SARTORIUS

Product Datasheet

Cubis® II Ultra-High Resolution Balances

Semi-Micro Balances

Highlights

Superior weighing performance
Fast measurement time and accurate weighing results are guaranteed thanks to the next generation monolithic weighing system and the engineering solution compensating for environmental changes.

No more issues with charged samples
The glass draft shields coated with conductive layer prevents from outer electrostatic effects and the built-in ionizer effectively eliminates electrostatic charges from samples.

Cleaning process guidance
Intuitive process for daily and advanced cleaning is now available in all Cubis® II MCA. The cleaning QApp provides visual guidance, information about chemical compatibility as well as electronical tracking of these events.

Hardware upgradeability
Hardware features like motorized draft shield function or built-in ionizer can be activated post-purchase. An automated inner draft shield is available as a klick-in accessory which is recommended to use under challenging environmental conditions (e.g. in drafty environment).

Compliance and Data Integrity
The end-to-end data integrity, technical controls for 21 CFR Part 11 compliance, integrated audit-trail and state-of-the-art user management ensure laboratories can meet regulatory requirements. These features are directly available on the Cubis® II balances, without the need of additional software.

Balances Fleet Management
The Ingenix Suite is a flexible, open solution that works with or without an ELN/LIM system. It offers unlimited connections to easily manage the entire Cubis® II MCA lab balance fleet across all labs within the same network.

Ease of use
The teaching function with learning capability of the motorized draft shield, guided workflows for many different applications (QApps), automated motorized leveling and automatic internal adjustment (isoCAL) help to with easy and error-free operation of the balance.

Example: Hardware Upgradeability

Motorized inner draft shield
Installation of Cubis® II balances in a workbench or laminar hood with filtered air flow subjects the instrument to drafty conditions. The motorized inner draft shield YDS125A ensures best weighing performances and ease of use even under drafty conditions.

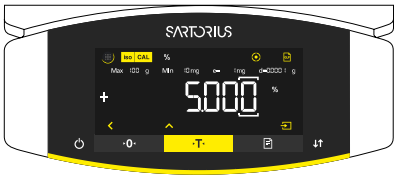
Application Example: Pipette Check

Pipette calibration kit
Cubis® II balances with pipette calibration kit YCP07MC and software application Pipette Check Advanced (QAPP005) are a complete solution to test Pipettes according to DIN EN ISO 8655.

Product Information

The Cubis® II laboratory balances are modular, therefore they allow to choose between applications and configurations which suit the best to the needs. These balances can be configured at the level of display, draftshields, software applications and hardware functions. The Cubis® II range of semi-micro balances with a maximum load between 120 g and 220 g and a readability between 0.005 mg and 0.01 mg provide the ideal choice for a broad range of applications.

Cubis® II Display and Control Units



Type	MCA	Type	MCE
Display*	7″ color touch TFT display in 16:9 format with intuitive user interface	**Display***	TFT touch screen for routine weighing tasks
Software	Factory installed basic set of weighing applications (license free) and licensable software packages (QPs) for various applications (QApps) and functional extensions.	**Software**	Factory installed basic set of weighing applications
Hardware	Configurable functions such as automated draft-shield or built-in ionizer. Optional upgrade after purchase is available (license required)	**Hardware**	Configurable functions such as automated draft-shield or built-in ionizer. Optional upgrade after purchase is not available.

