensure that the procedures described in the corresponding SOPs are observed at all times. This makes Q-Apps an attractive alternative to implementing external middleware.

Standard or Personalized
Besides individual Q-Apps that are performed according to your specific application, a variety of solutions for differential weighing, formulation and average weight control, or checking the net quantities filled, are available as standard Q-Apps.

Standard Q-Apps additionally provide solutions for defining the starting point of your balance's operating range as well as for easy pipette calibration. With Q-Apps, you can carry out a specific workflow without needing to connect a computer.

The Sartorius App Center: Download and Test Your Preferred Apps
You can readily download any standard Q-Apps from the Sartorius App Center and install these from an SD card in a Cubis® laboratory balance. Just test the Q-Apps of your choice for 30 days free of charge to discover all their winning capabilities for increasing efficiency in your daily lab work.

Individual Integration into Your Application

Touch-free Draft

Touch-Free Draft Shield Operation
The motorized draft shield can be opened and closed without being touched – just a simple movement of your hand over the infrared sensor YHS01MS is all it takes.

This provides additional safety, especially for applications involving toxic substances. In addition, the IR sensor can also be used to trigger other functions, such as printing, isoCAL or ionizer, etc.

Q-Grid Pan

Q-Grid Pan
This gridded weighing pan, Q-Grid (accessory option YWP03MS), is available for all Cubis® models with a readability of 10 mg and 100 mg, except for model 5202S. Q-Grid lets you easily operate a balance with a large pan under laminar flow in safety weighing cabinets, workbenches or even in fume hoods, without restricting its performance. This saves considerable effort in busy pharmaceutical laboratories.

Q-Grip Holder

Q-Grip Holder
Q-Grip is a flexible and adaptable "one-size-fits-all" holder for bottles, test tubes, reaction containers and filters of up to 120 mm or nearly 5". Available as accessory option YFH01MS, it fits on all Cubis® semi-micro balances and analytical balances.

Simply use it in place of the original weighing pan. Its individually adjustable angle ensures that you can maintain an ergonomic posture during filling and pipetting to transfer samples into various containers.

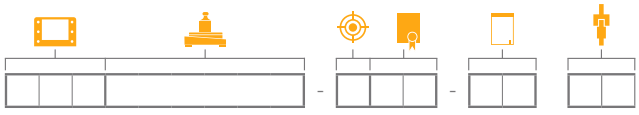
Q-Stat Ionizer

Q-Stat Ionizer
At the touch of a key, the Q-Stat ionizer integrated into the DI draft shield (see p. 16), eliminates electrostatic charges within seconds from sample containers and substances, preventing any interference with your weight measurements.

The effective principle of four ion jets ensures that no disruptive air currents are generated during charge neutralization. This ensures that you will obtain stable and correct weighing results – independently of the ambient conditions.

Ordering Information

Order Code



Note: Please use the adjacent fields to enter the selection made for each icon.

Example

Cubis® Display and Control Units
Select the display and control unit and enter it in the field identified by the icon in the order code.

Types	MSA	MSU	MSE
Operation	Touch screen, keys for important basic functions	Keys	Keys
Display	High-resolution color TFT, 5.7" graphical display	High-resolution black | white, 5.7" graphical display	Liquid crystal display, black | white
Adaptation of the display and control unit	Tiltable display, removable display and control unit	Tiltable display, removable display and control unit	Removable display and control unit
Standard data interfaces	– USB port (integrated into weighing module) – RS-232C accessory interface, 25-pin (integrated into weighing module) – Ethernet (integrated into display and control unit) – Choice of data protocols available (also enables connection to software designed for external manufacturers) – *Bluetooth*® (optional accessory; not for weighing capacities > 20,200 g)		– USB port (integrated into weighing module) – RS-232C accessory interface, 25-pin (integrated into weighing module) – *Bluetooth*® (optional accessory; not for weighing capacities > 20,200 g)
SD card reader	Integrated as standard into display and control unit	Integrated as standard into display and control unit	–
Operation of motorized draft shield (only for DA, DI or DM draft shields)	Activated by side keys or touch-free using IR sensor (optional); learning capability	Activated by side keys or touch-free using IR sensor (optional); learning capability	Activated by key or touch-free using IR sensor (optional); learning capability
Applications	Mass unit conversion, SQmin function for operating range starting point according to USP, isoCAL automatic calibration | adjustment function, individual identifiers, density determination, statistics, calculation, averaging, formulation, weighing in percent, time-controlled functions, totalizing, DAkkS measurement uncertainty, second tare memory, counting, checkweighing, Alibi memory, audit trail	Mass unit conversion, SQmin function for operating range starting point according to USP, isoCAL automatic calibration | adjustment function, individual identifiers, density determination, statistics, calculation, averaging, formulation, weighing in percent, time-controlled functions, totalizing, DAkkS measurement uncertainty, second tare memory, counting, checkweighing, Alibi memory, audit trail	Mass unit conversion, isoCAL automatic calibration | adjustment function, density determination (buoyancy method only), calculation, averaging, net | total formulation, weighing in percent, counting, totalizing
Personalizable with Q-Apps	– Downloadable Q-Apps – Customer-specific modifications on request	–	–

Cubis® Weighing Modules
Please enter the model name, starting from the left, in the field identified by the icon in the order code.

	Readability [mg]	Weighing capacity [g]	Weighing pan (W × D) [mm]	Typical stabilization time [≤s]	Typical response time [≤s]	Repeatability [≤±mg]	Linearity [≤±mg]	Eccentric load [mg]* (test load [g])	Optimum starting point of the operating range [mg]**
Ultra-Micro Balance 0.0001 mg									
2.7S	0.0001	2.1	∅ 20	7	10	0.00025	0.0009	0.0025 (1)	0.082***
Micro Balances 0.001 mg									
6.6S	0.001	6.1	∅ 30	5	8	0.001	0.004	0.004 (2)	0.82***
3.6P	0.001 | 0.002 | 0.005	1.1 | 2.1 | 3.1	∅ 30	5	8	0.003 | 0.004 | 0.005	0.004	0.005 (1)	0.82***
Semi-Micro Balances 0.01 mg									
225S	0.01	220	85 × 85	2	6	0...60 g: 0.015 60...220 g: 0.025	0.1	0.15 (100)	8.2
225P	0.01 | 0.02 | 0.05	60 | 120 | 220	85 × 85	2	6	0...60 g: 0.015 60...220 g: 0.04	0.15	0.2 (100)	8.2
125P	0.01 | 0.1	60 | 120	85 × 85	2	6	0...60 g: 0.015 60...120 g: 0.06	0.15	0.15 (50)	8.2
Analytical Balances 0.1 mg									
524S	0.1	520	85 × 85	1	3	0.1	0.4	0.3 (200)	82
524P	0.1 | 0.2 | 0.5	120 | 240 | 520	85 × 85	1	3	0.15 | 0.2 | 0.4	0.5	0.4 (200)	82
324S	0.1	320	85 × 85	1	3	0.1	0.3	0.3 (200)	82
324P	0.1 | 0.2 | 0.5	80 | 160 | 320	85 × 85	1	3	0.1 | 0.2 | 0.4	0.5	0.4 (200)	82
224S	0.1	220	85 × 85	1	3	0.07	0.2	0.2 (100)	82
124S	0.1	120	85 × 85	1	3	0.1	0.2	0.2 (50)	82

* Position according to OIML R76
** According to USP (United States Pharmacopeia) Chapter 41, the optimal operating range is defined as the range from 820 d to the maximum weighing capacity. Depending on the installation location and environmental conditions, the value may be higher.
*** With DM draft shield

Cubis® Weighing Modules
Please enter the model name, starting from the left, in the field identified by the icon in the order code.

	Readability [mg]	Weighing capacity [g]	Weighing pan (W × D) [mm]	Typical stabilization time [≤s]	Typical response time [≤s]	Repeatability [≤±mg]	Linearity [≤±mg]	Eccentric (off-center) [mg]* (Test load [g])	Optimum starting point of the operating range [g]**
Precision Balances									
5203S	1	5,200	140 × 140	1	2	1	5	2 (2,000)	0.82
5203P	1|2|5	1,200|2,400|5,200	140 × 140	1	2	1	5	2 (2,000)	0.82
3203S	1	3,200	140 × 140	1	2	1	5	2 (1,000)	0.82
2203S	1	2,200	140 × 140	1	1.5	1	3	2 (1,000)	0.82
2203P	1|10	1,010|2,200	140 × 140	1	1.5	1|6	5	3 (1,000)	0.82
1203S	1	1,200	140 × 140	1	1.5	0.7	2	2 (500)	0.82
623S	1	620	140 × 140	0.8	1	0.7	2	2 (200)	0.82
623P	1|2|5	150|300|620	140 × 140	0.8	1	1|2|4	5	4 (200)	0.82
323S	1	320	140 × 140	0.8	1	0.7	2	2 (200)	0.82
14202S	10	14,200	206 × 206	1	1.5	10	30	20 (5,000)	8.2
14202P	10|20|50	3,500|7,000|14,200	206 × 206	1	1.5	10|20|40	50	40 (5,000)	8.2
10202S	10	10,200	206 × 206	1	1.5	7	20	20 (5,000)	8.2
8202S	10	8,200	206 × 206	1	1.5	7	20	20 (5,000)	8.2
6202S	10	6,200	206 × 206	1	1.5	7	20	20 (2,000)	8.2
6202P	10|20|50	1,500|3,000|6,200	206 × 206	1	1.5	7|20|40	50	50 (2,000)	8.2
5202S	10	5,200	140 × 140	0.8	1	6	10	10 (2,000)	8.2
4202S	10	4,200	206 × 206	0.8	1	7	20	30 (2,000)	8.2
2202S	10	2,200	206 × 206	0.8	1	7	20	20 (1,000)	8.2
1202S	10	1,200	206 × 206	0.8	1	7	20	20 (500)	8.2
12201S	100	12,200	206 × 206	0.8	1	50	100	200 (5,000)	82
8201S	100	8,200	206 × 206	0.8	1	50	100	200 (5,000)	82
5201S	100	5,200	206 × 206	0.8	1	50	100	200 (2,000)	82
High-Capacity Balances									
70201S	100	70,200	400 × 300		1.5	100	500	500 (20,000)	82
36201S	100	36,200	400 × 300		1.5	100	200	300 (10,000)	82
36201P	100 | 1,000	10,200|36,200	400 × 300		1.5	100 | 500	200	300 (10,000)	82
20201S	100	20,200	400 × 300		1.5	100	200	300 (5,000)	82
70200S	1,000	70,200	400 × 300		1	500	1,000	1,000 (20,000)	820
36200S	1,000	36,200	400 × 300		1	500	1,000	1,000 (10,000)	820

* Position according to OIML R76
** According to USP (United States Pharmacopeia) Chapter 41, the optimal operating range is defined as the range from 820 g to the maximum weighing capacity. Depending on the installation location and environmental conditions, the value may be higher.

Cubis® Leveling
Select the type of leveling mode and enter "Ø" or "1" in the field identified by the icon in the order code.

Ø	Cubis® shows the level indicator on the display and provides support for rapid leveling (a standard feature on MSA and MSU display and control units; for MSE units, only symbols are provided to support manual leveling).
1	Fully automatic, motorized Q-Level leveling at the touch of a key (available for all Cubis® weighing modules with a weighing capacity of > 6.1 g and ≤ 6,200 g).

Test and Approval Certificates
Select a test or approval certificate and enter the certificate type in the field identified by the icon in the order code.

ØØ	Standard certificate of conformity to specifications
TR	Like ØØ, but with a detailed test report
CE	Factory-calibrated with European verification certificate (not for models with DF draft shield)

Cubis® Draft Shields
Select a draft shield and enter the identifier in the field identified by the corresponding icon in the order code.

D0	Flat, stainless-steel weighing pan with no draft shield for weighing modules with a pan size of 206 × 206 mm and 400 × 300 mm.
DR	Flat, stainless-steel weighing pan draft shield (removable, with no glass components) for all precision balances with a readability of 1 mg and weighing module 5202S.
DE	Manual glass draft shield for precision balances with a readability of 1 mg and weighing module 5202S.
DU	Manual glass analytical draft shield chamber, with smooth-action doors that open wide and provide unimpeded access to the weighing chamber without interfering braces. For all models with 0.01 mg, 0.1 mg and 1 mg readability and weighing module 5202S.
DA	Automatic, glass-motorized draft shield with learning capability for user-friendly operation and easy customization to the changing requirements of different applications. For all models with 0.01 mg, 0.1 mg and 1 mg readability and weighing module 5202S.
DI	Identical to the DA draft shield, but also includes an integrated ionizer to eliminate interfering electrostatic charges on samples and sample containers.
DM	Automatic, motorized, round 100% glass draft shield with learning capability for ultra-micro and micro balances with a readability of 0.0001 mg and 0.001 mg (2.7S, 6.6S and 3.6P weighing modules).
DF	Manual, stainless-steel draft shield for weighing filters with diameters of up to 50 mm (75 mm and 90 mm pans optional). Designed to minimize the effects of static electricity (not for weighing module 3.6P).

Interface Module Options
For every balance, you can select an additional interface module.

