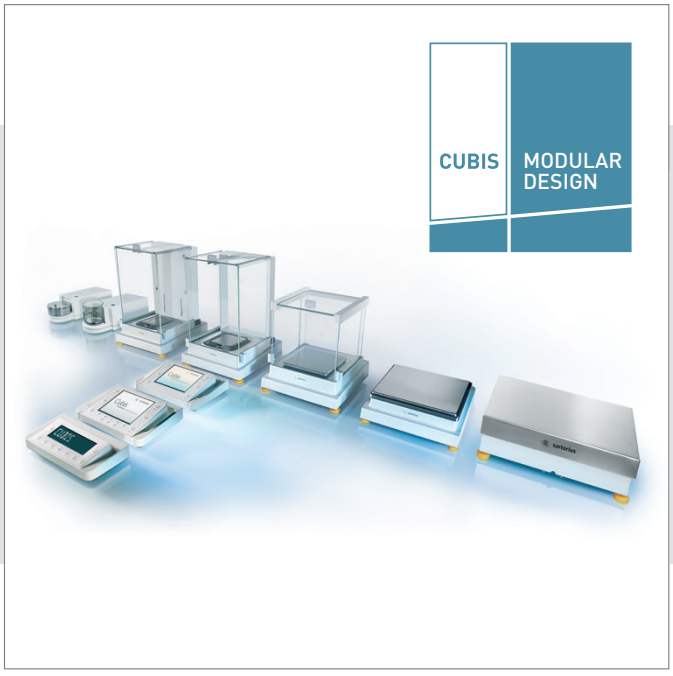
Sartorius Cubis® Series



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	Tiltable display, removable display and control unit		Removable display and control unit
Standard data interfaces	– 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)		– 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 ∅	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	YDP10-0CE
Verifiable data printer with *Bluetooth*® data transmission (with YDO01MS-B or IB option only)*	YDP10BT-0CE
Color ribbon for YDP10-0CE and YDP10BT-0CE	6906918
Paper rolls for printer YDP10-0CE; 5 rolls 50 m each	6906937
Bluetooth® data interface for wireless connection of data printer YDP10BT*	YDO01MS-B
RS-232C data interface, 9-pin including PS/2 for connecting a PC 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 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 ≥ 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 ∅ 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 ∅ 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	YIB01-0DR
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 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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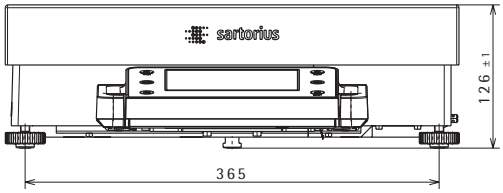
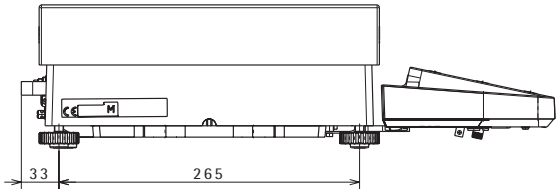
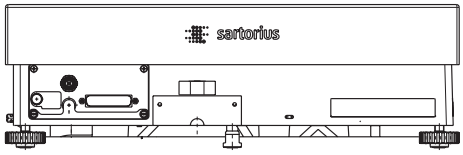
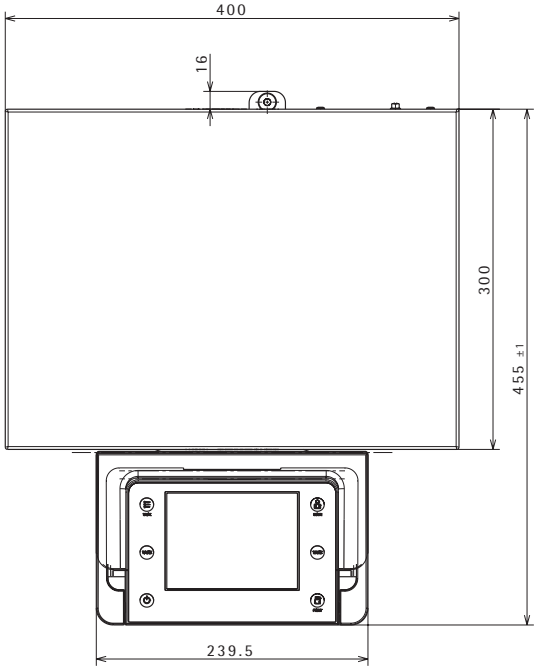
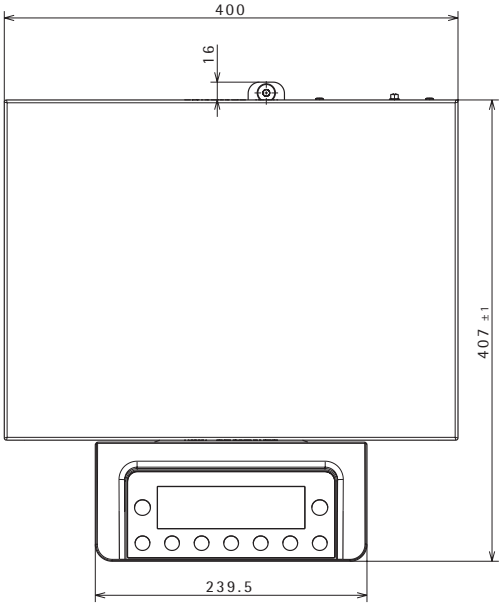
Precision High Capacity Balances
All dimensions are given in millimeters