* LED backlight 50,000 hours (if used with max. contrast), cable length 25 cm

Draft Shield Inner Dimensions

Draft Shield Version	Depth (mm)	Height (mm)	Width (mm)
D**	159	234	185

** max. 500,000 opening/closing cycles guaranteed if serviced at regular intervals of 100.000 cycles

Technical Specifications

Cubis® II Weighing Modules
Semi-Micro Balances 0.005 - 0.01 mg

	Units	125S	225P	225S	226S
Scale interval (d)	mg	0.01	0.1 | 0.01	0.01	0.005
Maximum capacity (Max)	g	120	220 | 120	220	220
Repeatability up to 5% load					
Standard deviation of the load values, tolerance	mg	0.015	0.015	0.015	0.010
Standard deviation of the load values, typical value	mg	0.007	0.007	0.007	0.004
Repeatability near Max					
Standard deviation of the load values, tolerance	mg	0.025	0.04	0.025	0.025
Standard deviation of the load values, typical value	mg	0.015	0.02	0.015	0.015
Linearity deviation					
Tolerance	mg	0.07	0.10	0.07	0.07
Typical value	mg	0.03	0.03	0.03	0.03
Deviation at eccentric loading, positions according to OIML R76					
Test weight	g	50	100	100	100
Tolerance	mg	0.12	0.2	0.15	0.12
Typical value	mg	0.04	0.06	0.05	0.04
Sensitivity drift between +10 °C and +30 °C	ppm/K	1	1	1	1
Tare maximum capacity: Less than 100% of maximum capacity					
Accuracy class according to Directive 2014 | 31 | EU		I	I	I	I
Verification scale interval (e) according to Directive 2014 | 31 | EU	mg	1	1	1	1
Minimum load (Min) according to Directive 2014 | 31 | EU	mg	1	1	1	1
Minimum weight according to USP (United States Pharmacopeia), Chap. 41 and Ph.Eur. 2.1.7					
Optimum minimum weight	mg	8.2	8.2	8.2	4.1
Typical minimum weight	mg	13.0	13.0	13.0	8.0
Typical stabilization time	s	1.5	1.5	1.5	1.5
Typical measurement time	s	4	4	4	6
Recommended calibration weight					
External test load	g	100	200	200	200
Accuracy class, according to OIML R111-1		E2	E2	E2	E2
isoCAL					
Temperature change	K	1.5	1.5	1.5	1.5
Time span	h	12	12	12	12
Dimensions					
MCE | MCA Weighing module (L × W × H)*	mm	301 x 240 x 301	301 x 240 x 301	301 x 240 x 301	301 x 240 x 301
Weighing pan size	mm	Ø 90	Ø 90	Ø 90	Ø 50
Weight, approx.*	kg	15	15	15	15

* depending upon weighing pan size, filter weighing pan and draft shield

Technical Specifications

Cubis® II Power Supply Unit

Power supply only permitted using Sartorius power supply unit. Sartorius network device, type 1000099844

	Units	Value
Primary		
AC voltage	V	100–240 (±10%)
Frequency	Hz	47-63
Current consumption, maximum	A	0.8
Overvoltage category according to IEC 606641–		
DC voltage at 4.3 output current	V	15 (±15%)
Power, maximum	W	64.5
Short circuit protection: Electronic		
Power supply cable		
Power supply cable according to IEC 60320-1 C13 | C14, with IEC plug, 3-pin, and with country-specific power plug		
Cubis® II Safety of Electrical Equipment		
According to EN 61010–1 | IEC 61010–1 Safety requirements for electrical equipment for measurement, control, and laboratory use — Part 1: General Requirements		
Electromagnetic Compatibility		
Interference resistance		
Suitable for use in industrial areas		
Transient emissions		
Class B		
Suitable for use in residential areas and areas that are directly connected to a low voltage network that (also) supplies residential buildings		
Materials		
Housing: Stainless steel 1.4401 | 1.4404, Aluminum ;Plastic PBT | PA; Float glass Optiwhite		
Control Unit: Aluminum, painted; Plastic PBT | PP; Float glass		
Integrated Clock		
Maximum deviation per month (RTC): 30s		
Backup Battery		
Lithium battery: type CR2032		
Service life at room temperature, minimum: 10 Years		
Alibi Memory Value		
Maximum number of data records: 150,000		
Audit-Trail memory		
Maximum number of data points: 300,000		

Technical Specifications

Interfaces

Specifications for the USB–A Interface
Communication: USB host (master)
Connectable devices: Sartorius printers, USB sticks with software update
Specifications for the USB–B Interface
Communication: USB device (slave)
Type of interface: Virtual serial interface (virtual COM-port, VCP) and “PC direct” communication
Specifications for the USB–C Interface
Communication: Downstream-facing port (DFP), USB host (Master)
Communication: RS232 connection with accessory YCC-USB-C-D09M

Draft Shields

Code	Item
D	Manual glass analytical draft shield chamber, with smooth-action doors that open wide and provide unimpeded access to the weighing chamber.