IR	RS-232 interface, 25-pin
IB	*Bluetooth*® interface
IP	RS-232 interface, 9-pin, incl. PS/2 interface

Q-Apps

Description	Order No.
UserCal V1. Software guided, external calibration procedure	YAPP01
UserCal Advanced. Software guided, external calibration procedure with HTML evaluation	YAPP012
USP V2. Software for determination of the operating range acc. USP	YAPP02
USP Advanced. Software for determination of the operating range acc. USP with HTML evaluation	YAPP022
Backweigher V1. Differential weighing application with automatic sample numbering	YAPP03
Backweigher V2. Differential weighing application with batches and automatic sample numbering	YAPP032
Backweigher V3. Differential weighing application with individual sample ID	YAPP033
Pipette Check V1. Test routine for easy and accurate testing of pipettes	YAPP04
Pipette Check Advanced. Test routine for easy and accurate testing of pipettes with HTML evaluation for the last check	YAPP042
Formulation V1. Routine for easy and accurate formulating process	YAPP05
Tablet Checker V1. Tablet checking acc. to pharmacopeia	YAPP06
Residual Dirt Analysis. Differential weighing application acc. to VDA19	YAPP10
QR and barcode label creator. Requirement for printing labels on the YDP30 printer	YAPP11
Easy ID. Weighing application with individual sample ID and GLP record	YAPP12
Activation for Webservice	YAPP100

Cubis® Optional Accessories

Printers and Communication	
Verifiable data printer for connection to RS-232, 25-pin accessory interface	YDP10-0CE
Verifiable data printer with *Bluetooth®* data transmission (with YDO01MS-B or option IB only)	YDP10BT-0CE
Color ribbon for YDP10-0CE and YDP10BT-0CE	6906918
Paper rolls for printer YDP10-0CE; 5 rolls, each with 50 m	6906937
Data interface *Bluetooth®* for wireless connection of data printer YDP10BT-0CE	YDO01MS-B
RS-232C data interface, 9-pin including PS/2 for connecting a computer or keyboard	YDO01MS-P
RS-232C data interface, 25-pin for connection of Cubis® accessories	YDO01MS-R
Display cable, 3 m, for Cubis® MSA and MSU models, for remote setup of display and weighing unit (installation by Sartorius Service or in factory [order VF4016])	YCC01-MSD3
Display cable, 3 m, for Cubis® MSE models, for remote setup of display and weighing unit (installation by Sartorius Service or in factory [order VF4016])	YCC01-MSED3
Cable, 3 m, between weighing module and electronics module for Cubis® models with 0.01 mg|0.001 mg|0.0001 mg readability	YCC01-MSM3
Installation display cable, 3 m, for Cubis® models, for remote setup of display and weighing unit	VF4016
RS-232C interface cable to connect computer with a 9-pin COM port, length 1.5 m	7357314
SartoCollect software for data communication between balance and PC	YSC02

Displays and Input|Output Elements	
MSA control unit with color TFT graphic display and touch screen	YAC01MSA
MSE display unit with backlit liquid-crystal and tactile keys	YAC01MSE
MSU control unit with backlit b | w graphic display and tactile navigation keys	YAC01MSU
Barcode scanner with connecting cable, 120 mm reading range	YBR03PS2
Foot switch for printing, taring or using a different function key; key function selectable by menu code, incl. T-connector	YFS01
Infrared sensor for touch-free activation of functions (e.g., controlling the draft shield)	YHS01MS
Hand switch for printing, taring, or using a different function key; key function selectable by menu code, incl. T-connector	YHS02
Foot switch for activating the OPEN|CLOSE draft shield functions (only in combination with DA and DI draft shield), taring and printing	YPE01RC
Additional display, LCD, digit height 13 mm, backlit	YRD03Z
3-segment checkweighing display, red – green – red, for plus | minus measurements, incl. T-connector	YRD11Z

Pipette Calibration Hardware and Software

Pipette calibration kit (hardware) for models with 0.1 mg and 0.01 mg readability Consists of moisture trap and all required adapters	YCP04MS
Pipette calibration kit (hardware) for micro balance weighing modules 6.6S and 3.6P Consists of moisture trap and all required adapters	VF988

Filter Weighing and Anti-Static Accessories

Anti-static weighing pan, 130 mm diameter, for weighing modules with a readability of 0.1 mg or 0.01 mg	YWP01MS
Filter weighing pan, 75 mm diameter, for ultra-micro or micro balance models (weighing modules 6.6S, 2.7S; only together with DF draft shield)	VF2562
Filter weighing pan, 90 mm diameter, for ultra-micro or micro balance models (weighing modules 6.6S, 2.7S; only together with DF draft shield)	VF2880
Ionization blower to eliminate electrostatic charges on sample containers and samples	YIB01-0DR
Stat-Pen ionization probe for discharging electrostatically charged samples and filters	YSTP01

Special Applications

Density determination kit for solids and liquids: for weighing modules with a readability < 1 mg	YDK01MS
Density determination kit for solids and liquids: for weighing modules with a readability = 1 mg	YDK02MS
Q-Grip, universal holder for containers used for weighing and filters up to a diameter of 120 mm (replaces the original weighing pan; for Cubis® models with 0.01 and 0.1 mg readability)	YFH01MS
Q-Grid weighing pan for Cubis® models with a readability of 10 mg or 100 mg (pan size of 206 × 206 mm) for weighing in laboratory hoods, safety weighing cabinets or workbenches (reduces exposure of the weighing pan to lift by strong air current; replaces standard weighing pan)	YWP03MS

Balance Tables

Balance table made of cast stone, for weighing with vibration dampening	YWT03
Wall console	YWT04
Balance table made of wood with cast-stone inset for precise, reliable weight measurements	YWT09

Weighing Accessories

Weighing scoop of chrome nickel steel, 90 × 32 × 8 mm	641214
Aluminum weighing scoop, 4.5 mg (250 units) for ultra-micro and micro balance models	6565-250
Aluminum weighing scoop, 52 mg (50 units) for ultra-micro and micro balance models	6566-50
Support arm for 10 | 100 mg precision weighing modules for raised mounting of MSE, MSU and MSA display and control units	YDH01MS
Support arm for precision weighing modules with 100 mg | 1 g readability and weighing capacity ≥ 20 kg for raised mounting of MSE, MSU and MSA display and control units	YDH02MS
Hook for below-balance weighing; for precision weighing modules with 100 mg | 1 g readability and weighing capacity ≥ 20 kg (not for models verified for use in legal metrology; selectable CE features)	69EA0040

ME36S

High-Capacity Micro and Semi-Micro Balances (non-Cubis® series)

Features
- Fully automatic draft shield system
- Coated, conductive draft shield, helps prevent static build-up
- Stored calibration | adjustment records
- Four digital filter levels optimally adapts to ambient conditions

Applications
- Unit Toggling
- % Weighing
- Checkweighing
- Averaging | Animal Weighing
- Formulation
- Net-Total
- Statistics
- Backweighing
- Timer
- Density Determination
- Memory (300 samples)

Specifications

Model	Capacity [g]	Read-ability [µg]	Repro-ducibility [µg] (±)	Linearity [µg] (±)	Pan Size [mm | in.]	Calibration Type	Wt [g]	Shipping Wt [kg | lbs]
ME36S	31	1	2	10	∅ 30 | 1.2	isoCAL	20+10*	28.2 | 62.2

*custom weight set required. Contact Sartorius for more information

Ordering Information

Accessories

641214	Weighing scoop, made of chrome-nickel steel, 90 mm × 32 mm × 8 mm
6565-250	Weighing scoop, made of aluminium, 4.5 mg
6566-50	Weighing scoop, made of aluminium, 52 mg
YPE01RC	Foot switch, incl. T-connector, for MSA, MSU
YCP04-HW + VF3677	Pipette Calibration Set (hardware) for ME and CPA analytical balances (not ME5 and ME36S). Consists of moisture trap and all needed adapters
YCC01-MED27	Cable for connecting the weighing cell to a separate display and control unit (length 2.70 m) for all ME models (except ME5)

CPA26P and CPA225D

High-Capacity Micro and Semi-Micro Balances (non-Cubis® series)

CPA26P

Features
- Monolithic weight cell for fast reliable results
- Large manual draft shield
- (CPA26P) 5-gram weighing range is available over the entire 21-gram range
- Positive "click-action" keys
- Four digital filter levels optimally adapts to ambient conditions
- (CPA225D) dual-range semi-micro balance with 100/220g capacity × 0.01/0.1 mg readability

Applications
- Counting
- % Weighing
- Unit Toggle
- Averaging|Animal Weighing
- Net-Total

CPA225D

Specifications

Model	Capacity [g]	Read-ability [µg]	Repro-ducibility [µg] (±)	Linearity [µg] (±)	Pan Size [mm|in.]	Calibration Type	Wt [g]	Shipping Wt [kg | lbs]
CPA26P	5 | 21	2 | 10	4	8	∅ 50 | 1.97	isoCAL	20	10.10 | 22.3
CPA225D	40 100 220	10 10 100	20 50 100	30 100 200	∅ 80 | 3.1	isoCAL	200	10.80 | 23.8

Ordering Information

Accessories for All Balance Models

YCP04-HW + VF3677	Pipette Calibration Set (hardware) for ME and CPA analytical balances (not ME5 and ME36S). Consists of moisture trap and all needed adapters
YDP20-0CE	Data printer, verified for use in legal metrology; with date, time, statistics and transaction counter functions
6906937	Paper rolls, for YDP20-0CE; 5 units, each with 40 m
6906918	Ink ribbon cassette, for YDP20-0CE
YWT09	Balance table, wood with synthetic stone plate for precise, reliable weighing operations
YWT03	Balance table, cast stone, with vibration dampeners
YWT04	Wall console for micro, analytical and precision balances
YHS02	Hand switch, incl. T-connector
YFS01	Foot switch, incl. T-connector
YIB01-0DR	Ionizing blower, for electrostatically charged samples 220 V
YIB01-0UR	Ionizing blower, for electrostatically charged samples 110 V
YSTP01	Stat pen, unit to neutralize static electricity on samples (100 V to 230 V, 50 | 60 Hz)
YTC01	T-connector, for connecting two peripheral devices to the balance
YCC01-USBM2	RS-232C|USB Interface cable, for connecting the balance to a PC with USB port; length approx. 2 m
7357312	RS-232C Interface cable, for connecting the balance to a PC with 25-pin com port; length approx. 2 m
7357314	RS-232C Interface cable, for connecting the balance to a PC with 9-pin com port; length approx. 2 m
YDK01	Density Kit for 0.01 mg balances
YRB11Z	Rechargeable battery pack for standard lab balances
6960CP04	In-use cover for 0.01 mg balances

Secura®

Standard Balances

Secura® balances are ideal for users for whom accurate weighing results and convenient operation are self-evident. Beyond this, Secura® features safe and secure protection systems such as real-time leveling support or automatic internal adjustment.

Description
Secura® gives you the security and peace of mind of knowing that you have done everything right. Besides providing highly accurate weighing results and operating convenience, Secura® also features built-in protection systems for complete reliability and regulatory compliance – the safe and secure way.

Real-time guidance prompts for leveling, automatic internal adjustment and 100% traceable, clear documentation – with sample and batch identifiers – make your lab work more efficient. First, the new operating concept of Secura® will noticeably ease your daily workload during weighing and, second, its APC function – Advanced Pharma Compliance – will relieve you from tedious and time-consuming documentation and monitoring tasks.

Applications
Mixing, Components, Statistics, Weighing, Density, Percentage, Checkweighing, Peak Hold, Counting, Mass Unit Conversion and Unstable Conditions.

Languages
English, French, German, Hungarian, Italian, Polish, Portuguese, Russian, Spanish, Turkish, Chinese, Japanese and Korean.

Benefits
- Integrated protection systems for absolutely correct and reliable results
- Avoid errors caused by an unleveled balance
- The highest accuracy ensured by isoCAL automatic calibration and adjustment
- USP-compliant weighing with SQmin
- Selectable security levels to adapt the balance's error response to your needs
  - GLP | GMP-compliant documentation with alphanumeric sample and batch identifiers
  - Customizable GLP | GMP header information
  - Safe and secure password protection

reddot design award
product design

product design award
2013

communication design award
2013 GOLD

Specifications

Semi-Micro Balances

Model		225D	125
Weighing capacity	g	60|120|220	60|120
Readability	mg	0.01|0.01|0.1	0.01|0.01
Repeatability	± mg	0.02|0.04|0.07	0.02|0.04
Linearity	± mg	0.1|0.1|0.2	0.1|0.1
Typical stabilization time	s	6|6|2	6|6
Minimum sample weight as per USP, typical**	mg	25*	25*
Weighing pan size	mm	∅ 80	∅ 80
Net weight, approx.	kg	7.8	7.8
Dimensions, D × W × H	mm	376 × 214 × 316	376 × 214 × 316
Type of calibration		isoCAL	isoCAL

Analytical Balances

Model		324	224	124
Weighing capacity	g	320	220	120
Readability	g	0.0001	0.0001	0.0001
Repeatability	± g	0.0001	0.0001	0.0001
Linearity	± g	0.0003	0.0002	0.0002
Typical stabilization time	s	2	2	2
Minimum sample weight as per USP, typical*	g	0.16	0.12	0.12
Weighing pan size	mm	∅ 90	∅ 90	∅ 90
Net weight, approx.	kg	7.9	5.1	5.1
Dimensions, D × W × H	mm	376 × 214 × 316	360 × 216 × 320	360 × 216 × 320
Type of calibration		isoCAL	isoCAL	isoCAL

Milligram Balances

Model		613	513	313	213
Weighing capacity	g	610	510	310	210
Readability	g	0.001	0.001	0.001	0.001
Repeatability	± g	0.001	0.001	0.001	0.001
Linearity	± g	0.002	0.002	0.002	0.002
Typical stabilization time	s	1	1	1	1
Minimum sample weight as per USP, typical*	g	1.5	1.5	1.5	1.5
Weighing pan size	mm	∅120	∅120	∅120	∅120
Net weight, approx.	kg	5.1	5.1	5.1	5.1
Dimensions, D × W × H	mm	360 × 216 × 320	360 × 216 × 320	360 × 216 × 320	360 × 216 × 320
Type of calibration		isoCAL	isoCAL	isoCAL	isoCAL

* in combination with YSP01SQP, high-performance weighing pan, 80 mm, slotted

** According to USP (United States Pharmacopeia) Chapter 41, the optimal operating range is defined as the range from 820 d to the maximum weighing capacity. Depending on the installation location and environmental conditions, the value may be higher.

Precision Balances

Model		6102	5102	3102	2102	1102	612
Weighing capacity	g	6,100	5,100	3,100	2,100	1,100	610
Readability	g	0.01	0.01	0.01	0.01	0.01	0.01
Repeatability	± g	0.01	0.01	0.01	0.01	0.01	0.01
Linearity	± g	0.02	0.02	0.02	0.02	0.02	0.02
Typical stabilization time	s	1	1	1	1	1	1
Minimum sample weight as per USP, typical*	g	12	12	12	12	12	12
Weighing pan size	mm	∅180	∅180	∅180	∅180	∅180	∅180
Net weight, approx.	kg	5.2	5.2	5.2	5.2	5.2	5.2
Dimensions, D × W × H	mm	360 × 216 × 95	360 × 216 × 95	360 × 216 × 95	360 × 216 × 95	360 × 216 × 95	360 × 216 × 95
Type of calibration		isoCAL	isoCAL	isoCAL	isoCAL	isoCAL	isoCAL

Data interface	mini USB – Automatic recognition of Sartorius printer models YDP30 and YDP40 – Direct data transfer to Microsoft® application programs – Programmable interval for data output – Choice of SBI, xBPI, table format or text format data transfer protocols
APC functions (Advanced Pharma Compliance)	– Monitoring if you are within the accepted operating range according to the requirements of the new USP, Chapter 41 – SQmin – Password protection of setup settings – Fully automatic temperature- and time-controlled internal adjustment – isoCAL – Temporary blockage of data transfer to printer or computer when uncertain weighing results are detected, such as when you are out of the accepted operating range according to USP, the balance is not levelled or isoCAL adjustment needs to be performed – Storage of all calibration, adjustment and leveling procedures data – Cal Audit Trail
Leveling	Intelligent, opto-electronic level sensor with alarm function and interactive user guidance for reliable and safe leveling
Display	Touch screen with Sartorius graphical user interface
Verified versions	All models can be obtained with a type-approval certificate for use in legal metrology as legal for trade

* According to USP (United States Pharmacopeia) Chapter 41, the optimal operating range is defined as the range from 820 d to the maximum weighing capacity. Depending on the installation location and environmental conditions, the value may be higher.


Secura
sartorius
PREV
NEXT

Quintix®

Standard Balances

Quintix® sets new benchmarks in every aspect for standard lab balances. A number of features make your workflow much more efficient, such as fully automatic internal adjustment, direct data transfer, ergonomic style and, above all, the entirely new touch-screen user interface with built-in application programs.

Description
Sartorius teamed up with experienced lab users to develop the user interface of the new Quintix®. Lab users' No. 1 priority was to ensure easy, intuitive operation without having to read the manual first. They did it! The self-explanatory icons and plain-text prompts on the large touch screen show you all the information you need to know for the procedure – no more, no less.

