

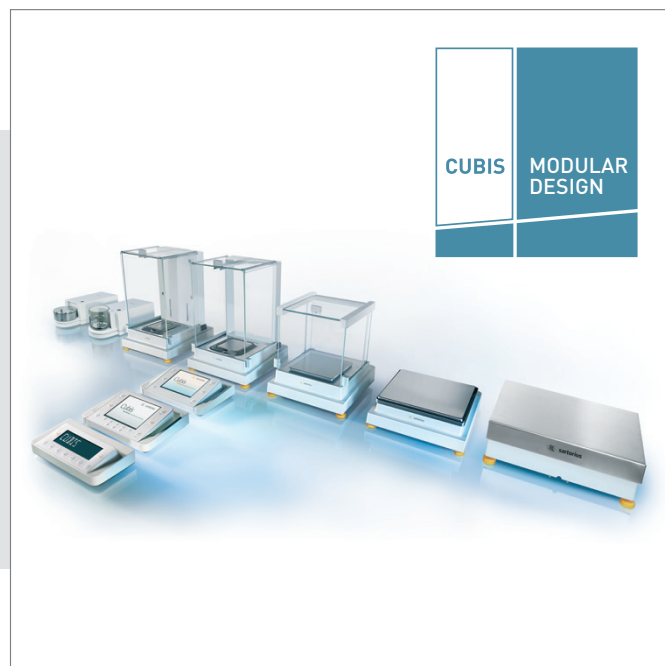


Sartorius Cubis® Series

Advantages

- Modular design offering the widest variety of customizable versions
- Settings configurable to user-specific requirements
- Customized integration into existing applications
- Motorized leveling function*
- The highest accuracy, even for the smallest sample quantities

* For all models up to a maximum capacity of 6.2 kg, except for models with a readability of 1 µg or 0.1 µg



Product Description

The Cubis® modular system, consisting of display and control units, weighing modules, draft shields and interface modules and an extensive range of accessories, enables the balance to be custom adapted to any weighing tasks. The metrological specifications and equipment features of Cubis® set it apart from other weighing instruments – far beyond the usual standards of premium laboratory balances. With a finely graduated range of weighing capacities of up to 70 kg and readabilities from 0.1 µg to 1 g, Cubis® offers the ideal choice of model for any application.

Technical Specifications

| General Specifications | |
|----------------------------------|--|
| Power supply | 100–240 V~, –15%/+10%, 50–60 Hz, 1.0 A |
| Input voltage | 15 VDC, ± 5 % |
| Power consumption | 7W (max.) |
| Ambient temperature | Operation +5°C to +40°C |
| Highest relative humidity | 80 % for temperatures up to 31°C, decreasing linearly to 50 % relative humidity for 40°C |
| Safety of electrical equipment | According to EN 61010-1:2001: Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements |
| Electromagnetic compatibility | According to EN 61326-1:2006: Electrical equipment for measurement, control, and laboratory use – EMC requirements – Part 1: General requirements |
| Defined immunity to interference | Suitable for use in industrial areas |

Cubis® Display and Control Units



| Type | MSA | MSU | MSE |
|---|--|---|--|
| Operation | Touch screen, keys for central basic functions | Keys | Keys |
| Display | High-resolution color TFT, 5.7" graphic display | High-resolution black-and-white, 5.7" graphical display | Liquid crystal display, black-and-white |
| Adaptation of the display and control unit | Tilttable display, removable display and control unit | | Removable display and control unit |
| Standard data interfaces | <ul style="list-style-type: none"> – USB (integrated into weighing module) – RS-232C accessory interface, 25-pin (integrated into weighing module) – Various data protocols available (can also be connected to software designed for external manufacturers) – Ethernet (integrated into display unit) | | <ul style="list-style-type: none"> – USB (integrated into weighing module) – RS-232C accessory interface, 25-pin (integrated into weighing module) |
| SD card reader | Integrated as standard into display and control unit | | – |
| Operation of the motorized draft shield (only for DA, DI, DM draft shields) | Activated by side keys or touch-free using IR switch (optional); learning capability | | Activated by key or touch-free using IR switch (optional); learning capability |
| Applications | Unit conversion, SQmin function for minimum initial weight according to USP, isoCAL automatic calibration adjustment function, individual identifiers, density determination, statistics, calculations, averaging, formulation, weighing in percent, time-controlled functions, totalizing, DKD measurement uncertainty, second tare memory, counting, check-weighing, alibi memory, audit trail | | Unit conversion, isoCAL automatic calibration adjustment function, density determination (buoyancy method only), calculations, averaging, net total formulation, weighing in percent, counting, totalizing |

