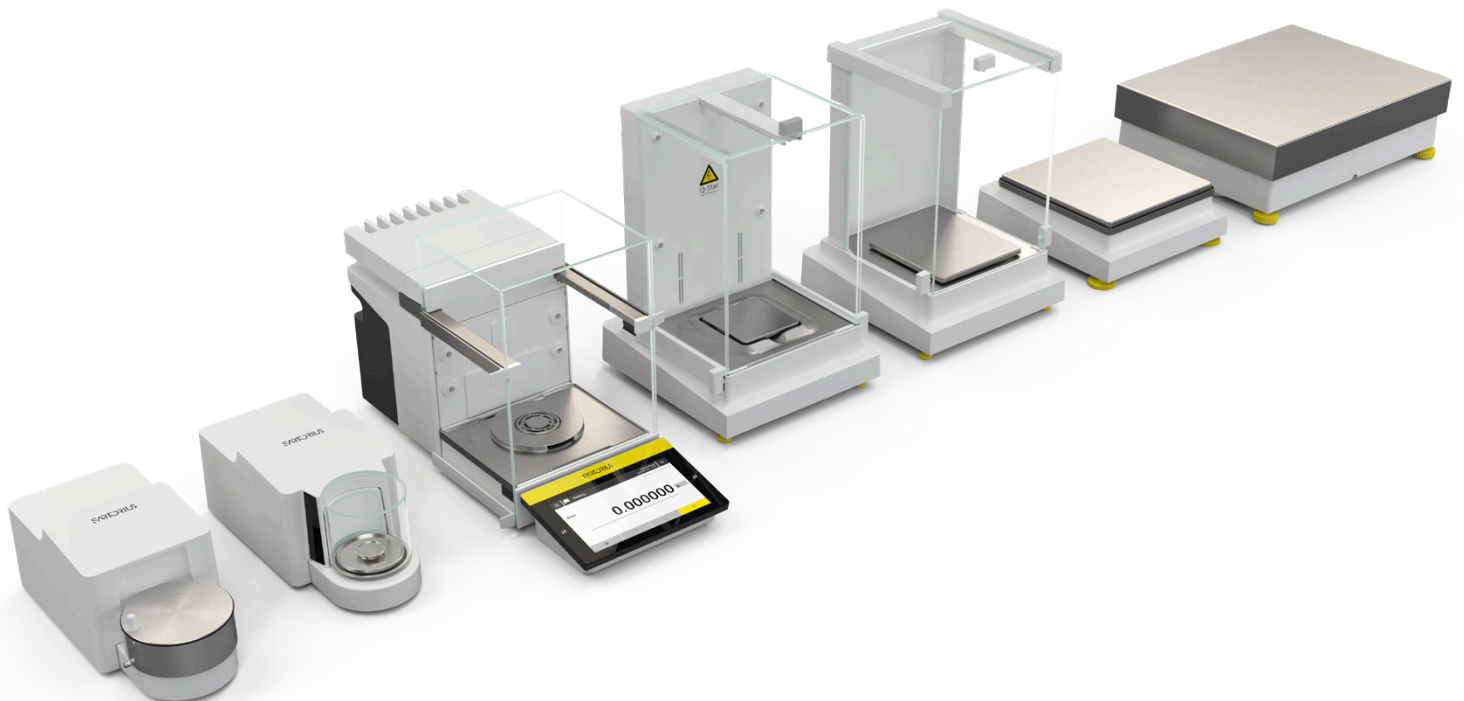


## Cubis® III

Balances Made to Connect to Your Lab



# Product Information

Cubis® III premium laboratory balances deliver precise, reliable weighing results for virtually any regulated lab application, with capacities from 2.1 g to 70 kg and readabilities from 0.1 µg to 1 g.

A flexible range of weighing modules, draft shields, and software options lets customers tailor the balances to their workflow, compliance, and integration needs.

Upgradeable hardware and software protect your investment and keep your solution ready for future requirements. Built for digital labs, Cubis® III enables secure, plug-and-play integration with LIMS, ELN, and other lab systems via standards such as OPC UA, LADS, and SiLA. This helps simplify onboarding of new balances, accelerates validation, and reduces integration costs, while providing a scalable foundation for automation.

As connectivity becomes essential to GxP operations, Cubis® III delivers real business value by strengthening data integrity, improving audit readiness, accelerating batch release, reducing deviations, and lowering costs. Cubis® III fits seamlessly into connected labs for a more efficient, integrated, future-ready workflow.



# Best-in-Class Weighing Performance, from Standalone Simplicity to Deep Integration

## Cubis® III – Standalone Optimized

### Best-in-class weighing performance with powerful standalone operation

- Precise, reliable weighing with greater process control
- Versatile documentation options that fits best, from print to fully digital records
- Simplifies secure access with built-in user management and fast RFID one-tap login
- RFID-based, one-tap login
- Ensures safe weighing with digital guidance for tasks such as cleaning and calibration

### Digital-Driven Performance

Top-tier accuracy and trusted reliability, ready to use out of the box.

### Designed for Non-Regulated Labs

Ideal for labs that demand precise and secure weighing – no compliance burden, no added complexity.

### Future-ready

Easily expandable with compliance features and advanced connectivity options whenever you need them.

## Cubis® III Max – Integration Optimized

### Best-in-class weighing performance built for connected, regulated laboratories

- Engineered for the most demanding regulated environments in pharma, medtech, and beyond.
- Comprehensive connectivity – from simple result transfer to full system integration
- Enables automation of complex workflows directly on the balance
- Built for seamless global deployment across sites with minimal IT effort

	Cubis® III	Cubis® III Max
<b>System Functions</b>		
Network Time Sync. (NTP)	X	X
(Automatic) Backup	X	X
Export of Audit Trail (Max only), Alibi Memory and configuration	X (no Audit Trail)	X
Support File Types for Report Export	PDF, CSV, TXT with MD5 checksum	PDF, CSV, TXT with MD5 checksum
Remote Access and Control via web browser	X	X
Failure protection in the event of network issues	X	X
Simple Software Update	X	X
<b>User Management</b>		
Local User Management	X	X
Configurable Role management	X	X
Configurable local Password & logout policies	X	X
Login with RFID	X (optional reader required)	X (optional reader required)
Network User Management via LDAP(S)		X
<b>Compliance</b>		
Audit Trail		X (500.000 local entries)
Electronic Signature		X
Advanced features to comply with USP, Ph.Eur., JP and ChP guidelines		X

	Cubis® III	Cubis®III Max
Measurement Uncertainty Display		X
Alibi Memory	X (500.000 local entries)	X (500.000 local entries)
<b>Weighing Performance</b>		
User Calibration	X	X
Cleaning Guidance	X	X
<b>QAPP Workflows (Check out our QAPP Guide for more details)</b>		
45+ Weighing Workflows	X	X
Standard Preparation		X
Tablet Checker acc. to Pharmacopoeia.		X
Average Weight Control acc. to 76/211/EEC		X
Average Weight Control F&B acc. to 76/211/EEC		X
Filterability Testing of Wine		X (France & Italy only)
Pipette Check Advanced acc. to DIN EN ISO 8655		X
Fogging Test acc. to DIN EN ISO 75201		X
Final Pharma Filling with gravimetric control of peristaltic pumps		X
MYCAP CCX Cell Passaging		X
Linkit AX		X
<b>Supported Connectivity Protocols</b>		
OPC UA Server	X	X
REST API	X	X
SBI   SICS Protocol	X	X
FTP(S) File Transfer	X (PDF/CSV/Text)	X (PDF/CSV/Text)
SMB (Windows File Share)	X (PDF/CSV/Text)	X (PDF/CSV/Text)
Network Time Protocol (NTP)	X	X
Metrohm Omnis Connector		X
MES/LIMS/SCADA triggered QAPP execution via Unit Operations		X

# Technical Specifications - Cubis® III Weighing Modules

## Ultra-Micro Balances 0.0001 mg

	Units	2.7S
Scale interval (d)	mg	0.0001
Maximum capacity (Max)	g	2.1
<b>Repeatability up to 5% load</b>		
Standard deviation of the load values, tolerance	mg	0.0002
Standard deviation of the load values, typical value	mg	0.00015
<b>Repeatability near Max</b>		
Standard deviation of the load values, tolerance	mg	0.00025
Standard deviation of the load values, typical value	mg	0.00018
<b>Linearity deviation</b>		
Tolerance	mg	0.0009
Typical value	mg	0.0007
<b>Deviation at eccentric loading, positions according to OIML R76</b>		
Test weight	g	1
Tolerance	mg	0.0007
Typical value	mg	0.0005
Sensitivity drift between +10° C and +30° C	ppm/K	1
<b>Tare maximum capacity: Less than 100% of maximum capacity</b>		
Accuracy class according to Directive 2014   31   EU		I
Verification scale interval (e) according to Directive 2014   31   EU	mg	1
Minimum load (Min) according to Directive 2014   31   EU	mg	0.01
<b>Minimum weight according to Pharmacopoeia (USP Chapter 41, PhEur Chapter 2.1.7, JP Chapter 9.62, ChP Guideline 9032)</b>		
Optimum minimum weight	mg	0.082
Typical minimum weight	mg	0.3
Typical stabilization time	s	7
Typical measurement time	s	10
<b>Recommended calibration weight</b>		
External test load	g	2
Accuracy class, according to OIML R111-1		E2
<b>isoCAL</b>		
Temperature change	K	1.5
Time span	h	12
<b>Dimensions</b>		
Weighing module (L×W×H)*	mm	340   345 × 139 × 129
Electronics module incl. display (L×W×H)	mm	340×240×61
Weighing pan size	mm	Ø 20
Filter weighing pan	mm	Ø 50
Weight, approx.*	kg	7.2   7.9