Experience easy and convenient data transfer to your PC without the need for extra software. Quintix® substantially simplifies processing data in spreadsheets. How? After connecting the USB port on Quintix® to a computer, just open the Windows® application you need.

This Plug & Work technology in Quintix® saves you considerable time and effort in generating fast and reliable documents. Achieve the highest accuracy and convenience with fully automatic internal temperature- and time-controlled adjustment feature. Temperature fluctuations have an influence on the accuracy of your weighing results. This is why every Quintix® comes equipped with the internal adjustment function isoCAL that ensures consistently accurate results. Each time isoCAL is performed, Quintix® records all data on this procedure so it can be traced for your quality assurance.

Applications
Mixing, Components, Statistics, Weighing, Density, Percentage, Checkweighing, Peak Hold, Counting, Mass Unit Conversion and Unstable Conditions.

Languages
English, French, German, Hungarian, Italian, Polish, Portuguese, Russian, Spanish, Turkish, Chinese, Japanese and Korean.

Benefits
- Convenient and intuitive operating design with integrated application programs
- GLP | GMP-compliant printout
- Fully automatic isoCAL self-adjustment functionality
- Chemically resistant housing

Specifications

Semi-Micro Balances

Model		125D	65	35
Weighing capacity	g	40|60|120	40|60	30
Readability	mg	0.01|0.01|0.1	0.01|0.01	0.01
Repeatability	± mg	0.02|0.04|0.07	0.02|0.04	0.03
Linearity	± mg	0.1|0.1|0.2	0.1|0.1	0.1
Typical stabilization time	s	6|6|2	6|6	6
Weighing pan size	mm	∅ 80	∅ 80	∅ 80
Net weight, approx.	kg	7.8	7.8	7.8
Dimensions, D × W × H	mm	376 × 214 × 316	376 × 214 × 316	376 × 214 × 316
Type of calibration		isoCAL	isoCAL	isoCAL

Analytical Balances

Model		224	124	64
Weighing capacity	g	220	120	60
Readability	g	0.0001	0.0001	0.0001
Repeatability	± g	0.0001	0.0001	0.0001
Linearity	± g	0.0002	0.0002	0.0002
Typical stabilization time	s	2	2	2
Weighing pan size	mm	∅ 90	∅ 90	∅ 90
Net weight, approx.	kg	4.9	4.9	4.9
Dimensions, D × W × H	mm	360 × 216 × 320	360 × 216 × 320	360 × 216 × 320
Type of calibration		isoCAL	isoCAL	isoCAL

Milligram Balances

Model		613	513	313	213
Weighing capacity	g	610	510	310	210
Readability	g	0.001	0.001	0.001	0.001
Repeatability	± g	0.001	0.001	0.001	0.001
Linearity	± g	0.002	0.002	0.002	0.002
Typical stabilization time	s	1	1	1	1
Weighing pan size	mm	∅120	∅120	∅120	∅120
Net weight, approx.	kg	4.9	4.9	4.9	4.9
Dimensions, D × W × H	mm	360 × 216 × 320	360 × 216 × 320	360 × 216 × 320	360 × 216 × 320
Type of calibration		isoCAL	isoCAL	isoCAL	isoCAL

Precision Balances

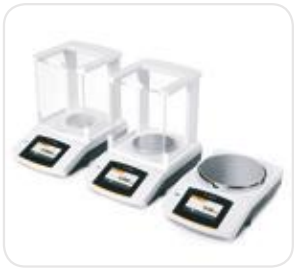
Model		6102	5102	3102	2102	1102	612	412	6101	5101	2101	6100	5100
Weighing capacity	g	6,100	5,100	3,100	2,100	1,100	610	410	6,100	5,100	2,100	6,100	5,100
Readability	g	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.1	0.1	0.1	1	1
Repeatability	± g	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.1	0.1	0.1	0.5	0.5
Linearity	± g	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.3	0.3	0.3	1	1
Typical stabilization time	s	1	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Weighing pan size	mm	∅180											
Net weight, approx.	kg	5.2	5.2	5.2	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
Dimensions, D × W × H	mm	360 × 216 × 95											
Type of calibration		isoCAL											

Data interface	Mini USB – Automatic recognition of Sartorius printer models YDP30 and YDP40 – Direct data transfer to Microsoft® application programs – Programmable interval for data output – Choice of SBI, xBPI, table format or text format data transfer protocols
Draft shield for analytical balances	– Analytical draft shield chamber with doors that glide open smoothly for fatigue-free weighing – Interior chamber featuring spill-proof design; exceptionally easy to clean – All panes can be individually cleaned or exchanged
Anti-theft device	Kensington lock and lug for attaching a chain or a cable
Below-balance weighing	Standard, built-in feature
Display	Touch screen with Sartorius graphical user interface
Supervisor lock	Menu lock for protection against unintentional changes
Verified versions	All analytical, milligram and precision models (except 412 and 2101) can be obtained with a type-approval certificate for use in legal metrology as legal for trade


sartorius
+6.5
g/cm³
END
Quintix

Practum®

Standard Balances



You can't go wrong with the Practum®: a foolproof, exceptionally rugged and reliable lab balance. Practum® has everything you need for standard applications.

Description
Get best the value for your money - without any compromises in precision and reliability. Rely on consistent readings and excellent repeatability ensured by Sartorius quality and technology developed and designed in Germany.

Thanks to the convenient Plug & Work technology, the USB port automatically detects when a Sartorius laboratory printer is connected to the Practum®. This interface also enables you to transfer your weighing data directly into a Microsoft® Excel spreadsheet, without the need for additional software.

A calibrated balance is essential for obtaining reliable weighing results. Therefore, every Practum® comes with a high-quality external calibration weight, including a calibration certificate, to help ensure correct weighing results.

Applications
Weighing, Density, Percentage, Checkweighing, Peak Hold, Counting and Unstable Conditions.

Languages
English, French, German, Hungarian, Italian, Polish, Portuguese, Russian, Spanish, Turkish, Chinese, Japanese and Korean.

Benefits
- Consistent readings with excellent repeatability featured by Sartorius quality and technology
- High reliability and durability based on rugged design with integrated overload protection feature
- Advanced operating design
- Supervisor lock to prevent unwanted setting changes
- High-quality external calibration weight for traceable weighing results

Specifications

Analytical Balances

Model		224	124	64
Weighing capacity	g	220	120	60
Readability	g	0.0001	0.0001	0.0001
Repeatability	± g	0.0001	0.0001	0.0001
Linearity	± g	0.0002	0.0002	0.0002
Typical stabilization time	s	2	2	2
Weighing pan size	mm	∅ 90	∅ 90	∅ 90
Net weight, approx.	kg	4.5	4.5	4.5
Dimensions, D × W × H	mm	360 × 216 × 320	360 × 216 × 320	360 × 216 × 320
External calibration		200 | E2	100 | E2	50 | E2

Milligram Balances

Model		513	313	213
Weighing capacity	g	510	310	210
Readability	g	0.001	0.001	0.001
Repeatability	± g	0.001	0.001	0.001
Linearity	± g	0.002	0.002	0.002
Typical stabilization time	s	1	1	1
Weighing pan size	mm	∅120	∅120	∅120
Net weight, approx.	kg	4.9	4.9	4.9
Dimensions, D × W × H	mm	360 × 216 × 320	360 × 216 × 320	360 × 216 × 320
External calibration		200 | E2	200 | F1	200 | F1

Precision Balances

Model		3102	2102	1102	612	412	6101	5101	2101	6100	5100
Weighing capacity	g	3,100	2,100	1,100	610	410	6,100	5,100	2,100	6,100	5,100
Readability	g	0.01	0.01	0.01	0.01	0.01	0.1	0.1	0.1	1	1
Repeatability	± g	0.01	0.01	0.01	0.01	0.01	0.1	0.1	0.1	0.5	0.5
Linearity	± g	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	1	1
Typical stabilization time	s	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1	1
Weighing pan size	mm						∅180				
Net weight, approx.	kg	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Dimensions, D × W × H	mm					360 × 216 × 95					
External calibration		2,000 | F1	2,000 | F1	1,000 | F1	500 | F2	200 | F1	2,000 | F2	2,000 | F2	2,000 | F2	2,000 | F2	2,000 | F2

Data interface	Mini USB – Automatic recognition of Sartorius printer models YDP40 – Direct data transfer to Microsoft® application programs without any additional software – Programmable interval for data output – Choice of SBI, table format or text format data transfer protocols
Housing and draft shield	Robust and easy-to-clean housing with easy-to-operate draft shield (where applicable)
Anti-theft device	Kensington lock and lug for attaching a chain or a cable
Below-balance weighing	Standard, built-in feature
Display	Touch screen with Sartorius graphical user interface

Entris®

Standard Balances

Get the reliability and quality of a Sartorius balance, but only pay for the features you really need.

Entris® has been specially designed to deliver effective and reliable weighing results in your daily work. The easy and clearly structured user interface, the logical key assignment and excellent readability are ideal features for error-free operation.

Description
The backlit and high-contrast display ensures excellent readability. Easy navigation with function keys and the simple-to-read level indicator on the front enable user-friendly and fast operation.

The top and side sliding doors and easy-to-remove stainless steel parts of the draft shield chamber make Entris® convenient for thorough cleaning.

Each Entris® model is also available with an internal, motorized adjustment function for optimal weighing accuracy and operating convenience.

Applications
Weighing, Density, Percentage, Counting, Animal Weighing and Mass Unit Conversion.

Languages
English, French, German, Italian, Polish, Russian and Spanish.

Benefits
- Best price-performance ratio
- User-friendly guidance due to the built-in basic application programs and function keys
- Accurate and reliable weighing results thanks to Sartorius quality and technology "Made in Germany"
- Rugged and compact design for ease of use
- Draft shield easy to remove for fast and thorough cleaning

Specifications

Model	Weighing capacity (g)	Read-ability (mg)	Repeat-ability (± mg)	Linearity (± mg)	Typical stabilization time (s)	Weighing pan size (mm)	Dimensions D × W × H (mm)	Net weight approx. (kg)	Type of calibration
Analytical Balances									
224i	220	0.1	0.1	0.2	2.5	∅ 90	303 × 230 × 330	4.8	Internal
224	220	0.1	0.1	0.2	2.5	∅ 90	303 × 230 × 330	4.4	External
124i	120	0.1	0.1	0.2	2.5	∅ 90	303 × 230 × 330	4.8	Internal
124	120	0.1	0.1	0.2	2.5	∅ 90	303 × 230 × 330	4.4	External
64i	60	0.1	0.1	0.2	2.5	∅ 90	303 × 230 × 330	4.8	Internal
64	60	0.1	0.1	0.2	2.5	∅ 90	303 × 230 × 330	4.4	External
Milligram Balances									
623i	620	1	1	2	1.0	∅ 115	303 × 230 × 136	3.6	Internal
623	620	1	1	2	1.0	∅ 115	303 × 230 × 136	3.2	External
423i	420	1	1	2	1.0	∅ 115	303 × 230 × 136	3.6	Internal
423	420	1	1	2	1.0	∅ 115	303 × 230 × 136	3.2	External
323i	320	1	1	2	1.1	∅ 115	303 × 230 × 136	3.6	Internal
323	320	1	1	2	1.1	∅ 115	303 × 230 × 136	3.2	External
153i	150	1	1	2	1.3	∅ 115	303 × 230 × 136	3.0	Internal
153	150	1	1	2	1.3	∅ 115	303 × 230 × 136	2.6	External
Precision Balances									
6202i	6,200	10	10	30	1.5	180 × 180	303 × 230 × 91	3.5	Internal
6202	6,200	10	10	30	1.5	180 × 180	303 × 230 × 91	3.1	External
4202i	4,200	10	10	30	1.5	180 × 180	303 × 230 × 91	3.5	Internal
4202	4,200	10	10	30	1.5	180 × 180	303 × 230 × 91	3.1	External
3202i	3,200	10	10	30	1.5	180 × 180	303 × 230 × 91	3.5	Internal
3202	3,200	10	10	30	1.5	180 × 180	303 × 230 × 91	3.1	External
2202i	2,200	10	10	30	1.5	180 × 180	303 × 230 × 91	3.5	Internal
2202	2,200	10	10	30	1.5	180 × 180	303 × 230 × 91	3.1	External
822i	820	10	10	30	1.5	∅ 150	303 × 230 × 87	2.6	Internal
822	820	10	10	30	1.5	∅ 150	303 × 230 × 87	2.0	External
8201i	8,200	100	100	300	1.5	180 × 180	303 × 230 × 91	3.5	Internal
8201	8,200	100	100	300	1.5	180 × 180	303 × 230 × 91	2.7	External
5201i	5,200	100	100	300	1.5	180 × 180	303 × 230 × 91	3.5	Internal
5201	5,200	100	100	300	1.5	180 × 180	303 × 230 × 91	2.7	External
2201i	2,200	100	100	300	1.5	180 × 180	303 × 230 × 91	3.5	Internal
2201	2,200	100	100	300	1.5	180 × 180	303 × 230 × 91	2.7	External

Accessories for Secura®, Quintix®, Practum® and Entris®

Premium GLP Lab Printer

Standard Lab Printer

Density Kit YDK03

Ordering Information

Printer

Item	Description	Secura®	Quintix®	Practum®	Entris®
YDP30	Premium GLP lab printer	•	•		
- 69Y03285	Printer paper for GLP lab printer	•	•		
- 69Y03286	Continuous labels for GLP lab printer	•	•		
YDP40	Standard lab printer	•	•	•	
- 69Y03287	Standard thermosensitive paper for standard lab printer	•	•	•	
- 69Y03288	Self-adhesive thermosensitive paper for standard lab printer	•	•	•	
YDP20-0CE	Data printer	•	•	•	•
- 6906937	Paper rolls, 5 units, each with 40 m	•	•	•	•
- 6906918	Ink ribbon cassette	•	•	•	•

Data Communication Cable

Item	Description	Secura®	Quintix®	Practum®	Entris®
YCC04-D09	Data cable, mini USB | USB A	•	•	•	
YCC03-D09	Data cable, mini USB | RS232 9-pin	•	•	•	
YCC03-D25	Data cable, mini USB | RS232 25-pin	•	•	•	
YCC01-USBM2	Data cable, RS-232 | USB				•

Density Kit

Item	Description	Secura®	Quintix®	Practum®	Entris®
YDK05	Density kit for 0.01 mg balances	•	•		
YDK03	Density kit for 0.0001 g | 0.001 g balances	•	•	•	
YDK04	Density kit for 0.01 g balances	•	•	•	
YDK01LP	Density kit for 0.0001 g balances				•

Weighing Pans

Item	Description	Secura®	Quintix®	Practum®	Entris®
YSP01SQP	High-performance weighing pan, 80 mm, slotted, for 0.01 mg balances	•	•		
YWP01SQP	Weighing pan, 90 mm, conversion kit for 0.01 mg balances included	•	•		
YFW01SQP	Filter weighing pan, 130 mm, conversion kit for 0.01 mg balances included	•	•		

Round Glass Draft Shield

Stat-Pen Ionization Probe

Rechargeable Battery Pack

Transportation Boxes

Item	Description	Secura®	Quintix®	Practum®	Entris®
YDB-SECURA-5	Demo box for 0.01 mg balances	•	•		
YDB-SECURA	Demo box for 0.0001 g | 0.001 g balances	•	•	•	
YDB-SECURA-P	Demo box for 0.01 g balances	•	•	•	

General

Item	Description	Secura®	Quintix®	Practum®	Entris®
YRB11Z	Rechargeable battery pack for standard lab balances	•	•	•	•
YDS01SQP	Draft shield for 0.01 g | 0.1 g | 1 g balances	•	•	•	
YDS02SQP	Round glass draft shield for 0.001 g balances	•	•	•	
6960MA03	In-use cover for 0.01 mg balances	•	•		
6960SE01	In-use cover for 0.0001 g | 0.001 g balances	•	•	•	
6960SE02	In-use cover for 0.01 g balances	•	•	•	
6960SE03	In-use cover for 0.0001 g | 0.001 g balances	•	•	•	
6960SE04	In-use cover for 0.01 mg balances	•	•		
6960ED01	In-use cover for models with a rectangular weighing pan				•
6960ED02	In-use cover for models with a round weighing pan				•

Anti-static Accessories

Item	Description	Secura®	Quintix®	Practum®	Entris®
YIB01-0DR	Ionization blower to eliminate electrostatic charges on sample containers and samples	•	•	•	•
YSTP01	Stat-Pen ionization probe for discharging electrostatically charged samples and filters	•	•	•	•

Furniture

Item	Description	Secura®	Quintix®	Practum®	Entris®
YWT09	Balance table, wood with synthetic stone plate for precise, reliable weighing operations	•	•	•	•
YWT03	Balance table, cast stone, with vibration dampeners	•	•	•	•
YWT04	Wall console for micro, analytical and precision balances	•	•	•	•


sartorius
Moisture in %M
Start new measurement
%
Standard

Moisture Analyzers

Table of Contents

The moisture content of a material is an important parameter and affects the usability, the processibility, stability and shelf life of the product. Moisture plays a significant role for the quality of food, pharmaceutical, cosmetic, healthcare and chemical products as well as in environmental control. The determination of the moisture content of these materials in development and production is indispensable. Moisture is a price-determining factor, and most materials have an optimal content.