Configuration Options

Code	Item	MCA	MCE
QP99	QApp Package All inclusive (QP1 to QP4)	x	-
QP1	QApp Package Pharma	x	-
QP2	QApp Package Advanced Applications	x	-
QP3	QApp Package Utilities	x	-
QP4	QApp Package Connectivity	x	-
HWL	QApp Package Hardware	x	x
ION	Ionizer	x	x
MDS	Automatic Draft Shield	x	x

After Purchase Licensing

Code	Item	MCA	MCE
QP1	QApp Package Pharma	x	-
QP2	QApp Package Advanced Applications	x	-
QP3	QApp Package Utilities	x	-
QP4	QApp Package Connectivity	x	-
QP10	QApp Package Hardware	x	-
QAPP1001	Ionizer	x	-
QAPP1002	Automatic Draft Shield	x	-

Technical Specifications

Ambient Conditions

Installation Site		
Standard laboratory rooms		
Installation site according to IEC 60259-1, maximum altitude above sea level	m	3000
For indoor use only		
Temperature		
In operation with isoCAL function	°C	+10 – +30
In operation, without isoCAL function	°C	+17 – +27
In operation for conformity-assessed devices: see information on the device's ID plate		
During storage and transport	°C	–20 – +60
* Scope of application as per Directive 2014/31/EU		
Relative humidity		
At temperatures of up to 31 °C	%	80
Then linear decrease from 80% at 31 °C to 50% at 40 °C		

Installation Conditions

Suitable for the weight of the device and the associated components
Stable, fully flat, even, low vibrations
Not directly against a wall
No heat from heating systems or direct sunlight
No drafts from open windows, AC systems, or doors
No vibrations
No "heavy traffic" areas (personnel)
No electromagnetic fields
No dry air

Approvals

Code	Item
SØØ	Standard version non-verified, all units
SØ1	Standard version non-verified, metric units only
CCN	Balance with Type Approval Certificate for China
CEU	Verified balance with EC Type Approval Certificate (for EU except France)
CFR	Verified balance with EC Type Approval Certificate for France only
OBR	Balance with Type Approval Certificate for Brazil
OIN	Balance with Type Approval Certificate for India
OJP	Balance with Type Approval Certificate for Japan
ORU	Balance with Type Approval Certificate for Russia

Accessories

Inner Draft Shield	Quantity	Cat. No.
Motorized	1	YDS125A
Manual	1	YDS125U
Glass base, for height reduction of weighing compartment	1	YDSHR
Outer Draft Shield		
Left door outer draftshield	1	YCCDSL
Right door outer draftshield	1	YCCDSR
Cover slide outer draftshield	1	YCCDSU
Front panel outer draftshield	1	YCCDSF
Printers and Communication		
Thermal transfer | thermal printer for GMP | GLP printouts on continuous paper and labels	1	YDP30
Laboratory thermal transfer printer YDP30 with USB and ethernet connection	1	YDP30-NET
Wireless Nano USB Adapter (for EU only)	1	YWLAN01MS
WIFI Nano Router (for EU only)	1	YWLAN02MS
Standard paper and ink ribbon, set, 90 m, for YDP30	1	69Y03285
Self-adhesive paper and ink ribbon, 90 m, for YDP30	1	69Y03286
Standard thermal paper, 24 m roll, for YDP30 | YDP40	5	69Y03287
Self-adhesive thermal paper, 13 m roll, for YDP30	5	69Y03288
Self-adhesive labels for YDP30		
58 mm × 100 mm	350	69Y03094
58 mm × 76 mm	500	69Y03093
58 mm × 30 mm	1000	69Y03092
Displays and Input | Output Elements		
MCE Display	1	69MS0218
Display head MCA for balances with automatic draft shield	1	69MS0212
Motion sensor with USB connection cable	1	YHS02USB
Barcode and QR Reader with USB	1	YBR05
Foot switch for draft shield, tara, print	1	YFS02
Density Determination Kits		
Density determination set for solids and liquids	1	YDK03MC
Pipette Calibration Kit		
Pipette calibration kit for Ultra-High Resolution balances	1	YCP07MC