Cubis® Weighing Modules

Ultra-Micro Balances 0.0001 mg

| Model | | 2.7S | 2.7S (with DF filter draft shield) |
|---|--------|----------------------------------|------------------------------------|
| Readability | mg | 0.0001 | 0.0001 |
| Weighing capacity | g | 2.1 | 2.1 |
| Tare range (subtractive) | g | – 2.1 | – 2.1 |
| Repeatability | ≤±mg | 0.00025 | 0.00025 |
| Linearity | ≤±mg | 0.0009 | 0.0009 |
| Off-center loading (eccentricity) (test load [g]) | mg | 0.0025 (1) | 0.0025 (1) |
| Optimal starting point of the operating range* | mg | 0.082 | – |
| Sensitivity drift between +10 to +30°C | ±ppm/K | 1 | 1 |
| Typical stabilization time | s | < 7 | < 7 |
| Typical measurement time | s | < 10 | < 10 |
| External standard calibration value (min. accuracy class) | g | 2 (E2) | 2 (E2) |
| Display result (depending on the set filter level) | s | 0.1 – 0.4 | 0.1 – 0.4 |
| Weighing pan size Ø | mm | 20 | 50 |
| Weighing chamber height | mm | 70 | 15 |
| Protection | | Protected against dust and water | |

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

Precision High Capacity Balances

| Model | | 70201S | 36201S | 36201P | 20201S |
|--|--------|-----------------------------------|--------------|-----------------|-------------|
| Readability | mg | 100 | 100 | 100 1,000 | 100 |
| Weighing capacity | g | 70,200 | 36,200 | 10,200 36,200 | 20,200 |
| Tare range (subtractive) | g | - 70,200 | - 36,200 | - 36,200 | - 20,200 |
| Repeatability | ≤±mg | 100 | 100 | 100 500 | 100 |
| Linearity | ≤±mg | 500 | 200 | 200 | 200 |
| Off-center loading (eccentricity) (test load [g]) | mg | 500 (20,000) | 300 (10,000) | 300 (10,000) | 300 (5,000) |
| Optimal starting point of the operating range* | g | 82 | 82 | 82 | 82 |
| Sensitivity drift between +10 to +30°C | ±ppm/K | 3 | 2 | 2 | 2 |
| Typical measurement time | s | 1.5 | 1.5 | 1.5 | 1.5 |
| External standard calibration value (min. accuracy class) | kg | 20 (F1) | 10 (F1) | 10 (F1) | 10 (F1) |
| Display result (depending on the set filter level) | s | 0.1 – 0.4 | 0.1 – 0.4 | 0.1 – 0.4 | 0.1 – 0.4 |
| Weighing pan size (W × D) | mm | 400 × 300 | 400 × 300 | 400 × 300 | 400 × 300 |
| Protection | | IP54 in accordance with IEC 60529 | | | |

| Model | | 70200S | 36200S |
|--|--------|-----------------------------------|----------------|
| Readability | mg | 1,000 | 1,000 |
| Weighing capacity | g | 70,200 | 36,200 |
| Tare range (subtractive) | g | - 70,200 | - 36,200 |
| Repeatability | ≤±mg | 500 | 500 |
| Linearity | ≤±mg | 1,000 | 1,000 |
| Off-center loading (eccentricity) (test load [g]) | mg | 1,000 (20,000) | 1,000 (10,000) |
| Optimal starting point of the operating range* | g | 820 | 820 |
| Sensitivity drift between +10 to +30°C | ±ppm/K | 2 | 3 |
| Typical measurement time | s | 1 | 1 |
| External standard calibration value (min. accuracy class) | kg | 20 (F1) | 10 (F1) |
| Display result (depending on the set filter level) | s | 0.1 – 0.4 | 0.1 – 0.4 |
| Weighing pan size (W × D) | mm | 400 × 300 | 400 × 300 |
| Protection | | IP54 in accordance with IEC 60529 | |

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

Cubis® Leveling

- Ø** The Cubis® shows the level indicator on the display and provides support for rapid leveling (as standard on the display and service units MSA and MSU; on the MSE there are only symbols to support manual leveling).
- 1** Fully automatic, motorized Q-Level leveling at the touch of a button (available for all Cubis® weighing modules with a weighing capacity of > 6.1 g and ≤ 6200 g).