This means that every manufacturing industry needs to be able to determine the moisture content fast and reliably at each different level of a production process. This enables machine operators to correct a process on time to maintain quality.

Thermogravimetric moisture analyzers are the ideal choice for fast and precise determination of the moisture content. The loss in weight of the sample is determined by weighing and heating with an infrared heater. The loss on drying is continuously recording and analysis is automatically switched off when the drying endpoint has been reached and the final result is calculated and displayed.

The analyzer needs to accommodate the various requirements of the sample and user. Pasty or liquid samples require parameters that are different from those needed by solid or dry samples. The required measurement speed, resolution and flexibility of a device need to be considered as well as the place of analysis – inside a production facility or in a QC laboratory.

Sartorius offers a broad range of moisture analyzers that address these different sample requirements and customer needs. These moisture analyzers deliver fast, easy and accurate results for process and quality control applications. You can choose from the user-friendly basic model to our high-end moisture analyzer.

MA160

Manages Your Sophisticated Tasks

For the quality of a product the content of moisture is an important factor and its determination is one of the common analyses in product development and the manufacturing process. The different requirements of speed, resolution of the values measured or the operating design of a moisture analyzer must always be considered.

Description
The MA160 uses the thermogravimetric method to determine the moisture content of liquid, pasty and solid substances – conveniently, reliably and in a minimum amount of time. It delivers prompt, repeatable results and supports the development of new methods. The MA160 manages the generated methods professionally and allows the transfer to other instruments.

A lamp indicates the current measurement status and the ergonomic BetterClean design enables simple cleaning of the device.

Using the performance testing, the MA160 verifies its functionality – ensuring continuously flawless performance.

Applications
The MA160 is ideal for the moisture analysis of a varying range of samples. Typical areas of applications include moisture analysis of foods, beverages, pharmaceuticals, chemicals, paper materials and determination of the environmental moisture content.

Benefits
- High-speed measurements – for fast and accurate results
- Fast method development – solves the time-consuming problem of determining and evaluating the right parameters
- Reliable performance testing – it guarantees reliable results during routine work
- User-friendly operation – easy-to-understand menu simplifies the use of the MA160

Specifications

Model	MA160-1
Max. weighing capacity	200 g
Repeatability, typical	For an initial sample weight of approx. 1 g: ±0.2% For an initial sample weight of approx. 5 g: ±0.05%
Readability	1 mg, 0.01%
Typical sample quantity	5 g to 15 g
Reading display	Moisture content in % M and % g | dry matter (solids) in % S and g | RATIO in % M/S
Temperature range and settings	40°C to 160°C in 1°C increments Standby temperature selectable from 40 to 100°C
Sample heating	Infrared heating by an AURI heater, 600 W
Heating programs	Standard drying, gentle drying
Shutoff parameter	Fully automatic, semi-automatic, manual and with timer settings
Tongs for samples	For easy handling of sample pans
Interface	Mini USB port, automatic printer detection, direct data transfer to Microsoft® programs
Data transfer	SD card, method import and export function
Housing dimensions (W × D × H)	215 mm × 400 mm × 210 mm
Weight	Approx. 6.2 kg

Ordering Information

Accessories	
6965542	Disposable sample pans, 80 units, aluminum, 90 mm diameter
6906940	Glass fiber pad for analysis of pasty and fatty samples, hard quality, 80 units, 90 mm diameter
6906941	Glass fiber pad for analysis of liquid and fatty samples, soft quality, 200 units, 90 mm diameter
YHP01MA	ReproEasy pads, 10 pcs. for performance testing to verify the repeatability of the moisture analyzer
YST01MA	Tongs for handling sample pans
YCW452-AC-02	External calibration weight, 50 g (E2) with DAkkS certificate*
YDP30	Premium GLP laboratory printer
YDP40	Standard printer
YCC03-D09	Adapter cable for connecting the YDP20-0CE printer

* formerly known as DKD; DAkkS is the Germany's national accreditation body; DAkkS calibration certificates are internationally recognized

MA37

Your Reliable Partner for Routine Tasks

The MA37 is a next-generation moisture analyzer and continues the success story of the MA35. The MA37 delivers fast, accurate results and is easy to operate.

Description
The MA37 is a compact device. Its BetterClean design ensures effortless cleaning. The status light makes it easy to track the current progress of the measurement.

Therefore, the MA37 is ideal for users who require a fast, reliable moisture analyzer that is easy to operate and clean.

Applications
Typical areas of application include moisture analysis of foods, beverages, pharmaceuticals, chemicals, paper materials and determination of environmental moisture content.

Benefits
- Quick measurements – fast results
- Effortless cleaning – easily clean instrument parts thoroughly
- Clear display of measurement status – easy to track the measurement status
- User-friendly operation – easy-to-understand menu simplifies the use of the MA160

Specifications

Model	MA37-1
Max. weighing capacity	70 g
Repeatability, typical	For an initial sample weight of approx. 1 g: ± 0.2% For an sample weight approx. > 5 g: ± 0.05%
Readability	1 mg, 0.01%
Typical sample quantity	5 g to 15 g
Reading display	Moisture content in % M and % g | dry matter (solids) in % S and g | RATIO in % M/S
Temperature range and settings	40°C–160°C, in 1-degree increments Standby temperature selectable from 40 to 100°C
Sample heating	Infrared heating by a metal tube heater
Heating programs	Standard drying, gentle drying
Shutoff parameter	Fully automatic, semi-automatic, manual and with timer settings
Access to sample chamber	Removable hood with wide opening angle, SoftClose mechanism
Measuring program	1 program saved in a non-volatile memory (user-selectable method parameters)
Memory for data storage	Results are saved until the start of the next measurement
Sample inspection	LED-illuminated sample chamber, inspection window with a grid above the hood
Interface	Mini USB port, automatic printer detection, direct data transfer to Microsoft® programs
Housing dimensions (W × D × H)	215 mm × 400 mm × 210 mm
Weight	Approx. 6.2 kg

Ordering Information

Accessories	
6965542	Disposable sample pans, 80 pcs., aluminum, 90 mm diameter
6906940	Glass fiber pads for analysis of pasty and fatty samples, hard quality, 80 units, 90 mm diameter
6906941	Glass fiber pad for analysis of liquid and fatty samples, soft quality, 200 units, 90 mm diameter
YST01MA	Tongs for handling sample pans
YCW452-AC-02	External calibration weight, 50 g (E2) with DAkkS certificate*
YDP30	Premium GLP laboratory printer
YDP40	Standard printer
YCC03-D09	Adapter cable for connecting the YDP20-0CE printer

* formerly known as DKD; DAkkS is the Germany's national accreditation body; DAkkS calibration certificates are internationally recognized

LMA200PM

Speed Meets Analytical Precision

For samples with a high moisture content, microwave drying is the fastest and most effective thermogravimetric method for moisture analysis. Developed for analyzing moisture content ranging from approx. 8% to 100%, the LMA200PM performs moisture analysis in a fraction of the time it takes for other methods.

Description
The LMA200 delivers results between approx. 40 and 120 seconds on average. With a cylindrical design, a focused emission of microwave energy is channeled vertically through dual apertures at the bottom of the chamber. This concentrates the microwave energy specifically onto the sample. During the test, a carousel spins the sample, permitting even distribution of microwave energy. This prevents hot and cold spots from occurring, a familiar problem with conventional microwave analyzers.

The analytical weighing system with 0.1 mg resolution enables the LMA200 to be used for high-precision analysis. Intelligent endpoint determination simplifies analysis of the sample.

Applications
The LMA200 is ideal for samples with a moisture content of 8% to 100% moisture. Typical areas of application include moisture analysis of foods, beverages, pharmaceuticals and determination of environmental moisture content.

Benefits
- Ultra-high-speed measurements – exceptionally fast and accurate results in seconds
- Endpoint determination determination – fully automatic analysis
- Weighing system – very precise and accurate results
- Easy to operate – easy-to-understand menu

Specifications

Model	LMA200PM
Weighing capacity (g)	70
Measuring accuracy of the weighing system (g)	0.0001
Reproducibility on average for initial sample weight starting at approx. 1 g (%)	± 0.05
Sample carriers	90 mm diameter (3½") glass fiber pads
Display modes	% moisture, ppm moisture, % volatile components, % dry weight (solids), ppm dry weight, g dry weight, mg loss on drying, % RATIO
Measuring range	Approx. 8 to 100% moisture
Sample heating	Microwave generator with 1,000 W input power
Power control for heating	2 to 100%, adjustable in 1% increments
Endpoint determination	– Fully automatic, by means of sensors for mass and moisture – User-defined as loss of weight/time: 1 mg to 50 mg | 1 sec. to 99 sec. 0.1% to 9.9% | 1 sec. to 99 sec. – Timer mode: 0.1 min. to 99.9 min.
Analysis time (in seconds)	Approx. 40 to 120 (depends on sample and moisture)
Programs	320 saved to non-volatile memory
Data printer	Thermal printer, built-in
Moisture analysis report	– User-configured GLP record – The report can be printed on non-fading paper by the built-in thermal printer.
Operator guidance	– Menu-driven, alphanumeric, interactive text prompts (English, French, German, Italian and Spanish selectable) – 5 pre-programmed function keys
Data interfaces	– 1 × RS-232 port for PC – 1 × Ethernet port
Housing dimensions (mm | in.) W × D × H	510 × 535 × 304 | 20 × 21 × 12
Weight, approx. (kg | lb)	22 | 48.5
Power source	230 V, 50 Hz, 1,200 VA (LMA200PM-000EU) 120 V, 60 Hz, 1,200 VA (LMA200PM-000US)
Power consumption (VA)	1,200 max.

Ordering Information

Accessories	
6906941	Glass fiber pads, for moisture analysis of liquid, pasty or fatty samples (200/box), soft quality
69M30100	Thermo-sensitive paper, 5 rolls/package
YAT01MA	Disposable pipettes, box of 500

MA100

Speed Meets Analytical Precision

The MA100 moisture analyzer features the highest measuring accuracy and precision for a thermogravimetric moisture analyzer.

Description
With the accuracy of an analytical balance, the MA100 delivers exact results within minutes and has excellent reproducibility. On top of this, its extensive functions offer a high level of flexibility to meet frequently changing requirements on the parameters of different types of samples or on the sequence of analysis. The MA100 moisture analyzer is perfect for quality control and research and development.

Applications
The MA100 is ideal for samples with a relatively low moisture content of 1% to 10% like plastics or chemicals. It is also excellently suited to moisture measurement of samples such as pharmaceuticals or healthcare products, paints, foods, beverages and for determination of the environmental moisture content.

Benefits
- Quick and exceptionally precise measurements – fast and highly accurate results
- Easy access to sample chamber – makes it easy to clean the analyzer
- Internal calibration – supports compliance with GLP standards
- Easy to operate – easy-to-understand menu

Specifications

Model	MA100C | MA100Q (Heating Elements C = Ceramic, Q = Quartz)
Max. weighing capacity	100 g
Repeatability, typical	For an initial sample weight of approx. 1 g: ± 0.1% For an initial sample weight of approx. 5 g: ± 0.02%
Readability	1 mg, 0.01% | 0.1 mg, 0.001%
Typical sample quantity	5 g to 15 g
Reading display	% moisture content (optionally available with conversion factor) | % dry weight | RATIO | mg weight loss | g residue | g/kg residue | g/l residue
Temperature range and settings	30°C to 230°C, stand-by temperature selectable from 30°C to 100°C in 1-degree increments
Sample heating	Infrared heating using a coiled quartz heating element (CQR)
Heating programs	Standard, quick, gentle and phase drying
Shutoff criteria	Optional: – Fully automatic – SPRM mode (optimization to a reference system) – Semi-automatic (1 mg to 50 mg | 5 sec. to 300 sec.) – Semi-automatic (0.1% to 5.0% | 5 sec. to 300 sec.) – Timer setting (3 × 0.1 min. to 999 min.) – Timer setting + fully/semi-automatic (2 × 0.1 min. to 999 min.) + automatic) – Manual
Access to sample chamber	Motorized cover
Measuring program	30 programs saved in a non-volatile memory (user-selectable parameters)
Data storage	Statistics on results for the last 9,999 measurements/program
Operator guidance features	Menu-driven, alphanumeric, interactive text prompts (5 languages selectable)
Parameter | data entry	– Optimized text input via soft keys – Numeric input via keypad – Optional data input via barcode scanner
Report printout	– Printout using the optional, internal printer YDP01MA – Configurable GLP report for measuring results | calibration | adjustment (5 languages selectable)

Test equipment monitoring	– Internal calibration weight – Automatic reproTEST for the weighing system – Automatic temperature calibration with optional temperature adjustment set, YTM03MA – Documentation in accordance with the applicable quality assurance requirements
Safety	Parameter settings password-protected against unauthorized access
Voltage frequency	48 to 60 Hz
Power consumption	Max. 700 VA
Operating temperature range	10°C to 30°C
Housing dimensions (W × D × H)	350 mm × 453 mm × 156 mm
Weight	Approx. 8.0 kg

Ordering Information

Accessories

6965542	Disposable sample pans, aluminum, round (80/box)
6906940	Glass fiber pads, for moisture analysis of liquid, pasty, greasy or fatty samples (80/box), hard quality
6906941	Glass fiber pads, for moisture analysis of liquid, pasty, greasy or fatty samples (200/box), soft quality
YCW4528-02	External calibration weight, 1 × 50 g, E2 with DAkkS certificate*
YDP01MA	Internal data printer, integrated into the device
YDP20-0CE	Data printer, external, verified for use in legal metrology; with date, time, statistics and transaction counter functions
6906918	Ink ribbon cassette, for YDP20-0CE and YDP01MA
6906937	Paper rolls for data printer, 5 rolls, 50 m each

* formerly known as DKD; DAkkS is the Germany's national accreditation body; DAkkS calibration certificates are internationally recognized

Mass Comparators

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The new Cubis® MCM manual mass comparators are the first devices on the market that combine metrological weighing expertise and integrated control of workflows in line with the recommendations of the International Organization of Legal Metrology (OIML). In the OIML R111-1 International Recommendation, this organization defines metrological and technical requirements.