Accessories

Weighing Pans, Ionizer and Weighing Scoops	Quantity	Cat. No.
90 mm Titanium weighing pan, slotted	1	YWP10-3
50 mm Titanium weighing pan, slotted, with protective plate for 50 mm	1	YWP09-3
Ionization blower for electrostatically charged samples	1	YIB01-ODR
Ionizer with U-shaped electrode for 230 V	1	YIB02-230V
Ionizer with U-shaped electrode for 115 V	1	YIB02-115V
Compact U-shaped ionizer for 230 V/115 V	1	YIB03-C
Stat-Pen ionization pen for discharging electrostatically charged samples	1	YSTP01
Aluminum weighing scoop, 4.5 mg for ultra-micro balance and micro balance models	250	6565-250
Aluminum weighing scoop, 52 mg for ultra-micro balance and micro balance models	50	6566-50
Weighing scoop made from chrome-nickel steel, L 90 mm x W 32 mm x H 8 mm	1	641214
Other Accessories		
Connection cable for operating display, length 3 m	1	YCC01-MCD3-3
Connection cable with RS232 adapter, USB-C to RS232, 9-pin	1	YCC-USB-C-D09M
Ethernet extension cable, 1 m	1	YCC-RJ45-CAT7
Cable RS232 9-pin to M12 inlet for connecting Watson-Marlow pumps 530DuN and 630DuN, 2 m	1	YCC-D09M-M12F-2M
Cable RS232 9-pin (male) to 9-pin (male) for connecting e.g. Watson-Marlow 323Du pump, 2.9 m	1	YCC-D09MM-EC-2.9M
Cable DSUB25 DIO to USB for connecting e.g. signal light, 0.5 m	1	YCC01-MC05
Sartorius Wedge, software for data communication between the PC and balance	1	YSW02
Signal light for displays MCE and MCA	1	VF4763
Connection cable for fermenter	1	VF4758
Power supply TNG10 EPS30W	1	6971987
YRB11Z modified for Cubis® balances	1	VF4476
External battery pack	1	YRB11Z
Dust cover Cubis® II MCE ultra-high resolution	1	YDCC2MCE
Dust cover Cubis® II MCA ultra-high resolution	1	YDCC2MCA
Weighing Tables		
Made from synthetic stone, with vibration dampening	1	YWT03
Made from wood with synthetic stone	1	YWT09
Wall console	1	YWT04
Climate Modules		
Climate module, uncalibrated, for ultra-high resolution balances with MCA display	1	YCM20MC
Calibration of a climate module YCM20MC with DAkkS calibration certificate	1	YCM20DAkkS
Climate module with DAkkS calibration certificate for ultra-high resolution balances with MCA display	1	YCM20MC-DAkkS