Test Certificates and Permits

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

Cubis® Draft Shields

- DØ** Flat, stainless steel weigh pan with no draft shield for weighing modules with a pan size of 206 × 206 mm and 400 × 300 mm.
- DE** Manual, glass draft shield for precision balances with a readability of 1 mg and weighing module 5202S.
- DR** Flat, stainless steel weighing pan draft shield (removable, with no glass components) for precision balances with a readability of 1 mg and weighing module 5202S.
- DU** Manual, glass analytical balance draft shield with smooth-running, wide-opening doors, unimpeded access to the weighing chamber without interfering braces. For models with 0.01 mg, 0.1 mg, 1 mg readability and weighing module 5202S.
- DA** Automatic, glass motorized draft shield with learning capability for ergonomic working and individual adaptation to different applications. For models with 0.01 mg, 0.1 mg, 1 mg readability and weighing module 5202S.
- DI** Automatic, glass motorized draft shield with integrated ionizer to eliminate the impact of electrostatic charges in samples | vessels and learning capability for ergonomic working and individual adaptation to different applications. For models with 0.01 mg, 0.1 mg, 1 mg readability and weighing module 5202S.
- 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 a diameter of up to 50 mm (75 mm and 90 mm pans are optional) in ultra-micro and micro balances with a readability of 0.0001 mg and 0.001 mg (not for weighing module 3.6P) and also reduces electrostatic effects.

Optional Interface Modules

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

Cubis® Optional Accessories

| Printers and Communication | |
|--|-------------|
| Verifiable data printer for connection to RS-232, 25-pin, accessory interface | YDP10-OCE |
| Verifiable data printer with <i>Bluetooth</i> ® data transmission (with YD001MS-B or IB option only)* | YDP10BT-OCE |
| Color ribbon for YDP10-OCE and YDP10BT-OCE | 6906918 |
| Paper rolls for printer YDP10-OCE; 5 rolls 50 m each | 6906937 |
| <i>Bluetooth</i> ® data interface for wireless connection of data printer YDP10BT* | YD001MS-B |
| RS-232C data interface, 9-pin including PS/2 for connecting a PC or keyboard* | YD001MS-P |
| RS-232C data interface, 25-pin for connection of Cubis® accessories* | YD001MS-R |
| Display cable 3 m for Cubis® MSA and MSU models for separate setup of display and weighing unit (installation by Sartorius Service or ex works [order VF4016]) | YCC01-MSD3 |
| Display cable 3 m for Cubis® MSE models, for separate setup of display and weighing unit (installation by Sartorius Service or ex works [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 separate setup of display and weighing unit | VF4016 |
| RS-232C connection cable to connect PC with 9-pin; COM interface, 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 LC display and tactile keys | YAC01MSE |
| MSU display and control unit with backlit b w graphic display and tactile navigation keys | YAC01MSU |
| Barcode scanner with connection cable for PS2, 120 mm reading range | YBR03PS2 |
| QR barcode reader with connection cable | YBR04PS2 |
| Foot switch for printing, taring, or using function keys, selection via menu, incl. T connector | YFS01 |
| Infrared sensor for touch-free activation of functions (e.g., draft shield control) | YHS01MS |
| Hand switch for printing, taring, or using function keys, selection via menu, incl. T connector | YHS02 |
| Foot switch for functions draft shield OPEN CLOSED (in combination with DA and DI draft shields only), tare, and print | YPE01RC |
| Additional display, LCD, figure size 13 mm, backlit | YRD03Z |
| 3-segment control display, red – green – red, for plus minus measurements, incl. T connector | YRD11Z |
| Installation display cable, 3 m, for Cubis® models, for separate setup of display and weighing unit | VF4016 |
| RS-232C connection cable to connect PC with 9-pin COM interface, length 1.5 m | 7357314 |
| Sartorius Wedge for Windows. Software for data communication between balance and PC | YSW02 |

* Not available for Precision high capacity models with a weighing capacity of $\geq 20,200$ g.

| 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 |
| Pipette Check light V1. Pipette testing according to ISO 8655 for MSA display | YAPP04 |
| Pipette Check Advanced. Pipette testing according to ISO 8655, with pipette database and analysis of the last test series via HTML for MSA display | YAPP42 |

| Filter Weighing and Antistatic Accessories | |
|---|-----------|
| Antistatic weighing pan, diameter 130 mm, for weighing modules with a readability of 0.1 mg or 0.01 mg | YWP01MS |
| Filter weighing pan Ø 75 mm, for ultra-micro balance or micro balance models (weighing modules 6.6S, 2.7S; only together with DF draft shield) | VF2562 |
| Filter weighing pan Ø 90 mm, for ultra-micro balance 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-ODR |
| Stat-Pen ionization probe for discharging electrostatically charged samples and filters | YSTP01 |