A total of 14 Cubis® MCM manual mass comparators are available with maximum capacities from 6.1 g to 64 kg and readabilities from 0.1 µg to 10 mg. All models with draft shields are supplied standard with a climate module equipped with climate sensors for temperature, humidity and air pressure. For mass comparator models without a draft shield, an external climate module with the appropriate sensors is included as part of the equipment supplied. A DAkkS* calibration certificate can be provided for the climate sensors on request.

* DAkkS is the Germany's national accreditation body; DAkkS calibration certificates are internationally recognized

Cubis® MCM

Integrated Workflow Control
Integrated workflow control in the Cubis® MCM manual mass comparators minimizes operating error rates: During a measurement process, the mass comparator provides user guidance prompts and instructions about the next step to perform. This significantly reduces the "human" factor that can compromise the accuracy of mass determination, making results more reliable. At the same time, the Cubis® MCM ensures optimal, user-friendly workflows to reduce stress on operators.

Integrated Climate Sensors
The sensors integrated in the mass comparator automatically log climate data like temperature, air pressure and humidity for calculating the air buoyancy correction at the site of measurement. This climate data can be documented on a computer so that you can check at any time that the limits on temperature, air pressure and humidity for the respective calibration levels are in compliance for accuracy classes E1, E2, F1 or F2.

The Fastest Mass Comparison Cycles
Compared with conventional units, Cubis® MCM mass comparators are by far the fastest in completing ABA, ABBA or AB1...BnA cycles to determine the conventional mass and its combined standard uncertainty.

The manual mass comparators can seamlessly be integrated in the infrastructure of mass standards laboratory. Based on the Cubis® Q-Com communication concepts, they can be integrated in existing networks and any type of data desired can be transferred to other devices.

Specifications and Ordering Information

Cubis® MCM up to 1 kg				
Order number, with calibrated climate sensors and DAkkS certificate	**MCM6.7-DAkkS**	**MCM36-DAkkS**	**MCM66-DAkkS**	**MCM106-DAkkS**
Order number, with uncalibrated climate sensors	**MCM6.7**	**MCM36**	**MCM66**	**MCM106**
Design	1	2	2	2
Maximum capacity	6.1 g	31 g	61 g	111 g
Readability	0.1 µg	1 µg	1 µg	1 µg
Range of use	0 to 6 g	0 to 30 g	0 to 60 g	0 to 111 g
Repeatability "s"				
– under optimal conditions [1]	0.15 µg	1 µg	1 µg	1 µg
– under standard conditions E [2]	0.3 µg	1.5 µg	2 µg	2 µg
– at 1/3 load [2]	0.2 µg			
– at 1/10 load [2]		0.7 µg	0.7 µg	0.7 µg
– under standard conditions F [3]	0.6 µg	4 µg	5 µg	5 µg
Electronic weighing | tare range	6.1 g	31 g	61 g	61 g
Substitution weights				50 g
Linearity	1 µg	6 µg	8 µg	8 µg
Eccentric (off-center) load deviation	0.25 µg / mm	1 µg / mm	1 µg / mm	1 µg / mm
Stabilization time	10 s	3 s	3 s	5 s
Cycle time (ABA)	90 s	90 s	90 s	90 s
Standard Accessories				
Data interfaces	RS-232C, USB, Ethernet, SD card (optional RS-232C, PS2, *Bluetooth*®)			
Draft shield	•	•	•	•
Additional application programs	Weighing, mass unit conversion, individual identifiers, density determination, statistics			
Port for below-balance weighing hook	•	•	•	•
Climate sensors	Integrated into draft shield			

Cubis® MCM up to 1 kg




Optional Accessories

Calibration weight	5 g | E2 YCW352-00	20 g | E2 YCW422-00	50 g | E2 YCW452-00	50 g | E2 YCW452-00
2nd draft shield	YDS20C	YDS24C	YDS24C	YDS24C
Balance table	YWT03	YWT03	YWT03	YWT03

Dimensions

Weighing pan size	16 mm dia.	30 mm dia.	30 mm dia.	50 mm dia.
Maximum object size (D × H)	16 × 70 mm	30 × 120 mm	30 × 120 mm	50 × 120 mm
Weigh cell (W × D × H)	122 × 343 × 141 mm	222 × 431 × 301 mm	222 × 431 × 301 mm	222 × 431 × 301 mm
Electronic unit (W × D × H)	239 × 320 × 56 mm	239 × 320 × 56 mm	239 × 320 × 56 mm	239 × 320 × 56 mm

Repeatability is the standard deviation "s"; it is calculated from 5 ABA cycles under the following conditions:

[1] Optimal conditions: Automatic measurement without operator influence measured in a laboratory under E1 conditions, on a decoupled weighing stone, no drafts from above

[2] Standard conditions E: Measurement performed manually under a laboratory under E1 conditions, on a decoupled weighing stone, no drafts from above

[3] Standard conditions F: Measurement performed manually under a laboratory under at least F1 conditions, on a non-decoupled weighing stone, air conditioning and minimal drafts from above

Cubis® MCM up to 1 kg			
Order number, with uncalibrated climate sensors	**MCM605**	**MCM1005**	**MCM1004**
Order number, with calibrated climate sensors and DAkkS certificate	**MCM605-DAkkS**	**MCM1005-DAkkS**	**MCM1004-DAkkS**
Design	3	3	3
Maximum capacity	610 g	1,110 g	1,110 g
Readability	0.01 mg	0.01 mg	0.1 mg
Range of use	0 to 610 g	0 to 1,110 g	0 to 1,110 g
Repeatability "s"			
– under optimal conditions [1)]	10 µg	15 µg	0.05 mg
– under standard conditions E [2)]	20 µg	20 µg	0.07 mg
– at 1/3 load [2)]	15 µg		
– at 1/10 load [2)]	10 µg	15 µg	0.05 mg
– under standard conditions F [3)]	30 µg	50 µg	0.2 mg
Electronic weighing | taring range	610 g	610 g	610 g
Substitution weights		500 g	500 g
Linearity	100 µg	100 µg | 600 g	0.1 mg | 600 g
Eccentric (off-center) load deviation	10 µg / mm	15 µg / mm	30 µg / mm
Stabilization time	5 s	5 s	3 s
Cycle time (ABA)	90 s	90 s	90 s
Standard Accessories			
Data interfaces	RS-232C, USB, Ethernet, SD card (optional RS-232C, PS2, *Bluetooth*®)		
Draft shield	•	•	•
Additional application programs	Weighing, mass unit conversion, individual identifiers, density determination, statistics		
Port for below-balance weighing hook	•	•	•
Climate sensors	Integrated into draft shield		

Cubis® MCM up to 1 kg			
Optional Accessories			
Calibration weight	500 g | E2 YCW552-00	500 g | E2 YCW552-00	500 g | E2 YCW552-00
2nd draft shield	YDS24C	YDS24C	YDS24C
Balance table	YWT03	YWT03	YWT03
Dimensions			
Weighing pan size	90 mm dia.	90 mm dia.	90 mm dia.
Maximum object size (D × H)	135 × 140 mm	135 × 140 mm	135 × 140 mm
Weigh cell (W × D × H)	222 × 431 × 301 mm	222 × 431 × 301 mm	222 × 431 × 301 mm
Electronic unit (W × D × H)	239 × 320 × 56 mm	239 × 320 × 56 mm	239 × 320 × 56 mm

Repeatability is the standard deviation "s"; it is calculated from 5 ABA cycles under the following conditions:

[1] Optimal conditions: automatic measurement without operator influence measured in a laboratory under E1 conditions, on a decoupled weighing stone, no drafts from above

[2] Standard conditions E: measurement performed manually in a laboratory under E1-conditions, on a decoupled weighing stone, no drafts from above

[3] Standard conditions F: measurement performed manually in a laboratory under at least F1 conditions, on a non-decoupled weighing stone, air conditioning and minimal drafts from above

Cubis® MCM 2 kg to 10 kg				
Order number, with uncalibrated climate sensors	**MCM2004**	**MCM5004**	**MCM5003**	**MCM10K3**
Order number, with calibrated climate sensors and DAkkS certificate	**MCM2004-DAkkS**	**MCM5004-DAkkS**	**MCM5003-DAkkS**	**MCM10K3-DAkkS**
Design	4	4	4	5
Maximum capacity	2,500 g	5,100 g	5,100 g	11 kg
Readability	0.1 mg	0.2 mg	1 mg	1 mg
Range of use	0 to 2,500 g	0 to 5,100 g	0 to 5,100 g	0 to 11 kg
Repeatability "s"				
– under optimal conditions [1]	0.05 mg	0.3 mg	0.5 mg	0.8 mg
– under standard conditions E [2]	0.1 mg	0.5 mg	0.8 mg	1 mg
– at 1/3 load [2]				
– at 1/10 load [2]	0.07 mg	0.3 mg	0.5 mg	0.8 mg
– under standard conditions F [3]	0.3 mg	0.8 mg	1.5 mg	3 mg
Electronic weighing | tare range	2,500 g	5,100 g	5,100 g	11 kg
Substitution weights		50 g		
Linearity	1 mg	2 mg	3 mg	6 mg
Eccentric (off-center) load deviation	30 µg / mm	151 µg / mm	300 µg / mm	0.5 mg / mm
Stabilization time	3 s	3 s	3 s	3 s
Cycle time (ABA)	90 s	90 s	90 s	90 s
Standard Accessories				
Data interfaces	RS-232C, USB, Ethernet, SD card (optional RS-232C, PS2, *Bluetooth*®)			
Draft shield	•	•	•	
Additional application programs	Weighing, mass unit conversion, individual identifiers, density determination, statistics			
Port for below-balance weighing hook	•	•	•	•
Climate sensor	Integrated into draft shield			Can be connected externally

Cubis® MCM 2 kg to 10 kg




Optional Accessories				
Calibration weight	2 kg | E2 YCW622-00	5 kg | E2 YCW652-00	5 kg | E2 YCW652-00	10 kg | E2 YCW712-00
2nd draft shield	YDS24C	YDS24C	YDS24C	YDS24C
Balance table	YWT03	YWT03	YWT03	YWT03
Lifting device for 10 kg				YAW51
Lifting device for 20 kg				

Dimensions				
Weighing pan size (W × D)	136 × 136 mm	136 × 136 mm	136 × 136 mm	200 × 200 mm
maximum object size (D × H)	130 × 200 mm	130 × 200 mm	130 × 200 mm	
Weigh cell (W × D × H)	240 × 276 × 373 mm	240 × 276 × 373 mm	240 × 276 × 373 mm	240 × 276 × 102 mm
Electronic unit (W × D × H)	239 × 320 × 56 mm	239 × 320 × 56 mm	239 × 320 × 56 mm	239 × 320 × 56 mm

Repeatability is the standard deviation "s"; it is calculated from 5 ABA cycles under the following conditions:

[1] Optimal conditions: automatic measurement without operator influence measured in a laboratory under E1 conditions, on a decoupled weighing stone, no drafts from above.

[2] Standard conditions E: measurement performed manually in a laboratory under E1 conditions, on a decoupled weighing stone, no drafts from above

[3] Standard conditions F: measurement performed manually in a laboratory under at least F1 conditions, on a non-decoupled weighing stone, air conditioning and minimal drafts from above

Cubis® MCM 2 kg to 10 kg			
Order number, with uncalibrated climate sensors	**MCM40K3**	**MCM60K3**	**MCM60K2**
Order number, with calibrated climate sensors with DAkkS certificate	**MCM40K3-DAkkS**	**MCM60K3-DAkkS**	**MCM60K2-DAkkS**
Design	6	6	6
Maximum capacity	41 kg	64 kg	64 kg
Readability	1 mg	2 mg	10 mg
Range of use	0 kg to 41 kg	0 kg to 64 kg	0 kg to 64 kg
Repeatability s			
– under optimal conditions [1]	2 mg	4 mg	6 mg
– under standard conditions E [2]	3 mg	6 mg	10 mg
– at 1/3 load [2]			
– at 1/10 load [2]	2 mg	4 mg	
– under standard conditions F [3]	6 mg	10 mg	25 mg
Electronic weighing | tare range	41 kg	64 kg	64 kg
Linearity	20 mg	40 mg	50 mg
Eccentric (off-center) load deviation	3.5 mg / mm	3.5 mg / mm	3.5 mg / mm
Stabilization time	5 s	5 s	5 s
Cycle time (ABA)	120 s	120 s	120 s
Standard Accessories			
Data interfaces	RS-232C, USB, Ethernet, SD card (optional RS-232C, PS2, *Bluetooth*®)		
Additional application programs	Weighing, mass unit conversion, individual identifiers, density determination, statistics		
Port for below-balance weighing hook	with opt. accessories 69EA0040	with opt. accessories 69EA0040	with opt. accessories 69EA0040
Climate sensor	Can be connected externally		

Cubis® MCM 40 kg to 60 kg



Optional Accessories			
Calibration weight	20 kg | E2 YCW722-00	50 kg | E2 YCW752-00	50 kg | E2 YCW752-00
2nd draft shield	YDS05C | YDS03C	YDS05C | YDS03C	YDS05C | YDS03C
Lifting device for 10 kg	YAW51	YAW51	YAW51
Lifting device for 20 kg	YAW52	YAW52	YAW52
Lifting device for 50 kg		YAW53	YAW53
Crane with chain hoist		YLD01C	YLD01C
Gripper for weights with handle		YLD02C	YLD02C
Floor-mounted column, stainless steel			

Dimensions			
Weighing pan size (W × D)	400 × 300 mm	400 × 300 mm	400 × 300 mm
Weigh cell (W × D × H)	400 × 326 × 126 mm	400 × 326 × 126 mm	400 × 326 × 126 mm
Electronic unit (W × D × H)	239 × 320 × 56 mm	239 × 320 × 56 mm	239 × 320 × 56 mm

Repeatability is the standard deviation "s"; it is calculated from 5 ABA cycles under the following conditions:

[1] Optimal conditions: automatic measurement without operator influence measured in a laboratory under E1 conditions, on a decoupled weighing stone, no drafts from above.