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

## Micro Balances 0.001 mg

	Units	10.6S	6.6S	3.6P
Scale interval (d)	mg	0.001	0.001	0.001 0.002 0.005
Maximum capacity (Max)	g	10.1	6.1	1.1 2.1 3.1
<b>Repeatability up to 5% load</b>				
Standard deviation of the load values, tolerance	mg	0.001	0.001	0.003
Standard deviation of the load values, typical value	mg	0.0004	0.0004	0.0004
<b>Repeatability near Max</b>				
Standard deviation of the load values, tolerance	mg	0.001	0.001	0.005
Standard deviation of the load values, typical value	mg	0.0006	0.0006	0.0006
<b>Linearity deviation</b>				
Tolerance	mg	0.004	0.004	0.004
Typical value	mg	0.003	0.003	0.003
<b>Deviation at eccentric loading, positions according to OIML R76</b>				
Test weight	g	5	2	1
Tolerance	mg	0.004	0.004	0.005
Typical value	mg	0.003	0.003	0.003
Sensitivity drift between +10° C and +30° C	ppm/K	1	1	1
<b>Tare maximum capacity: Less than 100% of maximum capacity</b>				
Accuracy class according to Directive 2014   31   EU		I	I	I
Verification scale interval (e) according to Directive 2014   31   EU	mg	1	1	1
Minimum load (Min) according to Directive 2014   31   EU	mg	0.1	0.1	0.1
<b>Minimum weight according to USP (United States Pharmacopeia), Chapter 41</b>				
Optimum minimum weight	mg	0.82	0.82	0.82
Typical minimum weight	mg	0.82	0.82	0.82
Typical stabilization time	s	3	3	3
Typical measurement time	s	6	6	6
<b>Recommended calibration weight</b>				
External test load	g	10	5	3
Accuracy class, according to OIML R111-1		E2	E2	E2
<b>isoCAL</b>				
Temperature change	K	1.5	1.5	1.5
Time span	h	12	12	12
<b>Dimensions</b>				
Weighing module (L×W×H)*	mm	340 x 139 x 129	340   345 x 139 x 129	340 x 139 x 129
Electronics module incl. display (L×W×H)	mm		340×240×61	
Weighing pan size	mm		Ø 30	
Filter weighing pan	mm		Ø 50	
Weight, approx.*	kg		7.2   7.9	

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

## High-Capacity Micro Balances 0.001 - 0.002 mg

	Units	26P	36S	36P	66S
Scale interval (d)	mg	0.001   0.01	0.001	0.001   0.01	0.001
Maximum capacity (Max)	g	5.1   22	32	10.1   32	61
<b>Repeatability up to 5% load</b>					
Standard deviation of the load values, tolerance	mg	0.002	0.0015	0.002	0.0015
Standard deviation of the load values, typical value	mg	0.0007	0.0007	0.0007	0.0007
<b>Repeatability near Max</b>					
Standard deviation of the load values, tolerance	mg	0.0007	0.0025	0.007	0.004
Standard deviation of the load values, typical value	mg	0.0005	0.0018	0.005	0.0025
<b>Linearity deviation</b>					
Tolerance	mg	0.015	0.012	0.015	0.02
Typical value	mg	0.006	0.005	0.006	0.005
<b>Deviation when load is off-center, positions according to OIML R76</b>					
Test weight	g	10	10	10	20
Tolerance	mg	0.02	0.015	0.02	0.02
Typical value	mg	0.01	0.006	0.008	0.01
Sensitivity drift between +10° C and +30° C	ppm/K	1	1	1	1
<b>Tare maximum capacity: Less than 100% of maximum capacity</b>					
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	0.1	0.1	0.1	0.1
<b>Minimum weight according to Pharmacopoeia (USP Chapter 41, PhEur Chapter 2.1.7, JP Chapter 9.62, ChP Guideline 9032)</b>					
Optimum minimum weight	mg	0.82	0.82	0.82	0.82
Typical minimum weight	mg	2.0	1.4	1.4	1.4
Typical stabilization time	s	3.5   2.5	3.5	3.5   2.5	3.5
Typical measurement time	s	10   6	10	10   6	10
<b>Recommended calibration weight</b>					
External test load	g	20	20	20	50
Accuracy class, according to OIML R111-1		E2	E2	E2	E2
<b>isoCAL</b>					
Temperature change	K	1.5	1.5	1.5	1.5
Time span	h	12	12	12	12
<b>Dimensions</b>					
Weighing module incl. display (L x W x H)*	mm	500 x 227 x 302			
Weighing pan size	mm	Ø 50			
Weight, approx.*	kg	14.3			

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

## High-Capacity Micro Balances 0.001 - 0.002 mg

	Units	66P	116S2
Scale interval (d)	mg	0.001   0.01	0.002
Maximum capacity (Max)	g	12   61	111
<b>Repeatability up to 5% load</b>			
Standard deviation of the load values, tolerance	mg	0.002	0.004
Standard deviation of the load values typical value	mg	0.0007	0.0025
<b>Repeatability near Max</b>			
Standard deviation of the load values, tolerance	mg	0.01	0.01
Standard deviation of the load values, typical value	mg	0.006	0.005
<b>Linearity deviation</b>			
Tolerance	mg	0.02	0.03
Typical value	mg	0.008	0.02
<b>Deviation when load is off-center, positions according to OIML R76</b>			
Test weight	g	20	50
Tolerance	mg	0.03	0.03
Typical value	mg	0.012	0.02
Sensitivity drift between +10° C and +30° C	ppm/K	1	1
<b>Tare maximum capacity: Less than 100% of maximum capacity</b>			
Accuracy class according to Directive 2014   31   EU		I	I
Verification scale interval (e) according to Directive 2014   31   EU	mg	1	1
Minimum load (Min) according to Directive 2014   31   EU	mg	0.1	0.2
<b>Minimum weight according to Pharmacopoeia (USP Chapter 41, PhEur Chapter 2.1.7, JP Chapter 9.62, ChP Guideline 9032)</b>			
Optimum minimum weight	mg	0.82	1.64
Typical minimum weight	mg	1.4	5.0
Typical stabilization time	s	3.5   2.5	3.5
Typical measurement time	s	10   6	8
<b>Recommended calibration weight</b>			
External test load	g	50	100
Accuracy class, according to OIML R111-1		E2	E2
<b>isoCAL</b>			
Temperature change	K	1.5	1.5
Time span	h	12	12
<b>Dimensions</b>			
Weighing module incl. display (L x W x H)	mm	500 x 227 x 302	
Weighing pan size	mm	Ø 50	
Weight, approx.	kg	14.3	

## Semi-Micro Balances 0.005 - 0.01 mg

	Units	226S5	225S	225P	125S	125P
Scale interval (d)	mg	0.005	0.01	0.01 0.1	0.01	0.01 0.1
Maximum capacity (Max)	g	220	220	120 220	120	60 120
<b>Repeatability up to 5% load</b>						
Standard deviation of the load values, tolerance	mg	0.01	0.015	0.015	0.015	0.015
Standard deviation of the load values, typical value	mg	0.004	0.0065	0.0065	0.0065	0.01
<b>Repeatability near Max</b>						
Standard deviation of the load values, tolerance	mg	0.025	0.025	0.04	0.025	0.06
Standard deviation of the load values, typical value	mg	0.015	0.015	0.02	0.015	0.02
<b>Linearity deviation</b>						
Tolerance	mg	0.07	0.07	0.1	0.07	0.15
Typical value	mg	0.03	0.03	0.03	0.03	0.1
<b>Deviation when load is off-center, positions according to OIML R76</b>						
Test weight	g	100	100	100	50	50
Tolerance	mg	0.12	0.15	0.2	0.12	0.2
Typical value	mg	0.04	0.05	0.06	0.04	0.1
Sensitivity drift between +10° C and +30° C	ppm/K	1	1	1	1	1
<b>Tare maximum capacity: Less than 100% of maximum capacity</b>						
Accuracy class according to Directive 2014   31   EU		I	I	I	I	I
Verification scale interval (e) according to Directive 2014   31   EU	mg	1	1	1	1	1
Minimum load (Min) according to Directive 2014   31   EU	mg	0.5	1	1	1	1
<b>Minimum weight according to Pharmacopoeia (USP Chapter 41, PhEur Chapter 2.1.7, JP Chapter 9.62, ChP Guideline 9032)</b>						
Optimum minimum weight	mg	4.1	8.2	8.2	8.2	8.2
Typical minimum weight	mg	8.0	13.0	13.0	13.0	13.0
Typical stabilization time	s	1.5	1.5	1.5	1.5	2
Typical measurement time	s	6	4	4	4	6
<b>Recommended calibration weight</b>						
External test load	g	200	200	200	100	100
Accuracy class, according to OIML R111-1		E2	E2	E2	E2	E2
<b>isoCAL</b>						
Temperature change	K	1.5	1.5	1.5	1.5	1.5
Time span	h	12	12	12	12	12
<b>Dimensions</b>						
Weighing module incl. display (except 125P) (L×W×H)*	mm	500 x 227 x 302			450   404×240×373	
Electronics module (L×W×H)	mm	-	-	-	-	211×240×56
Weighing pan size	mm	Ø 50	Ø 90		85×85	
Weight, approx.*	kg	14.3			10.2   11.7	