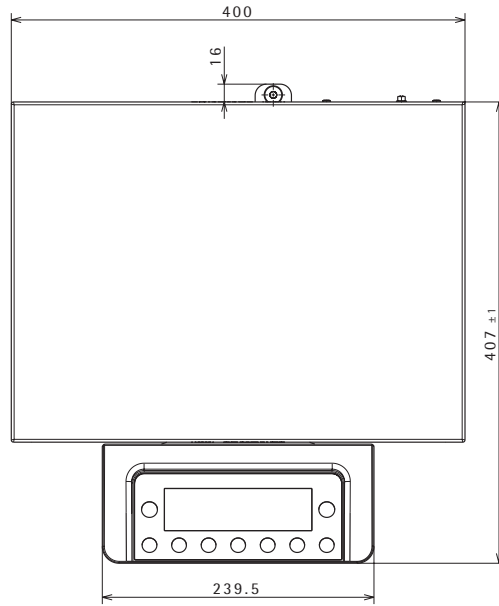
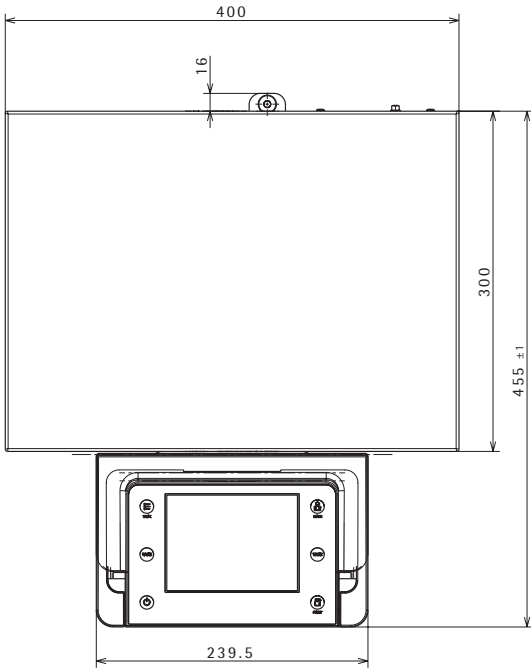
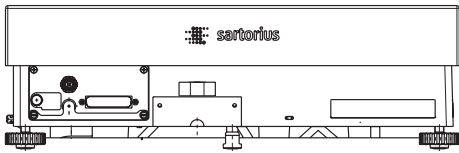
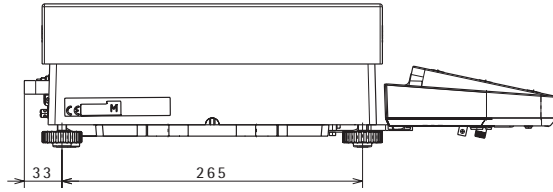
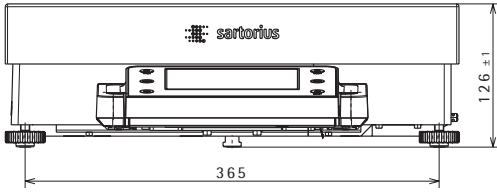
| Special Applications | |
|---|---------|
| Density determination kit for solids and liquids for weighing modules with a readability of < 1 mg | YDK01MS |
| Density determination kit for solids and liquids for weighing modules with a readability of 1 mg | YDK02MS |
| Q-Grip, flexible holder for weigh-in containers and filters up to 120 mm diameter (replaces the original weighing pan; for Cubis® models with 0.01 and 0.1 mg readability) | YFH01MS |
| Q-Grid grid weighing pan for Cubis® models with 10 mg or 100 mg readability for weighing in laboratory hoods, safety weighing cabinets, or workbenches (smaller areas exposed to draft on the weighing pan; replaces the standard weighing pan) | YWP03MS |

| Weighing Tables | |
|---|-------|
| Weighing table made from synthetic stone, with vibration dampening | YWT03 |
| Wall console | YWT04 |
| Weighing table made from wood with synthetic stone for precise, reliable measurements | YWT09 |