[2] Standard conditions E: measurement performed manually in a laboratory under E1 conditions, on a decoupled weighing stone, no drafts from above

[3] Standard conditions F: measurement performed manually in a laboratory under at least F1 conditions, on a non-decoupled weighing stone, air conditioning and minimal drafts from above

Accessories for Cubis® MCM Mass Comparators	
Replacement climate module, uncalibrated, for all MCM models	YCM20MC
Calibration of a climate module YCM20MC with DAkkS calibration certificate	YCM20DAkkS
Replacement climate module with DAkkS calibration certificate for all MCM models	YCM20MC-DAkkS
Hook for below-balance weighing, for models MCM40K3, MCM60K3, MCM60K2, MCM40K3-DAkkS, MCM60K3-DAWKS and MCM60K2-DAkkS	69EA0040
Tower for climate module, for mounting YCM20MC; can be ported to the following models: MCM10K3, MCM40K3, MCM60K3, MCM60K2, MCM10K3-DAkkS, MCM40K3-DAkkS, MCM60K3-DAkkS and MCM60K2-DAkkS, connecting cable included	YCM20MC Tower


sartorius
Practum

Weights and Weight Sets

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Regular inspection and testing of weighing instruments are essential to ensure reliable weighing results. Sartorius offers highly accurate metrological weights and weight sets with nominal mass values from 1 mg to 1,000 kg, special and test weights, as well as the right accessories required for correct handling, storage and cleaning of weights.

For unique identification and classification, all Sartorius weights – except for wire and leaf weights – are laser-engraved with an individual three-character alphanumeric marking in accordance with the OIML R111-1 International Recommendation. Therefore, Sartorius weights are 100% traceable throughout their entire life cycles. The weights made of cast iron have a unique marking stamped on the cover plate.

Reference Line Weights

Sartorius Reference Line weights are the first choice for primary mass standards. They are supplied with a first-class finish featuring a high gloss polish and corrosion-resistant surfaces. The quality of these weights exceeds the requirements of the OIML R111-1 International recommendation. Sartorius Reference Line weights have only positive deviations from the nominal value*.

Description
OIML class E1 and E2 weights from 1 mg to 500 mg are available as wire weights; those with a nominal mass of 1 g and higher are designed as knob weights. They are manufactured from special stainless steel that has a density of 8,000 kg/m^3 and comply with OIML R111-1 tolerances. The weights are non-magnetizable and are delivered in a high-quality wooden case**.

Sartorius Reference Line milligram weights of OIML class F1 are designed as wire weights. These weights are made of stainless steel that has a density of 7,950 kg/m^3. The tolerances comply with OIML R111-1.

OIML class F1 and F2 weights with nominal values of 1 g and higher are available as knob weights and made of special stainless steel that has a density of 7,950 kg/m^3. Their tolerances likewise comply with OIML R111-1. The weights are non-magnetizable and, up to 20 g, come in a plastic case. Starting at 50 g, they are supplied in a high-quality wooden case**.

* Valid at the time of delivery and without taking into account the measurement uncertainty
** Unless otherwise specified

Ordering Information

OIML Class E1 | E2

	Without DAkkS calibration certificate		With DAkkS calibration certificate	
Nominal Value	OIML Class E1	OIML Class E2	OIML Class E1	OIML Class E2
1 mg	YCW0111-00	YCW0121-00	YCW0111-02	YCW0121-02
2 mg	YCW0211-00	YCW0221-00	YCW0211-02	YCW0221-02
5 mg	YCW0511-00	YCW0521-00	YCW0511-02	YCW0521-02
10 mg	YCW1111-00	YCW1221-00	YCW1111-02	YCW1121-02
20 mg	YCW1211-00	YCW1121-00	YCW1211-02	YCW1221-02
50 mg	YCW1511-00	YCW1521-00	YCW1511-02	YCW1521-02
100 mg	YCW2111-00	YCW2121-00	YCW2111-02	YCW2121-02
200 mg	YCW2211-00	YCW2221-00	YCW2211-02	YCW2221-02
500 mg	YCW2511-00	YCW2521-00	YCW2511-02	YCW2521-02
1 g	YCW311-00	YCW312-00	YCW311-02	YCW312-02
2 g	YCW321-00	YCW322-00	YCW321-02	YCW322-02
5 g	YCW351-00	YCW352-00	YCW351-02	YCW352-02
10 g	YCW411-00	YCW412-00	YCW411-02	YCW412-02
20 g	YCW421-00	YCW422-00	YCW421-02	YCW422-02
50 g	YCW451-00	YCW452-00	YCW451-02	YCW452-02
100 g	YCW511-00	YCW512-00	YCW511-02	YCW512-02
200 g	YCW521-00	YCW522-00	YCW521-02	YCW522-02
500 g	YCW551-00	YCW552-00	YCW551-02	YCW552-02
1 kg	YCW611-00	YCW612-00	YCW611-02	YCW612-02
2 kg	YCW621-00	YCW622-00	YCW621-02	YCW622-02
5 kg	YCW651-00	YCW652-00	YCW651-02	YCW652-02
10 kg	YCW711-00	YCW712-00	YCW711-02	YCW712-02
20 kg	YCW721-00	YCW722-00	YCW721-02	YCW722-02
50 kg	YCW751-00	YCW752-00	YCW751-02	YCW752-02

OIML Class F1 | F2

	Without DAkkS calibration certificate		With DAkkS calibration certificate	
Nominal Value	OIML Class F1	OIML Class F2	OIML Class F1	OIML Class F2
1 mg	YCW0131-00	–	YCW0131-02	–
2 mg	YCW0231-00	–	YCW0231-02	–
5 mg	YCW0531-00	–	YCW0531-02	–
10 mg	YCW1131-00	–	YCW1131-02	–
20 mg	YCW1231-00	–	YCW1231-02	–
50 mg	YCW1531-00	–	YCW1531-02	–
100 mg	YCW2131-00	–	YCW2131-02	–
200 mg	YCW2231-00	–	YCW2231-02	–
500 mg	YCW2531-00	–	YCW2531-02	–
1 g	YCW313-00	YCW314-00	YCW313-02	YCW314-02
2 g	YCW323-00	YCW324-00	YCW323-02	YCW324-02
5 g	YCW353-00	YCW354-00	YCW353-02	YCW354-02
10 g	YCW413-00	YCW414-00	YCW413-02	YCW414-02
20 g	YCW423-00	YCW424-00	YCW423-02	YCW424-02
50 g	YCW453-00	YCW454-00	YCW453-02	YCW454-02
100 g	YCW513-00	YCW514-00	YCW513-02	YCW514-02
200 g	YCW523-00	YCW524-00	YCW523-02	YCW524-02
500 g	YCW553-00	YCW554-00	YCW553-02	YCW554-02
1 kg	YCW613-00	YCW614-00	YCW613-02	YCW614-02
2 kg	YCW623-00	YCW624-00	YCW623-02	YCW624-02
5 kg	YCW653-00	YCW654-00	YCW653-02	YCW654-02
10 kg	YCW713-00	YCW714-00	YCW713-02	YCW714-02
20 kg	YCW723-00	YCW724-00	YCW723-02	YCW724-02
50 kg	YCW753-00	YCW754-00	YCW753-02	YCW754-02

Reference Line Weight Sets

The weights of the Sartorius Reference Line sets* have the same features and properties as the individual weights of this series, along with the corresponding maximum permissible errors. These weight sets are supplied with gloves, tweezers and a brush in a high-quality wooden case.

Description
OIML class E1 and E2 weights in the Reference Line sets are made of special stainless steel that has a density of 8,000 kg/m^3, and their tolerances comply with OIML R111-1. Reference Line sets with nominal mass values up to 500 mg feature a wire weight shape.

OIML class F1 and F2 weights of the Reference Line sets are made of special stainless steel that has a density of 7,950 kg/m^3. Their tolerances comply with OIML R111-1.

OIML class F1 Reference Line weight sets contain wire weights with nominal values of up to 500 mg; those of OIML class F2 have leaf weights instead and nominal values of up to 500 mg.

Reference Line sets with leaf weights from 1 mg to 5 mg are made of aluminum that has a density of 2,650 kg/m^3; those with weights from 10 mg to 500 mg are made of nickel silver with a density of 8,600 kg/m^3. Their tolerances comply with OIML R111-1.

Ordering Information

OIML Class E1 | E2

	Without DAkkS calibration certificate		With DAkkS calibration certificate	
Nominal Value	OIML Class E1	OIML Class E2	OIML Class E1	OIML Class E2
1 mg to 5 g	YCS011-351-00	YCS011-352-00	YCS011-351-02	YCS011-352-02
1 mg to 100 g	YCS011-511-00	YCS011-512-00	YCS011-511-02	YCS011-512-02
1 mg to 200 g	YCS011-521-00	YCS011-522-00	YCS011-521-02	YCS011-522-02
1 mg to 1 kg	YCS011-611-00	YCS011-612-00	YCS011-611-02	YCS011-612-02
1 mg to 5 kg	YCS011-651-00	YCS011-652-00	YCS011-651-02	YCS011-652-02
1 g to 1 kg	YCS31-611-00	YCS31-612-00	YCS31-611-02	YCS31-612-02
1 g to 5 kg	YCS31-651-00	YCS31-652-00	YCS31-651-02	YCS31-652-02
1 g to 10 kg	YCS31-711-00	YCS31-712-00	YCS31-711-02	YCS31-712-02

OIML Class F1 | F2

	Without DAkkS calibration certificate		With DAkkS calibration certificate	
Nominal Value	OIML Class F1	OIML Class F2	OIML Class F1	OIML Class F2
1 mg to 100 g	YCS01-513-00	YCS01-514-00	YCS01-513-02	YCS01-514-02
1 mg to 200 g	YCS01-523-00	YCS01-524-00	YCS01-523-02	YCS01-524-02
1 mg to 1 kg	YCS01-613-00	YCS01-614-00	YCS01-613-02	YCS01-614-02
1 mg to 5 kg	YCS01-653-00	YCS01-654-00	YCS01-653-02	YCS01-654-02
1 g to 1 kg	YCS31-613-00	YCS31-614-00	YCS31-613-02	YCS31-614-02
1 g to 5 kg	YCS31-653-00	YCS31-654-00	YCS31-653-02	YCS31-654-02
1 g to 10 kg	YCS31-713-00	YCS31-714-00	YCS31-713-02	YCS31-714-02

* For a list of individual weight combinations in each set, see page 78.

Proof Line Weights

Sartorius Proof Line weights are high-quality working standards for everyday use. These weights are made of high quality material with polished or precision-lathed surfaces and comply in all respects with the requirements on shape, material and markings specified by the OIML R111-1 International Recommendation.

Description
OIML class E2 milligram weights are designed as leaf weights. With a nominal mass ranging from 1 mg to 5 mg, these weights are made of aluminum that has a density of 2,650 kg/m^3; those with nominal values ranging from 10 mg to 500 mg are manufactured from nickel silver with a density of 8,600 kg/m^3. Their tolerances comply with OIML R111-1.

Weights with nominal values of 1 g and higher are available as knob weights and are made of a special stainless steel that has a density of 7,950 kg/m^3.
Their tolerances comply with OIML R111-1.

Proof Line weights are non-magnetizable and supplied in a high-quality plastic case*. These plastic cases are suitable for use in cleanrooms.

* Unless otherwise specified

Sartorius Proof Line knob weights of OIML classes F1 and F2 with nominal values of 1 g and higher are made of stainless steel that has a density of 7,950 kg/m^3.
The tolerances of these knob weights comply with OIML R111-1, and they are supplied in high-quality plastic screw-top boxes. Knob weights from 10 g and up feature an adjustment chamber.

Proof Line OIML class F1 leaf weights ranging from 1 mg to 5 mg are made of aluminum that has a density of 2,650 kg/m^3; those with nominal values from 10 mg to 500 mg are manufactured from nickel silver that has a density of 8,600 kg/m^3. Their tolerances comply with OIML R111-1.

Milligram weights of the Proof Line range are delivered in a high-quality plastic case. These plastic cases are suitable for use in cleanrooms.

Ordering Information

OIML Class E2

	Without DAkkS calibration certificate	**With DAkkS calibration certificate**
Nominal Value	OIML Class E2	
1 mg	YCW0121-AC-00	YCW0121-AC-02
2 mg	YCW0221-AC-00	YCW0221-AC-02
5 mg	YCW0521-AC-00	YCW0521-AC-02
10 mg	YCW1121-AC-00	YCW1121-AC-02
20 mg	YCW1221-AC-00	YCW1221-AC-02
50 mg	YCW1521-AC-00	YCW1521-AC-02
100 mg	YCW2121-AC-00	YCW2221-AC-02
200 mg	YCW2221-AC-00	YCW2121-AC-02
500 mg	YCW2521-AC-00	YCW2521-AC-02

	Without DAkkS calibration certificate	With DAkkS calibration certificate
Nominal Value	OIML Class E2	
1 g	YCW312-AC-00	YCW312-AC-02
2 g	YCW322-AC-00	YCW322-AC-02
5 g	YCW352-AC-00	YCW352-AC-02
10 g	YCW412-AC-00	YCW412-AC-02
20 g	YCW422-AC-00	YCW422-AC-02
50 g	YCW452-AC-00	YCW452-AC-02
100 g	YCW512-AC-00	YCW512-AC-02
200 g	YCW522-AC-00	YCW522-AC-02
500 g	YCW552-AC-00	YCW552-AC-02
1 kg	YCW612-AC-00	YCW612-AC-02
2 kg	YCW622-AC-00	YCW622-AC-02
5 kg	YCW652-AC-00	YCW652-AC-02
10 kg	YCW712-AC-00	YCW712-AC-02

OIML Class F1 | F2

	Without DAkkS calibration certificate		With DAkkS calibration certificate	
Nominal Value	OIML Class F1	OIML Class F2	OIML Class F1	OIML Class F2
1 mg	YCW013-00	–	YCW013-02	–
2 mg	YCW023-00	–	YCW023-02	–
5 mg	YCW053-00	–	YCW053-02	–
10 mg	YCW113-00	–	YCW113-02	–
20 mg	YCW123-00	–	YCW123-02	–
50 mg	YCW153-00	–	YCW153-02	–
100 mg	YCW213-00	–	YCW213-02	–
200 mg	YCW223-00	–	YCW223-02	–
500 mg	YCW253-00	–	YCW253-02	–
1 g	YCW313-AC-00	YCW314-AC-00	YCW313-AC-02	YCW314-AC-02
2 g	YCW323-AC-00	YCW324-AC-00	YCW323-AC-02	YCW324-AC-02
5 g	YCW353-AC-00	YCW354-AC-00	YCW353-AC-02	YCW354-AC-02
10 g	YCW413-AC-00	YCW414-AC-00	YCW413-AC-02	YCW414-AC-02
20 g	YCW423-AC-00	YCW424-AC-00	YCW423-AC-02	YCW424-AC-02
50 g	YCW453-AC-00	YCW454-AC-00	YCW453-AC-02	YCW454-AC-02
100 g	YCW513-AC-00	YCW514-AC-00	YCW513-AC-02	YCW514-AC-02
200 g	YCW523-AC-00	YCW524-AC-00	YCW523-AC-02	YCW524-AC-02
500 g	YCW553-AC-00	YCW554-AC-00	YCW553-AC-02	YCW554-AC-02
1 kg	YCW613-AC-00	YCW614-AC-00	YCW613-AC-02	YCW614-AC-02
2 kg	YCW623-AC-00	YCW624-AC-00	YCW623-AC-02	YCW624-AC-02
5 kg	YCW653-AC-00	YCW654-AC-00	YCW653-AC-02	YCW654-AC-02
10 kg	YCW713-AC-00	YCW714-AC-00	YCW713-AC-02	YCW714-AC-02

Description
Sartorius Proof Line knob weights of OIML class M1 are made of stainless steel, precision-lathed and have a density of 7,850 kg/m^3. Their tolerances comply with OIML R111-1.