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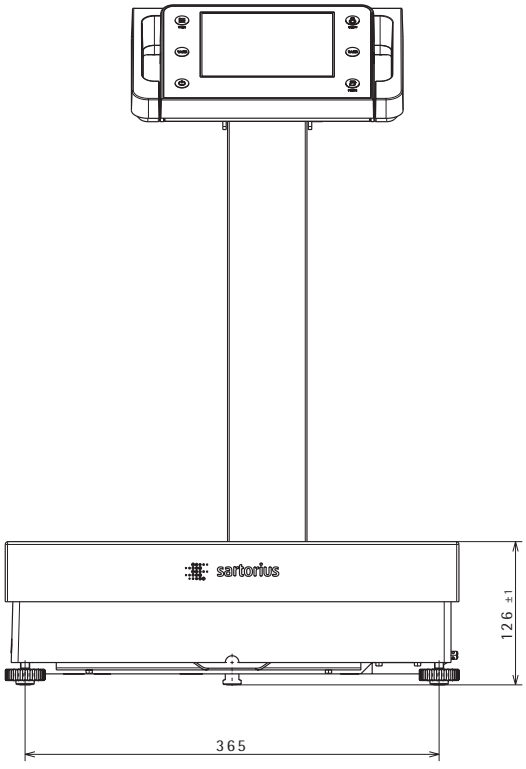

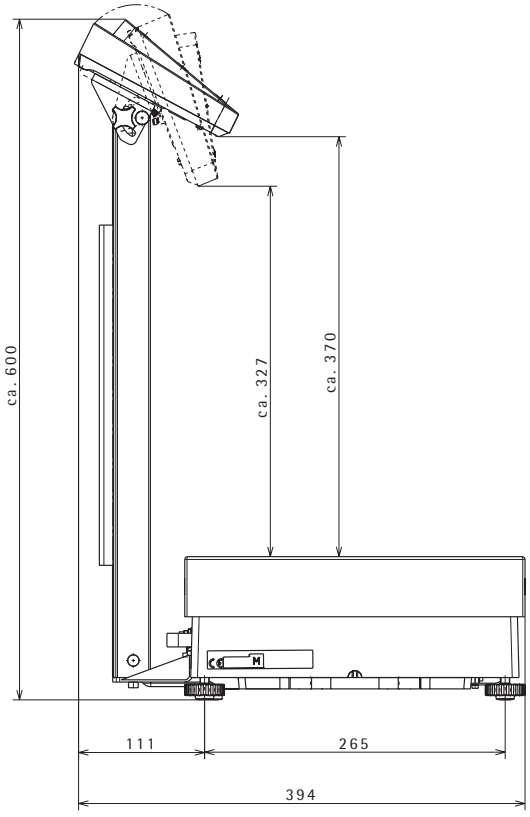

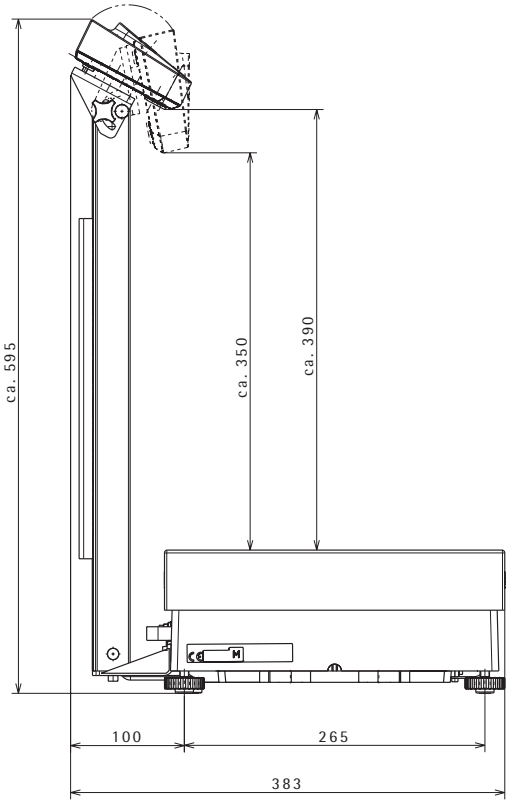

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