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

\*\* Module 125P is based on Cubis® II and has different dimensions than other 5-digit balances (please see Balance Dimensions)

## Analytical Balances 0.005 - 0.1 mg

	Units	225S5	524S	324S	224S	124S
Scale interval (d)	mg	0.05	0.1	0.1	0.1	0.1
Maximum capacity (Max)	g	220	520	320	220	120
<b>Repeatability up to 5% load</b>						
Standard deviation of the load values, tolerance	mg	0.04	0.08	0.08	0.07	0.1
Standard deviation of the load values, typical value	mg	0.02	0.04	0.04	0.05	0.05
<b>Repeatability near Max</b>						
Standard deviation of the load values, tolerance	mg	0.06	0.1	0.1	0.07	0.1
Standard deviation of the load values, typical value	mg	0.025	0.05	0.05	0.05	0.05
<b>Linearity Deviation</b>						
Tolerance	mg	0.1	0.4	0.3	0.2	0.2
Typical value	mg	0.05	0.2	0.2	0.13	0.13
<b>Deviation when load is off-center, positions according to OIML R76</b>						
Test weight	g	100	200	200	100	50
Tolerance	mg	0.2	0.3	0.3	0.2	0.2
Typical value	mg	0.1	0.2	0.2	0.12	0.12
Sensitivity drift between +10° C and +30° C	ppm/K	1	1	1	1	1
<b>Tare maximum capacity: Less than 100% of maximum capacity</b>						
Accuracy class according to Directive 2014   31   EU		I	I	I	I	I
Verification scale interval (e) according to Directive 2014   31   EU	mg	1	1	1	1	1
Minimum load (Min) according to Directive 2014   31   EU	mg	1	10	10	10	10
<b>Minimum weight according to Pharmacopoeia (USP Chapter 41, PhEur Chapter 2.1.7, JP Chapter 9.62, ChP Guideline 9032)</b>						
Optimum minimum weight	mg	41	82	82	82	82
Typical minimum weight	mg	41	82	82	100	100
Typical stabilization time	s	1.5	1	1	1	1
Typical measurement time	s	4	3	3	3	3
<b>Recommended calibration weight</b>						
External test load	g	200	500	300	200	100
Accuracy class, according to OIML R111-1		E2	E2	E2	E2	E2
<b>isoCAL</b>						
Temperature change	K	1.5	1.5	1.5	1.5	1.5
Time span	h	12	6	12	12	12
<b>Dimensions</b>						
Weighing module incl. display (L x W x H)*	mm	500 x 227 x 302	402 x 240 x 373			
Weighing pan size	mm	Ø 90	85 x 85			
Weight, approx.*	kg	14.3	9.0   10.8			

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

## Precision Balances 1 - 100 mg

	Units	5203S	3203S	2203S	1203S
Scale interval (d)	mg	1	1	1	1
Maximum capacity (Max)	g	5200	3200	2200	1200
<b>Repeatability up to 5% load</b>					
Standard deviation of the load values, tolerance	mg	1	1	0.7	0.7
Standard deviation of the load values, typical value	mg	0.5	0.5	0.5	0.5
<b>Repeatability near Max</b>					
Standard deviation of the load values, tolerance	mg	1	1	1	0.7
Standard deviation of the load values, typical value	mg	0.6	0.6	0.6	0.6
<b>Linearity Deviation</b>					
Tolerance	mg	5	5	3	2
Typical value	mg	2	2	2	1
<b>Deviation when load is off-center, positions according to OIML R76</b>					
Test weight	g	2000	1000	1000	500
Tolerance	mg	2	2	2	2
Typical value	mg	1	1	1	1
Sensitivity drift between +10° C and +30° C	ppm/K	1	1	1	1.5
<b>Tare maximum capacity: Less than 100% of maximum capacity</b>					
Accuracy class according to Directive 2014   31   EU		I	I	I	I
Verification scale interval (e) according to Directive 2014   31   EU	mg	10	10	10	10
Minimum load (Min) according to Directive 2014   31   EU	mg	100	100	100	100
<b>Minimum weight according to Pharmacopoeia (USP Chapter 41, PhEur Chapter 2.1.7, JP Chapter 9.62, ChP Guideline 9032)</b>					
Optimum minimum weight	mg	820	820	820	820
Typical minimum weight	mg	1000	1000	1000	1000
Typical stabilization time	s	1	1	1	1
Typical measurement time	s	2	2	1.5	1.5
<b>Recommended calibration weight</b>					
External test load	g	5000	3000	2000	1000
Accuracy class, according to OIML R111-1		E2	E2	E2	E2
<b>isoCAL</b>					
Temperature change	K	1.5	1.5	1.5	1.5
Time span	h	6	6	12	12
<b>Dimensions</b>					
Weighing module incl. display (L × W × H)*	mm	402 × 240 × 122   366   372			
Weighing pan size	mm	140 × 140			
Weight, approx.*	kg	6.7   10.2   11.0			

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

## Precision Balances 1 -100 mg

	Units	623S	323S	14202S
Scale interval (d)	mg	1	1	10
Maximum capacity (Max)	g	620	320	14200
<b>Repeatability up to 5% load</b>				
Standard deviation of the load values, tolerance	mg	0.7	0.7	10
Standard deviation of the load values, typical value	mg	0.4	0.4	4
<b>Repeatability near Max</b>				
Standard deviation of the load values, tolerance	mg	0.7	0.7	10
Standard deviation of the load values, typical value	mg	0.5	0.5	5
<b>Linearity deviation</b>				
Tolerance	mg	2	2	30
Typical value	mg	0.6	0.6	10
<b>Deviation when load is off-center, positions according to OIML R76</b>				
Test weight	g	200	200	5000
Tolerance	mg	2	2	20
Typical value	mg	1	1	10
Sensitivity drift between +10° C and +30° C	ppm/K	2	2	1.5
<b>Tare maximum capacity: Less than 100% of maximum capacity</b>				
Accuracy class according to Directive 2014   31   EU		II	II	I
Verification scale interval (e) according to Directive 2014   31   EU	mg	10	10	100
Minimum load (Min) according to Directive 2014   31   EU	mg	20	20	1000
<b>Minimum weight according to Pharmacopoeia (USP Chapter 41, PhEur Chapter 2.1.7, JP Chapter 9.62, ChP Guideline 9032)</b>				
Optimum minimum weight	mg	820	820	8200
Typical minimum weight	mg	820	820	8200
Typical stabilization time	s	0.8	0.8	0.8
Typical measurement time	s	1	1	1.5
<b>Recommended calibration weight</b>				
External test load	g	500	200	14000
Accuracy class, according to OIML R111-1		E2	E2	E2
<b>isoCAL</b>				
Temperature change	K	2	2	1.5
Time span	h	12	12	6
<b>Dimensions</b>				
Weighing module incl. display (L×W×H)*	mm	402×240×122   366   372		402×240×95
Weighing pan size	mm	140×140		206×206
Weight, approx.*	kg	6.7   10.2   11.0		6.0