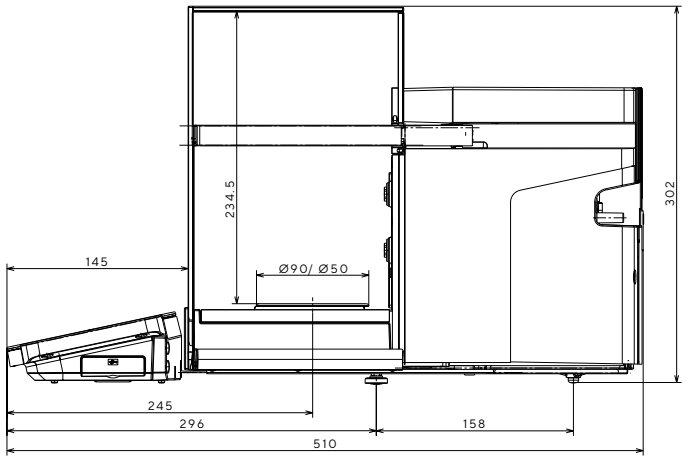
Accessories

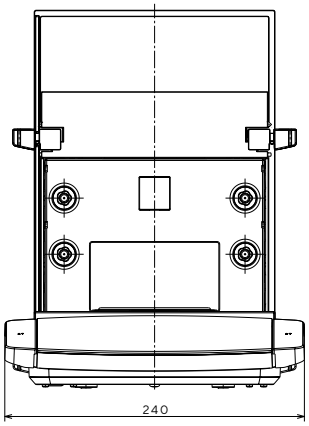
Sample Holders Made of Titanium		Quantity	Cat. No.
Adjustable sample holder for vessels of up to 50 mL		1	YSH02-3
For coronary stents (up to 38 mm)		1	YSH12-3
For save-lock tubes, 1.5 mL – 2 mL		1	YSH14-3
For save-lock tubes up to 5 mL		1	YSH18-3
For vials		1	YSH22-3
For weighing boats		1	YSH26-3
For filters, 150 mm diameter		1	YSH30-3
For filters up to 75 mm		1	YSH35-3
For titration vessels and round bottom flasks		1	YSH47-3
For syringes, vertical		1	YSH46-3

Balance Dimensions

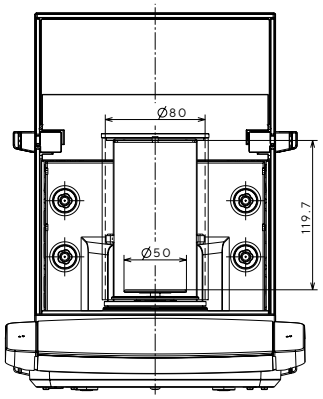
Semi-Micro Balances (MCA Display) | All dimensions are given in millimeters

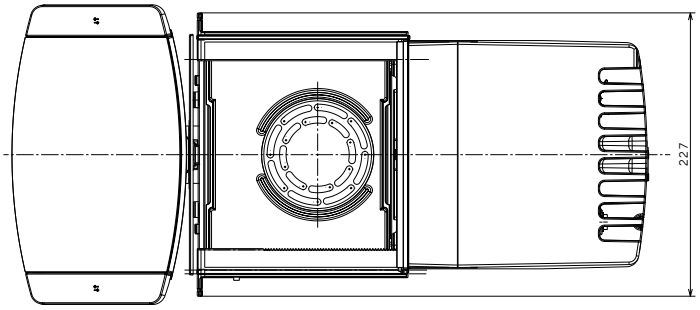
(Weighing modules 226S, 225S, 225P and 125S)





mit motorischem Innenwindschutz
with motorized inner Draftshild

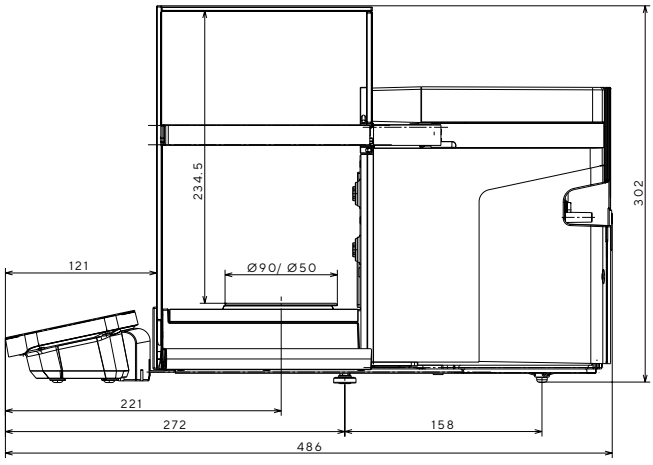


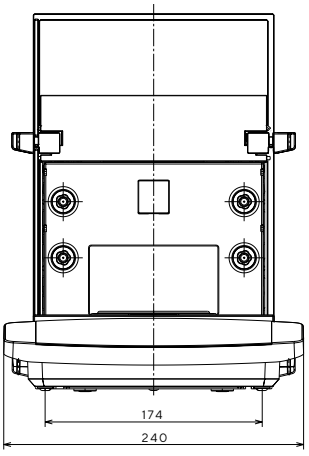


Balance Dimensions

Semi-Micro Balances (MCE Display) | All dimensions are given in millimeters

(Weighing modules 225S, 225P and 125S)





mit motorischem Innenwindschutz
with motorized inner Draftshild