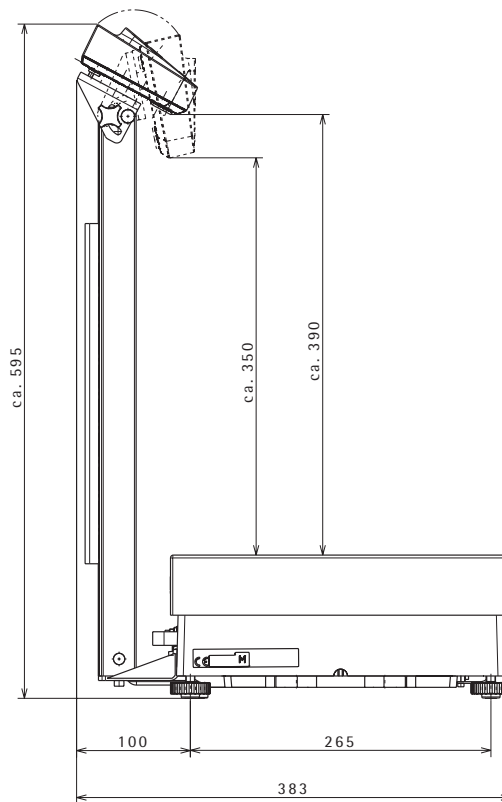
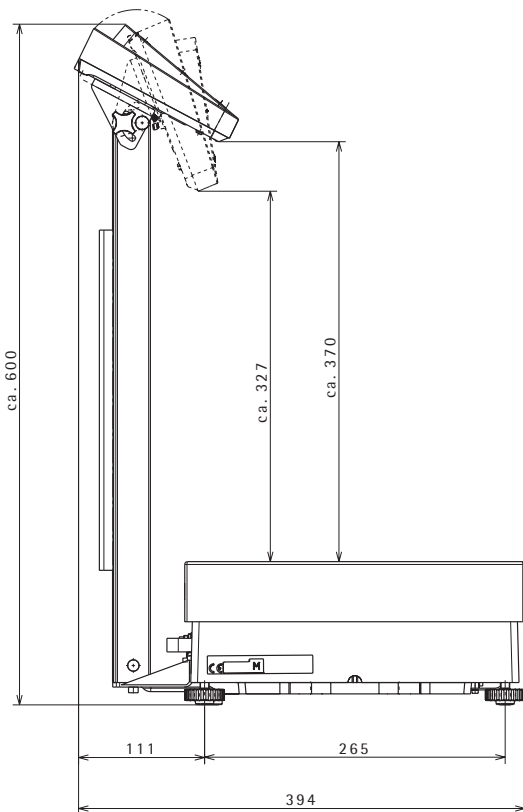
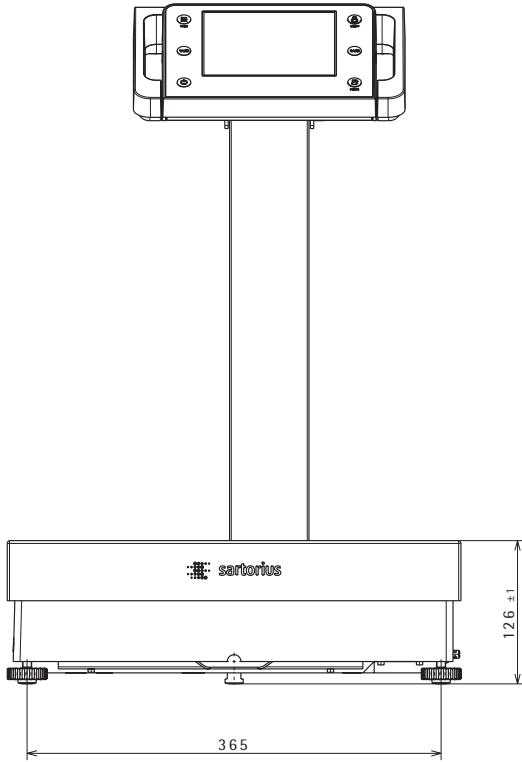
| Weighing Accessories | |
|--|----------|
| Weighing scoop made from chrome nickel steel, 90 × 32 × 8 mm | 641214 |
| Aluminum weighing scoop, 4.5 mg (250 pieces) for ultra-micro balance and micro balance models | 6565-250 |
| Aluminum weighing scoop, 52 mg (50 pieces) for ultra-micro balance and micro balance models | 6566-50 |
| Support arm for 10 100 mg precision weighing modules for raising 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 raising 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 verified models, CE mark) | 69EA0040 |

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Precision High Capacity Balances
All dimensions are given in millimeters



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