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

## Precision Balances 1 - 100 mg

	Units	10202S	8202S	6202S	6202P	4202S	2202S
Scale interval (d)	mg	10	10	10	10 20 50	10	10
Maximum capacity (Max)	g	10200	8200	6200	1500  3000 6200	4200	2200
<b>Repeatability up to 5% load</b>							
Standard deviation of the load values, tolerance	mg	7	7	7	7	7	7
Standard deviation of the load values, typical value	mg	4	4	4	4	4	4
<b>Repeatability near Max</b>							
Standard deviation of the load values, tolerance	mg	7	7	7	40	7	7
Standard deviation of the load values, typical value	mg	5	4	4	15	4	4
<b>Linearity deviation</b>							
Tolerance	mg	20	20	20	50	20	20
Typical value	mg	6	6	6	20	6	6
<b>Deviation when load is off-center, positions according to OIML R76</b>							
Test weight	g	5000	5000	2000	2000	2000	1000
Tolerance	mg	20	30	20	30	30	20
Typical value	mg	10	10	10	30	10	10
Sensitivity drift between +10° C and +30° C	ppm/K	1.5	2	2	2	2	2
<b>Tare maximum capacity: Less than 100% of maximum capacity</b>							
Accuracy class according to Directive 2014   31   EU		I	II	II	II	II	II
Verification scale interval (e) according to Directive 2014   31   EU	mg	100	100	100	100	100	100
Minimum load (Min) according to Directive 2014   31   EU	mg	1000	500	500	500	500	500
<b>Minimum weight according to Pharmacopoeia (USP Chapter 41, PhEur Chapter 2.1.7, JP Chapter 9.62, ChP Guideline 9032)</b>							
Optimum minimum weight	mg	8200	8200	8200	8200	8200	8200
Typical minimum weight	mg	8200	8200	8200	8200	8200	8200
Typical stabilization time	s	0.8	1	1	1	1	0.8
Typical measurement time	s	1.5	1.5	1.5	1.5	1	1
<b>Recommended calibration weight</b>							
External test load	g	10000	7000	5000	5000	3000	1500
Accuracy class, according to OIML R111-1		E2	E2	E2	E2	E2	E2
<b>isoCAL</b>							
Temperature change	K	1.5	2	2	2	2	2
Time span	h	6	12	12	12	12	12
<b>Dimensions</b>							
Weighing module incl. display (L × W × H)*	mm	402 x 240 x 95				402 × 240 × 95	
Weighing pan size	mm	206 x 206				206 × 206	
Weight, approx.*	kg	6.0				6.0	

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

## Precision Balances 1 - 100 mg

	Units	1202S	12201S	8201S	5201S
Scale interval (d)	mg	10	100	100	100
Maximum capacity (Max)	g	1200	12200	8200	5200
<b>Repeatability up to 5% load</b>					
Standard deviation of the load values, tolerance	mg	7	50	50	50
Standard deviation of the load values, typical value	mg	4	20	20	20
<b>Repeatability near Max</b>					
Standard deviation of the load values, tolerance	mg	7	50	50	50
Standard deviation of the load values, typical value	mg	4	20	20	20
<b>Linearity deviation</b>					
Tolerance	mg	20	100	100	100
Typical value	mg	6	30	30	20
<b>Deviation when load is off-center, positions according to OIML R76</b>					
Test weight	g	500	5000	5000	2000
Tolerance	mg	20	200	200	200
Typical value	mg	10	100	100	100
Sensitivity drift between +10° C and +30° C	ppm/K	2	4	4	4
<b>Tare maximum capacity: Less than 100% of maximum capacity</b>					
Accuracy class according to Directive 2014   31   EU		II	II	II	II
Verification scale interval (e) according to Directive 2014   31   EU	mg	100	1000	1000	1000
Minimum load (Min) according to Directive 2014   31   EU	mg	500	5000	5000	5000
<b>Minimum weight according to Pharmacopoeia (USP Chapter 41, PhEur Chapter 2.1.7, JP Chapter 9.62, ChP Guideline 9032)</b>					
Optimum minimum weight	mg	8200	82000	82000	82000
Typical minimum weight	mg	8200	82000	82000	82000
Typical stabilization time	s	0.8	0.8	0.8	0.8
Typical measurement time	s	1	1	1	1
<b>Recommended calibration weight</b>					
External test load	g	700	12000	8000	5000
Accuracy class, according to OIML R111-1		E2	F1	F1	F1
<b>isoCAL</b>					
Temperature change	K	2	4	4	4
Time span	h	12	12	12	12
<b>Dimensions</b>					
Weighing module incl. display (L×W×H)*	mm	402×240×95			
Weighing pan size	mm	206×206			
Weight, approx.*	kg	6.0			

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

## High Capacity Balances 100 - 1000 mg

	Units	70201S	50201S	36201S	36201P
Scale interval (d)	mg	100	100	100	100   1000
Maximum capacity (Max)	g	70200	50200	36200	10200   36200
<b>Repeatability up to 5% load</b>					
Standard deviation of the load values, tolerance	mg	100	100	100	100
Standard deviation of the load values, typical value	mg	40	40	20	20
<b>Repeatability near Max</b>					
Standard deviation of the load values, tolerance	mg	100	100	100	100
Standard deviation of the load values, typical value	mg	40	40	20	20
<b>Linearity deviation</b>					
Tolerance	mg	500	500	200	200
Typical value	mg	150	150	100	100
<b>Deviation when load is off-center, positions according to OIML R76</b>					
Test weight	g	20000	20000	10000	10000
Tolerance	mg	500	500	300	300
Typical value	mg	300	300	200	200
Sensitivity drift between +10° C and +30° C	ppm/K	2	2	2	2
<b>Tare maximum capacity: Less than 100% of maximum capacity</b>					
Accuracy class according to Directive 2014   31   EU		II	II	II	II
Verification scale interval (e) according to Directive 2014   31   EU	mg	1000	1000	1000	1000
Minimum load (Min) according to Directive 2014   31   EU	mg	5000	5000	5000	5000
<b>Minimum weight according to Pharmacopoeia (USP Chapter 41, PhEur Chapter 2.1.7, JP Chapter 9.62, ChP Guideline 9032)</b>					
Optimum minimum weight	mg	82000	82000	82000	82000
Typical minimum weight	mg	82000	82000	82000	82000
Typical stabilization time	s	1.5	1.5	1.5	1.5
Typical measurement time	s	1.5	1.5	2	2
<b>Recommended calibration weight</b>					
External test load	g	70000	50000	30000	30000
Accuracy class, according to OIML R111-1		F1	F1	F1	F1
<b>isoCAL</b>					
Temperature change	K	2	2	4	4
Time span	h	12	12	12	12
<b>Dimensions</b>					
Weighing module incl. display(L×W×H)*	mm	453×400×126			
Weighing pan size	mm	400×300			
Weight, approx.*	kg	15.8			

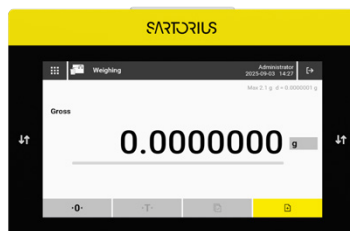
\* depending upon weighing pan size, filter weighing pan and draft shield

## High Capacity Balances 100 - 1000 mg

	Units	20201S	11201S	70200S	36200S
Scale interval (d)	mg	100	100	1000	1000
Maximum capacity (Max)	g	20200	11200	70200	36200
<b>Repeatability up to 5% load</b>					
Standard deviation of the load values, tolerance	mg	100	100	500	500
Standard deviation of the load values, typical value	mg	20	20	200	200
<b>Repeatability near Max</b>					
Standard deviation of the load values, tolerance	mg	100	100	500	500
Standard deviation of the load values, typical value	mg	20	20	200	200
<b>Linearity Deviation</b>					
Tolerance	mg	200	200	1000	1000
Typical value	mg	60	60	200	200
<b>Deviation when load is off-center, positions according to OIML R76</b>					
Test weight	g	5000	5000	20000	10000
Tolerance	mg	300	300	1000	1000
Typical value	mg	200	200	600	500
Sensitivity drift between +10° C and +30° C	ppm/K	2	2	3	3
<b>Tare maximum capacity: Less than 100% of maximum capacity</b>					
Accuracy class according to Directive 2014   31   EU		II	II	II	II
Verification scale interval (e) according to Directive 2014   31   EU	mg	1000	1000	10000	1000
Minimum load (Min) according to Directive 2014   31   EU	mg	5000	5000	50000	50000
<b>Minimum weight according to Pharmacopoeia (USP Chapter 41, PhEur Chapter 2.1.7, JP Chapter 9.62, ChP Guideline 9032)</b>					
Optimum minimum weight	mg	82000	82000	820000	820000
Typical minimum weight	mg	82000	82000	820000	820000
Typical stabilization time	s	1.5	1.5	1	1
Typical measurement time	s	2	2	1.2	1.2
<b>Recommended calibration weight</b>					
External test load	g	20000	10000	70000	30000
Accuracy class, according to OIML R111-1		F1	F1	F1	F1
<b>isoCAL</b>					
Temperature change	K	4	4	2	4
Time span	h	12	12	12	12
<b>Dimensions</b>					
Weighing module (L×W×H)*	mm	453×400×126			
Weighing pan size	mm	400×300			
Weight, approx.*	kg	15.8			

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

# Technical Specifications - Cubis® III



## Display

Display Type	High-resolution (1024 x 600 px) 7" color touch TFT display in 16:9 format with intuitive user interface and illuminated touch sensors for operating automatic draft shields.
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## Electrical data

		Ultra-micro, micro, analytical, precision and high capacity balances	High-capacity micro and semi-micro balances
	Units	Value	Value
<b>Installation Site</b>			
AC voltage	V	100–240 (±10%)	100–240 (±10%)
Frequency	Hz	50–60 (±5%)	47–63
Current consumption, maximum	A	1.0	0.8
Overvoltage category according to IEC 60664-1		II	II
Pollution level according to IEC 61010-1   IEC 60664-1		2	2
<b>Device power supply (secondary)</b>			
Max. DC voltage	V	14.25–15.75 at 2 A output current	15 ± 15% at 4.3 A output current
<b>Power Consumption</b>			
Power Maximum	W	30	64.5
Normal weighing mode	W	5.0	8.0
Standby mode	W	5.0	6.9
Deep standby mode	W	3.2	6.0
Power supply cable		According to IEC 60320-1/C14: Country-specific, 3-pin, two-sided plug	According to IEC 60320-1 C13   C14, with IEC plug, 3-pin, and with country-specific power plug
<b>Safety of Electrical Equipment</b>	According to EN 61010-1 / IEC 61010-1 Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General Requirements		
<b>Electromagnetic Compatibility</b>			
Interference Immunity	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.		