OIML class M2 knob weights of the Sartorius Proof Line series are manufactured from brass, precision-lathed and have a density of 8,400 kg/m^3. Their tolerances comply with OIML R111-1.

All Proof Line weights are supplied in high-quality plastic screw-top boxes that are suitable for use in cleanrooms. Knob weights from 10 g and up feature an adjustment chamber.

OIML M1 and M2 block weights and ton weights of the Proof Line series are made of cast iron that is black lacquered and has a density of 7,200 kg/m^3. Their tolerances comply with OIML R111-1.

Proof Line OIML class M1 block weights are also available in a choice of stainless steel that has a density of 7,850 kg/m^3. Their tolerances comply with OIML R111-1.

Ordering Information

OIML Class M1 | M2

	Without DAkkS calibration certificate		**With DAkkS calibration certificate**	
Nominal Value	OIML Class M1	OIML Class M2	OIML Class M1	OIML Class M2
1 g	YCW315-AC-00	YCW316-AC-00	YCW315-AC-02	YCW316-AC-02
2 g	YCW325-AC-00	YCW326-AC-00	YCW325-AC-02	YCW326-AC-02
5 g	YCW355-AC-00	YCW356-AC-00	YCW355-AC-02	YCW356-AC-02
10 g	YCW415-AC-00	YCW416-AC-00	YCW415-AC-02	YCW416-AC-02
20 g	YCW425-AC-00	YCW426-AC-00	YCW425-AC-02	YCW426-AC-02
50 g	YCW455-AC-00	YCW456-AC-00	YCW455-AC-02	YCW456-AC-02
100 g	YCW515-AC-00	YCW516-AC-00	YCW515-AC-02	YCW516-AC-02
200 g	YCW525-AC-00	YCW526-AC-00	YCW525-AC-02	YCW526-AC-02
500 g	YCW555-AC-00	YCW556-AC-00	YCW555-AC-02	YCW556-AC-02
1 kg	YCW615-AC-00	YCW616-AC-00	YCW615-AC-02	YCW616-AC-02
2 kg	YCW625-AC-00	YCW626-AC-00	YCW625-AC-02	YCW626-AC-02
5 kg	YCW655-AC-00	YCW656-AC-00	YCW655-AC-02	YCW656-AC-02
10 kg	YCW715-AC-00	YCW716-AC-00	YCW715-AC-02	YCW716-AC-02

OIML Class M1 | M2

	Without DAkkS calibration certificate		With DAkkS calibration certificate	
Nominal Value	OIML Class M1	OIML Class M2	OIML Class M1	OIML Class M2
Block weights, cast iron				
5 kg	YCW6559-AC-00	YCW6569-AC-00	YCW6559-AC-02	YCW6569-AC-02
10 kg	YCW7159-AC-00	YCW7169-AC-00	YCW7159-AC-02	YCW7169-AC-02
20 kg	YCW7259-AC-00	YCW7269-AC-00	YCW7259-AC-02	YCW7269-AC-02
50 kg	YCW7559-AC-00	YCW7569-AC-00	YCW7559-AC-02	YCW7569-AC-02
Block weights, stainless steel				
5 kg	YCW6554-AC-00	–	YCW6554-AC-02	–
10 kg	YCW7154-AC-00	–	YCW7154-AC-02	–
20 kg	YCW7254-AC-00	–	YCW7254-AC-02	–
50 kg	YCW7554-AC-00	–	YCW7554-AC-02	–
Block weights, cast iron				
100 kg	YCW8159-AC-00	–	YCW8159-AC-02	–
200 kg	YCW8259-AC-00	–	YCW8259-AC-02	–
500 kg	YCW8559-AC-00	–	YCW8559-AC-02	–
1,000 kg	YCW9159-AC-00	–	YCW9159-AC-02	–
Ton weights, cast iron				
100 kg	YCW8157-AC-00	–	YCW8157-AC-02	–
200 kg	YCW8257-AC-00	–	YCW8257-AC-02	–
500 kg	YCW8557-AC-00	–	YCW8557-AC-02	–
1,000 kg	YCW9157-AC-00	–	YCW9157-AC-02	–

Proof Line Weight Sets

The weights of the Sartorius Proof Line weight sets* have the same features and properties as the individual weights of this series, along with the corresponding maximum permissible errors.

Description
These weight sets are supplied with gloves, tweezers and a brush in a high-quality plastic case.

All milligram weights are provided as leaf weights. With nominal mass values ranging from 1 mg to 5 mg, they are made of aluminum that has a density of 2,650 kg/m^3; weights with nominal values of 10 mg to 500 mg are made of nickel silver that has a density of 8,600 kg/m^3. Their tolerances comply with OIML R111-1.

* For a list of individual weight combinations in each set, see page 78.

Ordering Information

OIML Class E2 | F1 | F2 | M1

Without DAkkS calibration certificate

Nominal Value	OIML Class E2	OIML Class F1	OIML Class F2	OIML Class M1
1 mg to 500 mg	YCS011-252-AC-00	YCS01-253-AC-00	YCS01-254-AC-00	YCS01-255-AC-00
1 mg to 100 g	–	–	–	YCS01-515-AC-00
1 mg to 200 g	–	–	–	YCS01-525-AC-00
1 mg to 1 kg	–	–	–	YCS01-615-AC-00
1 mg to 5 kg	–	–	–	YCS01-655-AC-00
1 g to 100 g	YCS31-512-AC-00	YCS31-513-AC-00	YCS31-514-AC-00	–
1 g to 200 g	YCS31-522-AC-00	–	–	–
1 g to 1 kg	YCS31-612-AC-00	YCS31-613-AC-00	YCS31-614-AC-00	YCS31-615-AC-00
1 g to 5 kg	YCS31-652-AC-00	YCS31-653-AC-00	YCS31-654-AC-00	YCS31-655-AC-00
1 g to 10 kg	–	–	–	YCS31-715-AC-00

OIML Class E2 | F1 | F2 | M1

With DAkkS calibration certificate

Nominal Value	OIML Class E2	OIML Class F1	OIML Class F2	OIML Class M1
1 mg to 500 mg	YCS011-252-AC-02	YCS01-253-AC-02	YCS01-254-AC-02	YCS01-255-AC-02
1 mg to 100 g	–	–	–	YCS01-515-AC-02
1 mg to 200 g	–	–	–	YCS01-525-AC-02
1 mg to 1 kg	–	–	–	YCS01-615-AC-02
1 mg to 5 kg	–	–	–	YCS01-655-AC-02
1 g to 100 g	YCS31-512-AC-02	YCS31-513-AC-02	YCS31-514-AC-02	–
1 g to 200 g	YCS31-522-AC-02	–	–	–
1 g to 1 kg	YCS31-612-AC-02	YCS31-613-AC-02	YCS31-614-AC-02	YCS31-615-AC-02
1 g to 5 kg	YCS31-652-AC-02	YCS31-653-AC-02	YCS31-654-AC-02	YCS31-655-AC-02
1 g to 10 kg	–	–	–	YCS31-715-AC-02

Special Weight Sets and Service Weight Sets

Description
All weights of the Sartorius service weight sets* have the same features and properties as the individual weights of the Sartorius Reference Line series, along with the corresponding maximum permissible errors. These service weight sets are supplied with gloves, tweezers and a brush in a service case.

The Sartorius density reference set* consists of stackable disc weights. All weights are made of special stainless steel that has a density of 8,000 kg/m^3. Their tolerances comply with OIML R111-1. Density reference weights are non-magnetizable and are supplied in a high-quality wooden case with a calibration certificate, which includes density determination data.

* For a list of individual weight combinations in each set, see page 78.

Ordering Information

Service Weight Sets

		Without DAkkS calibration certificate	With DAkkS calibration certificate
OIML Class	Nominal Value		
E2	1 mg to 5 kg	YSS0121-353-00	YSS0121-353-02
E2	100 g to 5 kg	YSS5128-6528-00	YSS5128-6528-02
F1	1 g to 5 kg	YSS3138-6538-00	YSS3138-6538-02

Density Reference Set		Order No.
OIML Class	Nominal Value	
E1	1 g to 1 kg	YCS31-612-09

Cylindrical Weights

Description
Sartorius cylindrical weights of OIML classes E2, F1 and F2 are made of special stainless steel that has a density of 7,950 kg/m³. Their tolerances comply with OIML R111-1. These weights are non-magnetizable and have a polished surface. They are supplied in high-quality plastic cases that are suitable for use in clean-rooms.

Ordering Information

OIML Class E2 | F1 | F2

	Without DAkkS calibration certificate		
Nominal Value	OIML Class E2	OIML Class F1	OIML Class F2
1 g	YCW3128-00	YCW3138-00	–
2 g	YCW3228-00	YCW3238-00	–
5 g	YCW3528-00	YCW3538-00	–
10 g	YCW4128-00	YCW4138-00	–
20 g	YCW4228-00	YCW4238-00	–
50 g	YCW4528-00	YCW4538-00	–
100 g	YCW5128-00	YCW5138-00	YCW5148-00
200 g	YCW5228-00	YCW5238-00	YCW5248-00
500 g	YCW5528-00	YCW5538-00	YCW5548-00
1 kg	YCW6128-00	YCW6138-00	YCW6148-00
2 kg	YCW6228-00	YCW6238-00	YCW6248-00
5 kg	YCW6528-00	YCW6538-00	YCW6548-00
10 kg	–	YCW7138-00	YCW7148-00

OIML Class E2 | F1 | F2

	With DAkkS calibration certificate		
Nominal Value	OIML Class E2	OIML Class F1	OIML Class F2
1 g	YCW3128-02	YCW3138-02	–
2 g	YCW3228-02	YCW3238-02	–
5 g	YCW3528-02	YCW3538-02	–
10 g	YCW4128-02	YCW4138-02	–
20 g	YCW4228-02	YCW4238-02	–
50 g	YCW4528-02	YCW4538-02	–
100 g	YCW5128-02	YCW5138-02	YCW5148-02
200 g	YCW5228-02	YCW5238-02	YCW5248-02
500 g	YCW5528-02	YCW5538-02	YCW5548-02
1 kg	YCW6128-02	YCW6138-02	YCW6148-02
2 kg	YCW6228-02	YCW6238-02	YCW6248-02
5 kg	YCW6528-02	YCW6538-02	YCW6548-02
10 kg	–	YCW7138-02	YCW7148-02

Accessories for Cleaning and Handling of Weights

According to the OIML R111-1 International Recommendation, special care must be taken in handling weights. Sartorius supplies a wide range of work-saving accessories to enable you to meet such special requirements.

Description
To ensure correct handling and cleaning of weights, Sartorius offers brushes, gloves and handling tools in various designs and sizes.

For proper storage of weights, Sartorius provides glass bell jars and plastic screw-top boxes in different sizes. Wooden and plastic cases are available in a choice of designs on request.

Ordering Information

Accessories		Order No.
Brush	Small, 100 mm	YAW11
	Medium, 115 mm	YAW12
	Large, 150 mm	YAW13
	Extra large, 250 mm	YAW14
Gloves	Cotton	YAW21
	Leather	YAW22
Forceps with silicone-coated tips	115 mm for 1 mg to 5 g	YAW31
	160 mm for 1 g to 200 g	YAW32
	230 mm for 1 g to 1 kg	YAW33
Tweezers with carbon tips	105 mm for 1 mg to 50 g	YAW35
	115 mm for 1 mg to 5 g	YAW36
	160 mm for 1 g to 200 g	YAW37
	230 mm for 1 g to 1 kg	YAW38
Weight forks	For 500 g	YAW41
	For 1 kg	YAW42
	For 2 kg	YAW43
Weight fork, Fo(u)rk brand Fork, complete incl. adapters	For 500 g to 5 kg	YAW70
Fork	For 1 kg and 5 kg	YAW71
Adapter	For 500 g	YAW72
	For 2 kg	YAW73

Accessories for Storage of Weights

Ordering Information

Accessories		Order No.
Handles for lifting weights	For 5 kg	YAW50
	For 10 kg	YAW51
	For 20 kg	YAW52
	For 50 kg	YAW53
Glass bell jar with support plate	For 1 mg to 5 g	YAW00
	For 1 mg to 50 g (100 g or 200 g)	YAW01
	For 100 g to 1 kg (2 kg)	YAW02
	For 2 kg to 5 kg	YAW03
	For 10 kg	YAW04
	For 20 kg	YAW05
	For 50 kg	YAW06
Plastic screw-top boxes with closed-pore foam inlay are suitable for use in cleanrooms	For 1 mg to 100 mg weights	YAW01GL
	For 200 mg to 500 mg weights	YAW05GL
	For 1 g to 20 g weights*	YAW20GL
	For 50 g weights*	YAW50GL
	For 100 g weights*	YAW100GL
	For 200 g weights*	YAW200GL
	For 500 g weights*	YAW500GL
	For 1 kg weights*	YAW1000GL
	For 2 kg weights*	YAW2000GL
	For 5 kg weights*	YAW5000GL
	For 10 kg weights*	YAW10000GL