## Ambient conditions

Standard laboratory rooms

Installation site according to IEC 60259-1, maximum altitude above sea level	m	3000	3000
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For indoor use only

Temperature

In operation	°C	+5 – +40	+10 – +30
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In operation for conformity-assessed devices: see information on the device's ID plate

During storage and transport	°C	-20 – +60	
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Relative humidity

At temperatures of up to 31° C	%	80	80
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Then linear decrease from 80% at 31° C to 50% at 40° C

No heat from heating systems or direct sunlight, drafts from open windows, AC systems, or doors, vibrations, "heavy traffic" areas (personnel) electromagnetic fields, dry air

## Interfaces

### Specifications for the COM-RS232 Interface

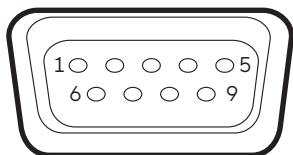
Type of interface: Serial interface

Interface operation: Full duplex

Level: RS232

Connection: D-sub connector, 9-pin

Pin assignment:



Pin 1: Not assigned

Pin 2: Data output (TxD)

Pin 3: Data input (RxD)

Pin 4: Not assigned

Pin 5: Internal ground

Pin 6: Not assigned

Pin 7: Clear to Send (CTS)

Pin 8: Request to Send (RTS)

Pin 9: Not assigned

### 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\*

\* RS232 adapter cable YCC-USB-C-D09M available for high-capacity micro and semi-micro balance

## Materials

Housing: Plastic PBT | PA, Optiwhite float glass, Stainless steel 1.4401 | 1.4404, Die-cast aluminum

Control unit: Plastic PA, float glass

Weighing compartment: Titanium 3.7035 | 3.7165, Stainless steel 1.4401 | 1.4404, zinc oxide, brass

## Integrated Clock

Maximum deviation per month (RTC): 30 s

## Backup Battery

Lithium battery: type CR2032

Service life at room temperature, minimum: 10 Years

## Software Packages

Code	Item
QP99	Complete Software Package

## Draft Shields

Code	Item
0	Flat, stainless steel weight pan with no draft shield for weighing modules
A	Automatic, glass motorized draft shield with learning capability for user-friendly operation and easy customization to the changing requirements of different applications
I	Identical to draft shield version A, but also includes an integrated ionizer to eliminate interfering electrostatic charges on samples and sample containers
F	Manual stainless steel draft shield for weighing filters with diameters of up to 50 mm (75 mm and 90 mm pans optional)
R	Flat, stainless steel weighing pan draft shield (removable, with no glass components) for all precision balances
U	Manual glass draft shield chamber, with smooth-action doors that open wide and provide unimpeded access to the weighing chamber without interfering braces. At high-capacity & semi-micro balances with licensable draft shield motors or ionizer.

## Draft Shield Inner Dimensions

Draft Shield Version	Depth (mm)	Height (mm)	Width (mm)
F	-	33	Ø 109
A (micro)	-	67	Ø 80
U, A and I (high-capacity micro & semi-micro)	159	234	185
U, A* and I (analytical & *precision)	154	261	192
U (precision)	191	253	193
R	154	27.5	154

## Approvals

Code	Item
S0	Standard version non-verified, all units (European version with cables for EU, CH, IT, UK)
S1	Standard version non-verified, metric units only
S2	Standard version non-verified, all units (North American version with US cable)
S3	Standard version non-verified, all units (International version with cables for AR, IL, AU)
EU	Verified balance with EC Type Approval Certificate (for EU except France)
FR	Verified balance with EC Type Approval Certificate for France only
CN	Balance with Type Approval Certificate for China
BR	Balance with Type Approval Certificate for Brazil
IN	Balance with Type Approval Certificate for India
JP	Balance with Type Approval Certificate for Japan

## Accessories

Printers and Communication	Quantity	Cat. No.
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 (Available in the EU only)	1	YWLAN01MS
WIFI Nano Router (Available in the 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
<b>Self-adhesive labels for YDP30</b>		
58 mm × 100 mm	350	69Y03094
58 mm × 76 mm	500	69Y03093
58 mm × 30 mm	1000	69Y03092
<b>Displays and Input   Output Elements</b>		
Motion sensor with USB connection cable	1	YHS02USB
Display stand for weigh cells with scale interval of 100 mg   1 g and weighing capacity > 20 kg for raising the operating unit	1	YDH04CUB
Display stand for weigh cells with scale interval of 10 mg   100 mg for raising the operating unit	1	YDH03CUB
Barcode and QR Reader with USB-A connector	1	YBR05
Foot switch for draft shield, tara, print	1	YFS02
RFID Reader with USB-A connector	1	YRFID01

## Accessories (continued)

Hardware for Pipette Calibration (Analytical Balances)	Quantity	Cat. No.
Pipette calibration kit (hardware). Consists of moisture trap and all required adapters	1	YCP04MS
<b>Density Determination Kits</b>		
Density determination kit for solids and liquids for 0.1 and 0.01 mg weighing modules	1	YDK03MS
Density determination kit for solids and liquids for 1 mg weighing modules	1	YDK04MS
<b>Filter Pans, Ionizer and Weighing Scoops</b>		
Grid pan for model with a scale interval of 10 mg or 100 mg for weighing in laboratory hoods, safety weighing cabinets and workbenches, reduced wind attack surface of the weighing pan, replaces standard pan	1	YWP07MS
Anti-static weighing pan, 100 mm diameter, for weighing module for semi-micro balance and analytical balances with 0.1 mg or 0.01 mg scale interval	1	YWP04MS
Filter weighing pan made of titanium, diameter 52 mm, for ultra-micro and micro balances only together with F draft shield	1	YSH34
Filter weighing pan made of titanium, diameter 75 mm, for ultra-micro balance or micro balance models only together with F draft shield	1	YSH35

Safe-lock Tube Holder for reaction tubes up to 2 mL volume, for ultra-micro or micro balances only together with draft shield F	1	YSH13
Safe-lock Tube Holder for reaction tubes, up to 2 mL volume, for analytical balances	1	YSH15
Safe-lock Tube Holder for bigger reaction tubes up to 5 mL volume, for analytical balances	1	YSH19
Vial Holder for conical -, centrifuge-, round bottom- and test tubes up to 40 mL volume, for analytical balances	1	YSH23
Holder for titration vessels, round bottom flasks and test tubes with diameter up to 50 mm, for analytical balances	1	YSH37
Filter weighing pan made of titanium, diameter 90 mm, for ultra-micro balance or micro balance models only together with F draft shield	1	YSH36
Ionizer with U-shaped electrode for 115 V	1	YIB02-115V
Ionizer with U-shaped electrode for 230 V	1	YIB02-230V
Compact U-shaped ionizer for 230 V/115 V	1	YIB03-C
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 × W 32 mm × H 8 mm	1	641214

## Accessories (continued)












Other Accessories	Quantity	Cat. No.
Display cable, 3 m, for separate installation of CUB display and weighing unit, installation by Sartorius Service or at the factory	1	YCC01-CUB-2
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
Ethernet extension cable, 1 m	1	YCC-RJ45-CAT7
RS232C connection cable, 9 pin male to 9 pin female, 1.5 m	1	YCC-D09MF
USB connection cable 3 m, USB-B to USB-A, to connect balances to a computer	1	69MS0099
Below-balance weighing hook for precision balances with scale interval of 100 mg   1 g and weighing capacity > 20 kg, not for verified models	1	69EA0040
Pipette calibration set micro balances	1	YCP08MC
Signal light	1	VF4763
Connection cable for eBox 1.2 m   2.5 m	1	VF4755
Extension cable for climate tower 0.8 m	1	VF4756
Extension cable for motion sensor 0.8 m	1	VF4757
Connection cable for fermenter	1	VF4758
RS232 analog converter	1	VF4759
<b>Weighing Tables</b>		
Made from synthetic stone, with vibration dampening	1	YWT03
Made from wood with synthetic stone	1	YWT09
Wall console	1	YWT04
<b>Climate Modules</b>		
Climate module, uncalibrated, for draft shield A and user interface MCA	1	YCM20MC
Calibration of a climate module YCM20MC with DAkkS calibration certificate	1	YCM20DAkkS
Climate module with DAkkS calibration certificate for draft shield A and user interface MCA	1	YCM20MC-DAkkS
Tower for climate module, for mounting YCM20MC; incl. climate module YCM20MC; can be ported to all Cubis® III weighing modules with user interface MCA	1	YCM20MC-TOWER

**Accessories for semi-micro and high-capacity micro balances**  
or weighing modules 26P, 36S, 36P, 66S, 66P, 116S2, 226S5, 225S, 225P, 125S and 225S5

Hardware options*	Quantity	Cat. No.
Ionizer & motorized draft shield license	1	QP10
Ionizer licence	1	QAPP1001
Motorized draft shield license	1	QAPP1002
<b>Inner Draft Shield</b>		
Motorized	1	YDS125A
Manual	1	YDS125U
Glass base, for height reduction of weighing compartment	1	YDSHR
<b>Outer Draft Shield</b>		
Left door outer draftshield	1	YCCDSL
Right door outer draftshield	1	YCCDSR
Cover slide outer draftshield	1	YCCDSU
Front panel outer draftshield	1	YCCDSF
<b>Displays and Input   Output Elements</b>		
Motion sensor with USB connection cable	1	YHS02USB
<b>Density Determination Kit</b>		
Density determination set for solids and liquids (for weighing modules 116S2, 125S, 225S, 225P, 226S5 and 225S5)	1	YDK03MC
<b>Hardware for Pipette Calibration</b>		
Pipette calibration kit. Consists of moisture trap and all required adapters	1	YCP07MC
Click-in pipette calibration module	1	YCP01MPS
<b>Titanium Weighing Pans &amp; Sample Holders</b>		
90 mm weighing pan, slotted	1	YWP10-3
50 mm weighing pan, slotted, with protective plate for 50 mm	1	YWP09-3
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
<b>Other Accessories</b>		
Connection cable for operating display, length 3 m	1	YCC01-CUB-3
Dust cover	1	6960MS09
Cleaning Kit	1	YCK01MC
Infusion pump testing conversion kit ultra-high resolution	1	YIP-3
Underfloor weighing hook	1	69MS0307
Power supply 60W	1	69MS0320

\*After purchase licensing of hardware options for high-capacity micro and semi-micro balances with MCA Display only

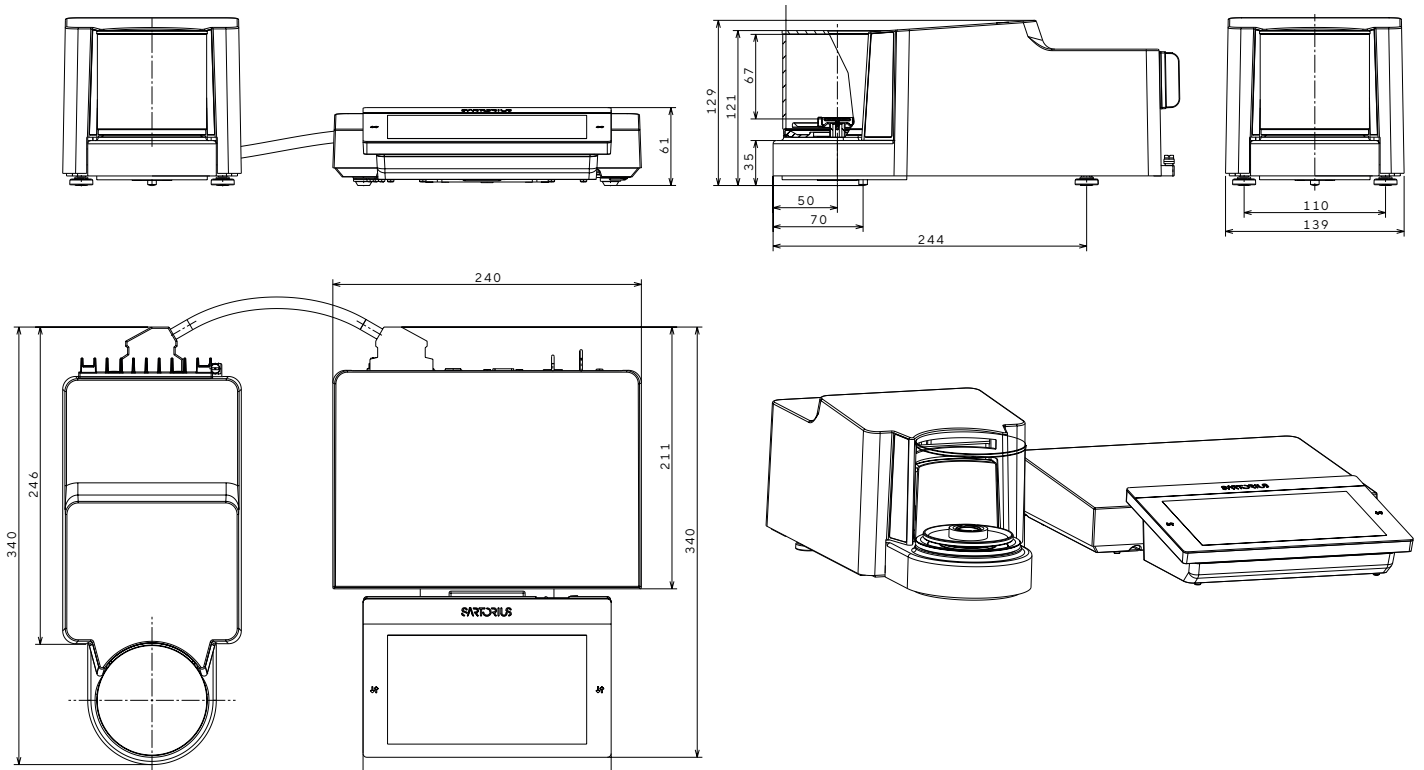
## Accessories (continued)

Sample Holders Made of Titanium		Quantity	Cat. No.	Balance type
Adjustable sample holder for vessels of up to 50 mL		1	YSH02-3	High capacity micro and semi-micro
For coronary stents (up to 38 mm)		1	YSH12-3	High capacity micro and semi-micro
			YSH10	Ultra-micro and micro
For save-lock tubes, 1.5 mL – 2 mL		1	YSH14-3	High capacity micro and semi-micro
			YSH13	Ultra-micro and micro
			YSH15	Analytical and weighing module 125P
For save-lock tubes up to 5 mL		1	YSH18-3	High capacity micro and semi-micro
			YSH19	Analytical and weighing module 125P
For vials		1	YSH22-3	High capacity micro and semi-micro
			YSH23	Analytical and weighing module 125P
For weighing boats		1	YSH26-3	High capacity micro and semi-micro
			YSH26	Analytical and weighing module 125P
For filters, 150 mm diameter		1	YSH30-3	High capacity micro and semi-micro
			YSH30	Analytical and weighing module 125P
For filters up to 75 mm		1	YSH35-3	High capacity micro and semi-micro
			YSH35	Ultra-micro and micro
For filters up to 50 mm			YSH34	Ultra-micro and micro
For filters up to 90 mm			YSH34	Ultra-micro and micro
For titration vessels and round bottom flasks		1	YSH47-3	High capacity micro and semi-micro
				Analytical and weighing module 125P
For syringes, vertical		1	YSH46-3	High capacity micro and semi-micro
			YSH46	Analytical and weighing module 125P

# Balance Dimensions

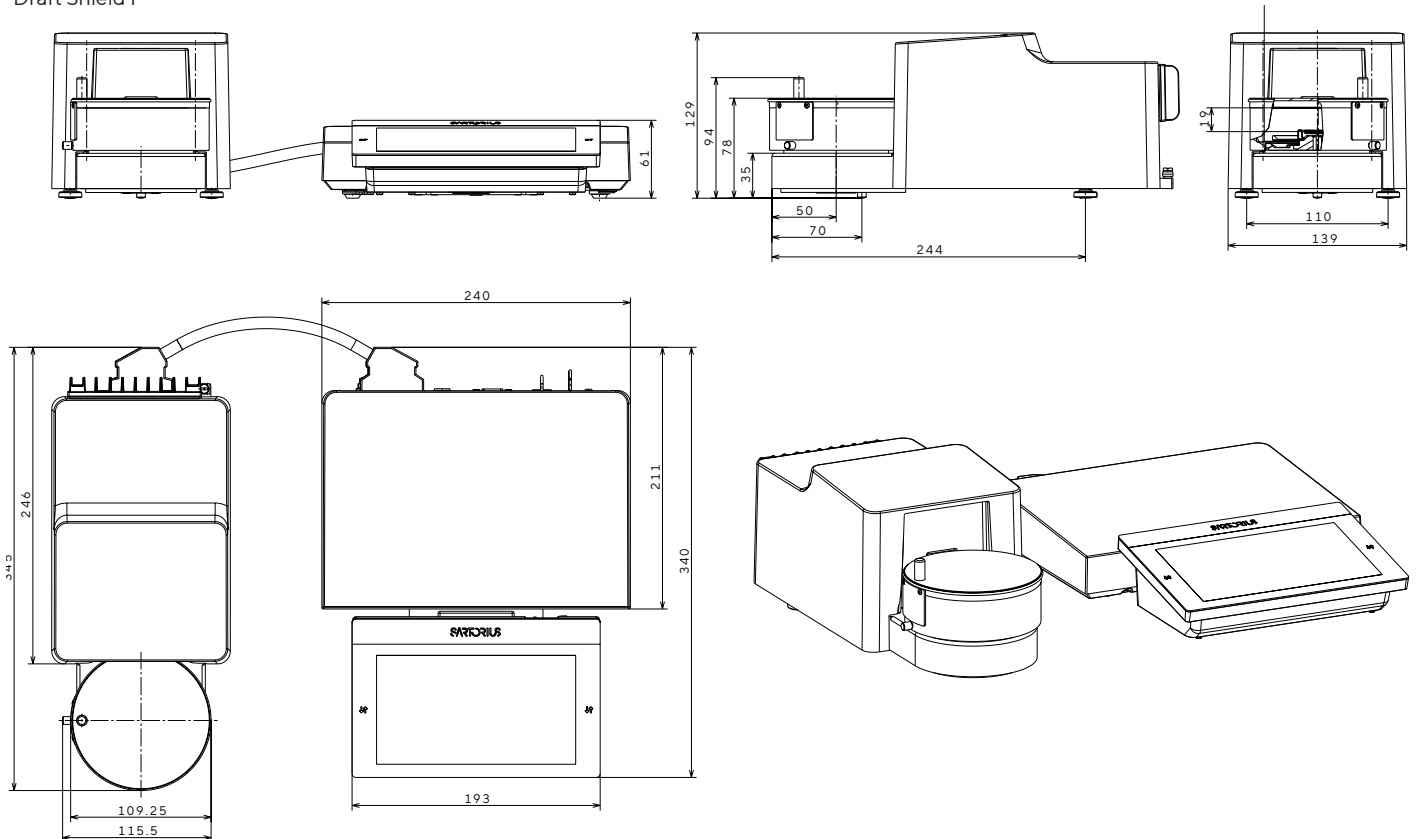
**Ultra-Micro and Micro Balance** | All dimensions are given in millimeters