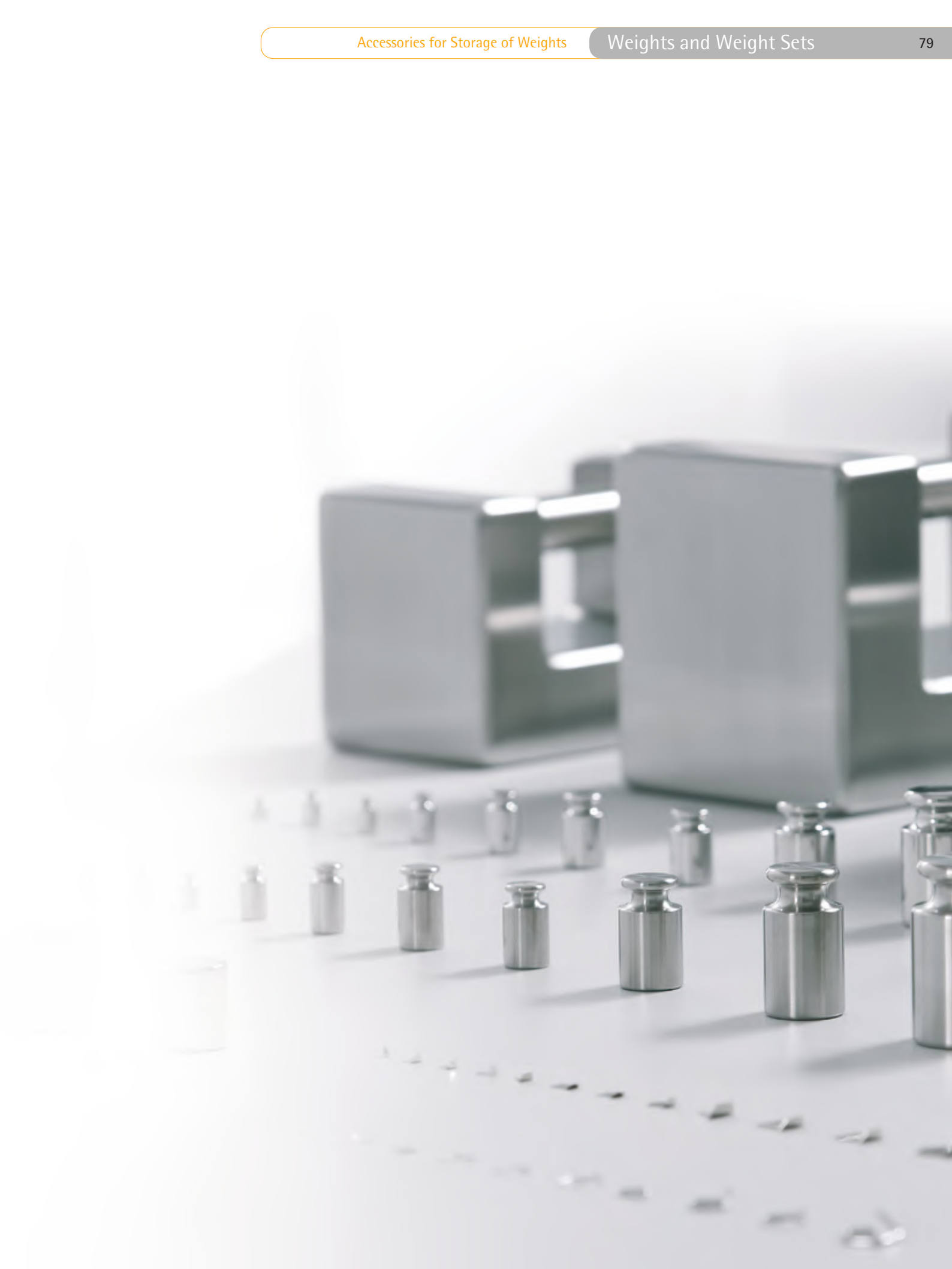
* For knob weights only; for information on boxes for cylindrical weights, please contact Sartorius (same price)

Range	Contents	mg	g	kg
1 mg to 5 g	1	●	●	
Total	2	●○	●○	
contents:	5	●	●	
11.11 g	10	●		
16 units	20	●○		
	50	●		
	100	●		
	200	●○		
	500	●		
1 mg to 100 g	1	●	●	
Total	2	●○	●○	
contents:	5	●	●	
211.11 g	10	●	●	
21 units	20	●○	●○	
	50	●	●	
	100	●	●	
	200	●○		
	500	●		
1 mg to 200 g	1	●	●	
Total	2	●○	●○	
contents:	5	●	●	
611.11 g	10	●	●	
23 units	20	●○	●○	
	50	●	●	
	100	●	●	
	200	●○	●○	
	500	●		
1 mg to 1 kg	1	●	●	●
Total	2	●○	●○	
contents:	5	●	●	
2,111.11 g	10	●	●	
25 units	20	●○	●○	
	50	●	●	
	100	●	●	
	200	●○	●○	
	500	●	●	

Range	Contents	mg	g	kg
1 mg to 5 kg	1	●	●	●
Total	2	●○	●○	●○
contents:	5	●	●	●
11,111.11 g	10	●	●	
28 units	20	●○	●○	
	50	●	●	
	100	●	●	
	200	●○	●○	
	500	●	●	
1 g to 1 kg	1		●	●
Total	2		●○	
contents:	5		●	
2,110 g	10		●	
13 units	20		●○	
	50		●	
	100		●	
	200		●○	
	500		●	
1 g to 5 kg	1		●	●
Total	2		●○	●○
contents:	5		●	●
11,110 g	10		●	
16 units	20		●○	
	50		●	
	100		●	
	200		●○	
	500		●	
1 g to 10 kg	1		●	●
Total	2		●○	●○
contents:	5		●	●
21,110 g	10		●	●
17 units	20		●○	
	50		●	
	100		●	
	200		●○	
	500		●	

● Weight without marking
○ Weight with marking

* 1 kg and up: gloves included



Services

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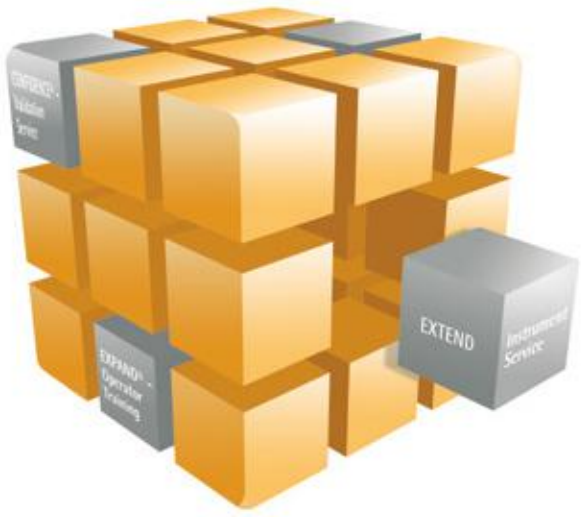

Instrument Services

An expert in balances and weight measurements backed by experience accumulated since 1870, Sartorius offers a complete range of professional services from expert equipment installations to IQ | OQ qualification, to calibration and maintenance for all makes and models of laboratory balances.

The Sartorius network of ISO 17025 accredited organizations for calibration of weighing instruments spans the globe, providing convenient, premium services in compliance with international standards and manufacturers' requirements.

Service Provided
- Installation of balances as well as their installation and operational qualification (IQ | OQ)
- Extended Warranty
- Service contracts for preventive maintenance and calibration services for all brands of balances
- Calibration of balances according to ISO 17025 inside your lab or at the site of your choice
- Determination and certification of the minimum sample weight acc. to USP 41
- Repair services and spare parts for balances

Benefits
- Confident operation and reliable, accurate results as well as long instrument lifetime ensured by regular maintenance and the use of original spare parts
- High-quality results that are always accurate and traceable thanks to professional on-site and on-time installation, maintenance and calibration in compliance with ISO 17025, GLP | GMP and FDA regulations, as required
- Fast and efficient workflows with instruments that work correctly as well as custom-tailored training seminars for users
- Easy and complete management and control of documents to meet the needs of quality systems and regulatory requirements
- Affordable, scheduled in-warranty servicing of your equipment

Installation and Qualification

The reliability and the service life of your equipment significantly depend on its installation and configuration according to the specifications.

Installation and commissioning by our service professionals will ensure that your system successfully operates right from the start.

Description
The Sartorius Services unit will work side by side with you to find the best, innovative solutions that perfectly meet your specific requirements on product quality, productivity and efficiency.

Regardless of whether or not you operate your equipment in a GMP-regulated environment, by having it professionally installed, commissioned and documented, you can be sure that it will be up and running perfectly right from the start. Our Sartorius service team will install and configure your equipment according to your specifications and adapt it to the prevailing on-site ambient conditions, plus offer fully compliant IQ | OQ, whenever needed.

Once our engineers have set up, installed and commissioned your equipment, they will train you and your staff in the correct operation and care of your new instruments, enabling you to work more efficiently and confidently.

Benefits
- We will ensure that the equipment we install will operate in compliance with cGMPs
- Your staff will receive all necessary training and will be instructed on how to operate our equipment to obtain optimal results
- You will receive comprehensive and product-specific documentation at the time of installation

Extended Warranty

Description
Opting for a Sartorius extended warranty contract provides additional 12-month coverage for your instruments, as well as a comprehensive equipment "health check." This means no added cost for any potential repairs and no surprises in your budget, letting you cap the cost of ownership.

Service Provided
- Original spare parts
- Health check at the beginning of the extended warranty period
- Detailed reports on all repair work
- In-warranty repairs as well as 12-month extended warranty contracts

Benefits
- Using original spare parts helps maximize the performance lifetime of your instruments
- Fast response times with constant availability of all commonly used parts
- Our extended warranty guarantees that agreed repair rates will remain the same throughout the contract period

Calibration and Certificates

Description
At Sartorius, we recognize that supplying world-leading equipment is only half the story. This is why we go all the way in providing world-class services to maximize the performance of your equipment.

Sartorius Services will issue all calibration and test certificates required.

Benefits
- Fast response time
- Re-integration of equipment into lab and process sequences
- Complete documentation

Why choose an accredited calibration certificate?
The confidence in calibration certificates, depends substantially on the competence of the service provider. With accreditation, the service provider demonstrates its competence, impartiality and capability to an independent accreditation body and shows that their conformity assessments are technically sound because they meet the statutory and normative requirements at an internationally comparable level.

The demands on the quality of goods and services is growing steadily in light of the liberalization of world trade and the increasing demands of consumers, companies and governmental authorities. Whether it concerns environmental protection, food industry or public health, objective verifications by laboratories, as well as inspection and certification bodies, play an important role.

- Accreditation gives security in every audit
- Accreditation helps to underpin the credibility and performance of your goods and services
- Accreditation removes barriers to global trade ("Tested once, accepted everywhere")
- In many cases, suppliers and regulatory authorities will only accept test or calibration results from a lab that is accredited

Maintenance

The objective of service agreements is a continuous, precise operation of your equipment, to secure your investments for the long term and to guarantee correct configuration, calibration and adjustment.

Preventive maintenance will be performed in accordance with Sartorius' fixed standards and in between the contractually stipulated time intervals between the customer and Sartorius.

Description
Total customer satisfaction can be guaranteed only if outstanding products are covered by extraordinary service support that enhances their value.

Regular preventive maintenance not only increases the lifetime of your equipment and ensures that it is correctly set, calibrated and adjusted at all times, but also prevents unnecessary, costly downtime.

Service Provided
- We will provide a dedicated service engineer who is familiar with your specific equipment
- Our service team will take care of product-specific documentation and issuing calibration and test certificates
- We will proactively replace critical components before they become troublesome
- Our service engineers receive comprehensive, documented training to keep their qualifications up-to-date

Benefits
- Consistently excellent equipment performance
- No unnecessary, costly downtime
- Complete documentation
- Extended equipment lifetime


sartorius

Pipette Calibration

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Sartorius offers a 12-channel pipette calibration balance for easy and fast calibration of your multi-channel pipettes. This innovative solution includes 12 balances in one system. This way, you can perform a 10.3 calibration on your multi-channel pipettes within less than 10 minutes – instead of 3 hours with a single-channel balance.

SpeedCal Multi-Channel Pipette Calibration Balance

SpeedCal Advantages at a Glance
Testing is carried out gravimetrically according to EN ISO 8655/6.

SpeedCal consists of 12 weigh cells and calibration software installed on a computer for testing all 12 channels simultaneously.

SpeedCal is designed to test multi-channel pipettes with a nominal volume ranging from 10 µl to 1.2 ml.

SpeedCal needs only about three minutes total to test a 12-channel pipette (= 360 individual measurements including manual pipetting).

Calibration measurements take place fully automatically, except for pipetting.

The integrated evaporation trap ensures stable humidity inside weighing vessels.

Used with the calibration software provided, the laptop generates an EN ISO 8655-compliant report.

SpeedCal is supplied with a 12-channel aspiration device. In addition, SpeedCal is conveniently supplied with a standard laptop.

Premium service is ensured by Sartorius.

Proprietary Technology
Utility model application registered in Germany. European patent already granted.

Specifications and Ordering Information

Features	
SSPC12K SpeedCal 12-channel balance for calibrating multi-channel pipettes; supplied with a standard laptop, including 12-channel aspiration device	
Length × width × height; weight	Approx. 72 × 83 × 97 cm; 120 kg Approx. 28" × 33" × 38"; 265 lb.
Operating voltage	100–240 V | 50 Hz or 60 Hz
Type of protection	IP 54

Application	
Multi-channel, piston-operated pipettes; nominal volume	10 µl – 1.2 ml

Weigh Cells	
Weigh cells, Sartorius type featuring electromagnetic force compensation	WZA215-LC
Number of weigh cells	12
Max. permissible error (k=1)	≤ 0.02 mg (in the range of 0 –1.2 g | 0 –1,200 µl)
Resolution	0.01 mg
Tare range	12 g
Repeatability (i.e. standard deviation)	≤ 0.02 mg
Response time (average)	Approx. 5 s
Sensitivity to temperature drift	Between +10°C and 30°C ≤ ± 1×10^{-6} ppm/K
Warm-up time	Approx. one hour after a cold start (it is recommended to keep the unit in standby mode)

Weighing Tubes	Removable; can be disassembled by Sartorius Service
Spacing and volume	9 mm; volume 12 ml
Tube drainage	By aspiration device (no need to remove the tubes)
Compliance with Test Requirements	Compliance with test requirements according to EN ISO 8655/6
Testing speed	Approx. 10 minutes for the complete 10.3 test

On-site Calibration Conditions	
Horizontal, even surface and free of mechanical vibration; clean and free of dust; sources of high electromagnetic interference fields must be avoided	
Allowable ambient temperature	Constant ±1°C between +10°C to +30°C

Shipping Data	
Shipping weight	Approx. 150 kg | Approx. 331 lb.
Shipping dimensions (L × W × H)	Approx. 160 × 150 × 190 cm | Approx. 63" × 59" × 75"

Accessories	
Excel/ASCII data transfer software	YFSP-02
Pump for SpeedCal SSP12K 12-channel aspiration device	YFSP-03

Data Acquisition
Standard laptop, monitor
Operating system: Windows 7

CE Marking
According to Council Directive 73/23/EEC
According to Council Directive 89/336/EEC
Optional: According to Council Directive 90/384/EEC

Warranty
12 months

Service
Installation, qualification, startup and instructions.
Please contact Sartorius Services for your personalized offer.

Did You know ...

... that you can order more lab catalogs?

Get an overview of our high-quality laboratory instruments, high-grade consumables and excellent services.

Our product portfolio focuses on laboratory instruments, such as lab balances, pipettes and laboratory water purification systems. Moreover, we offer the widest range of consumables like laboratory filters and pipette tips.

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Publication No.: WL-0007-e
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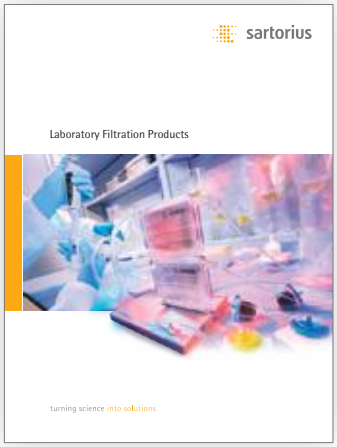

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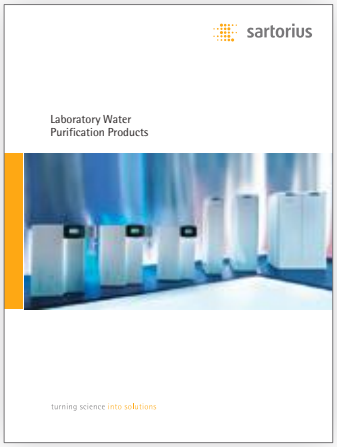

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Order No.: 85037-548-54

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