Draft Shield A



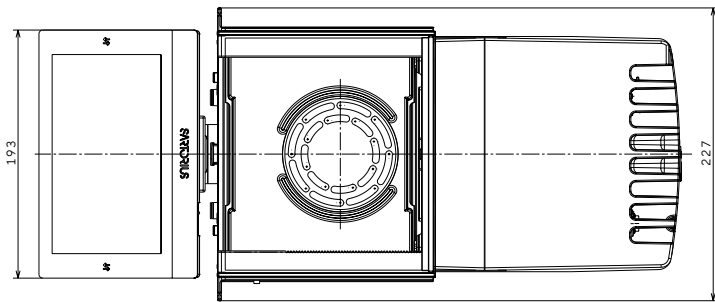
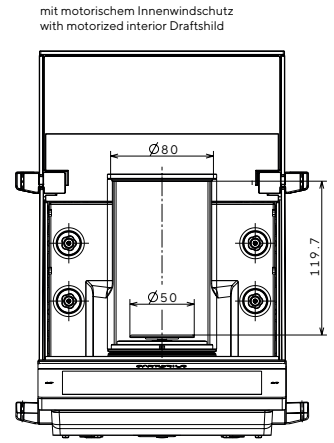
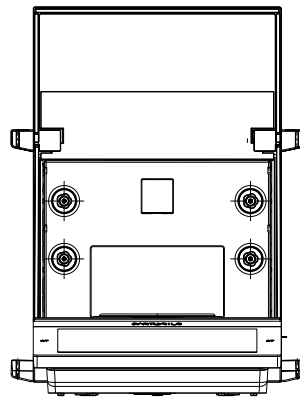
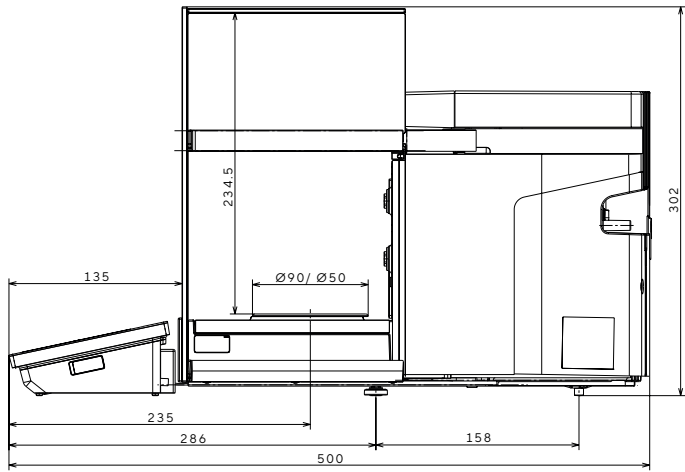
**Ultra-Micro and Micro Filter Balance** | All dimensions are given in millimeters

Draft Shield F



**High Capacity and Semi-Micro Balances** | All dimensions are given in millimeters  
 Weighing modules 26P, 36S, 36P, 66S, 66P, 116S2, 226S5, 225S, 225P, 125S and 225S5

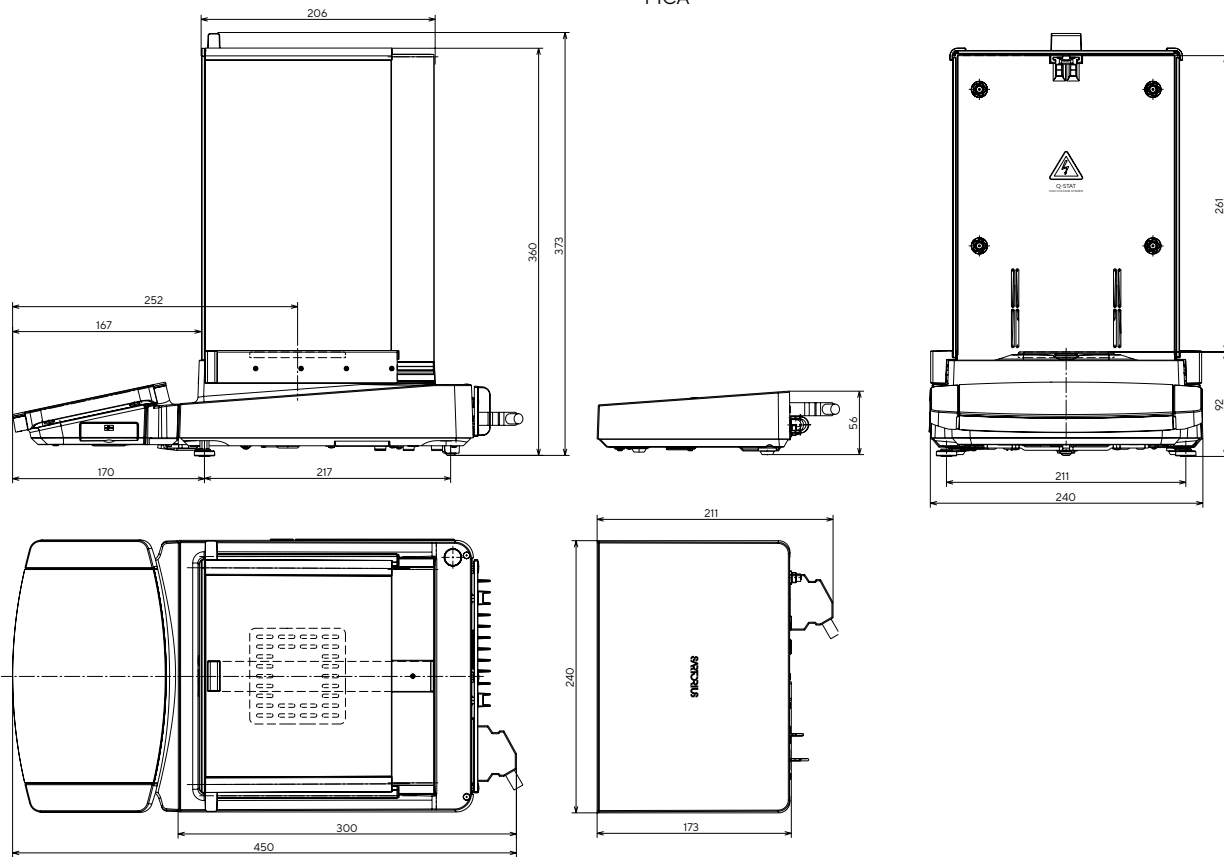
Draft Shield U, A and I



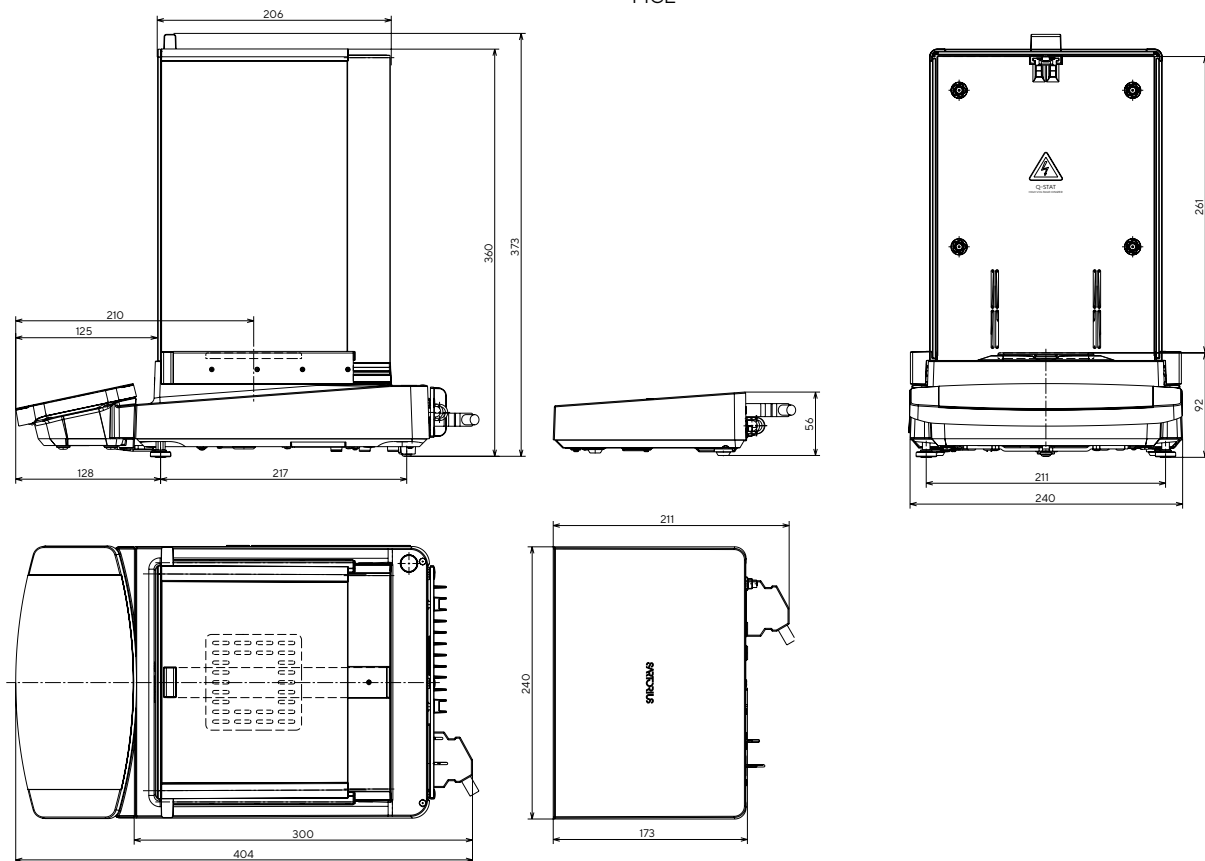
**Semi-Micro Balance 125P** | All dimensions are given in millimeters  
 (Weighing Module 125P is based on the Cubis® II balance series)

Draft Shield U, A and I

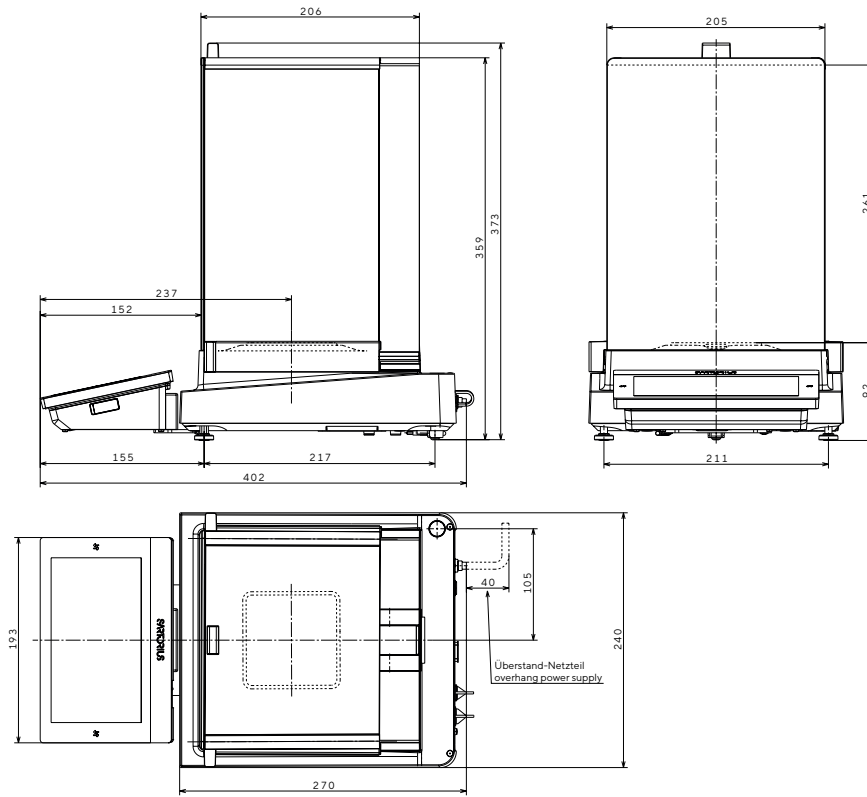
MCA



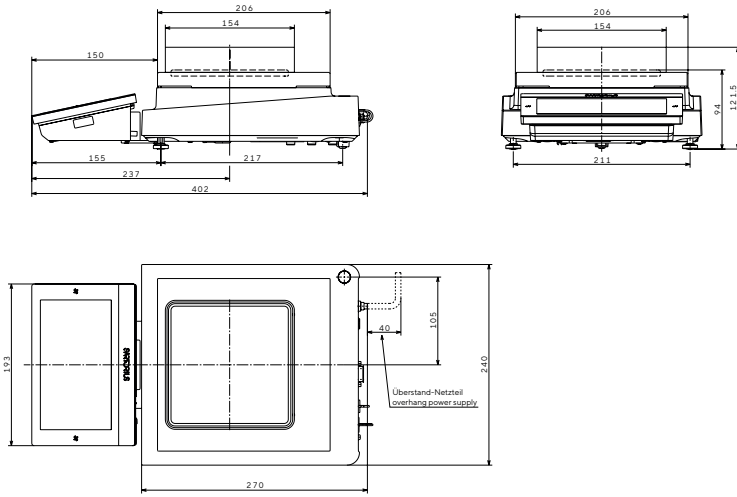
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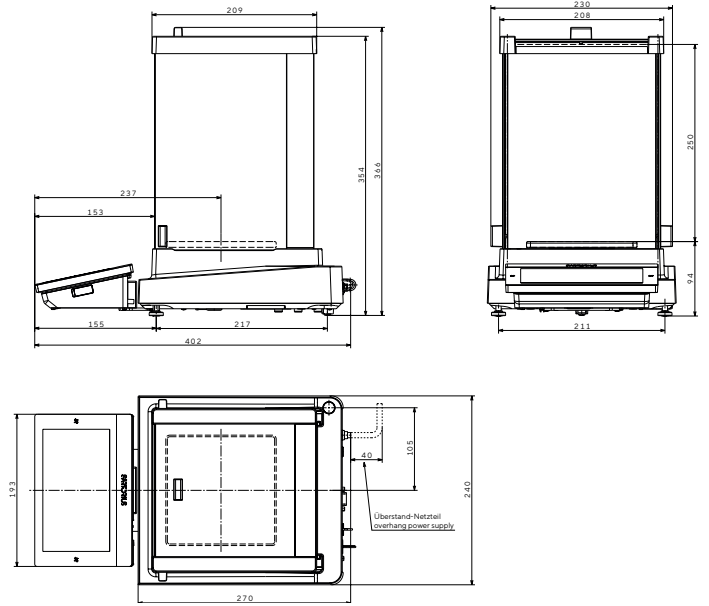
**Analytical Balance** | All dimensions are given in millimeters  
Draft shields U, A and I



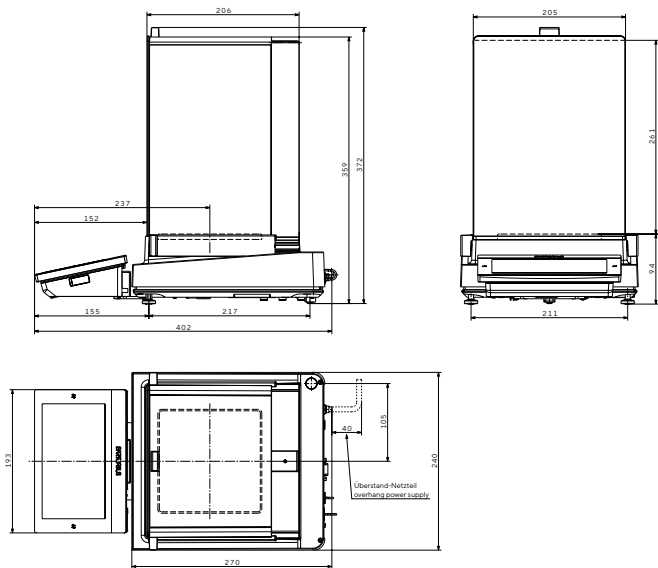
**Small Precision Balance** | All dimensions are given in millimeters  
Draft Shield R



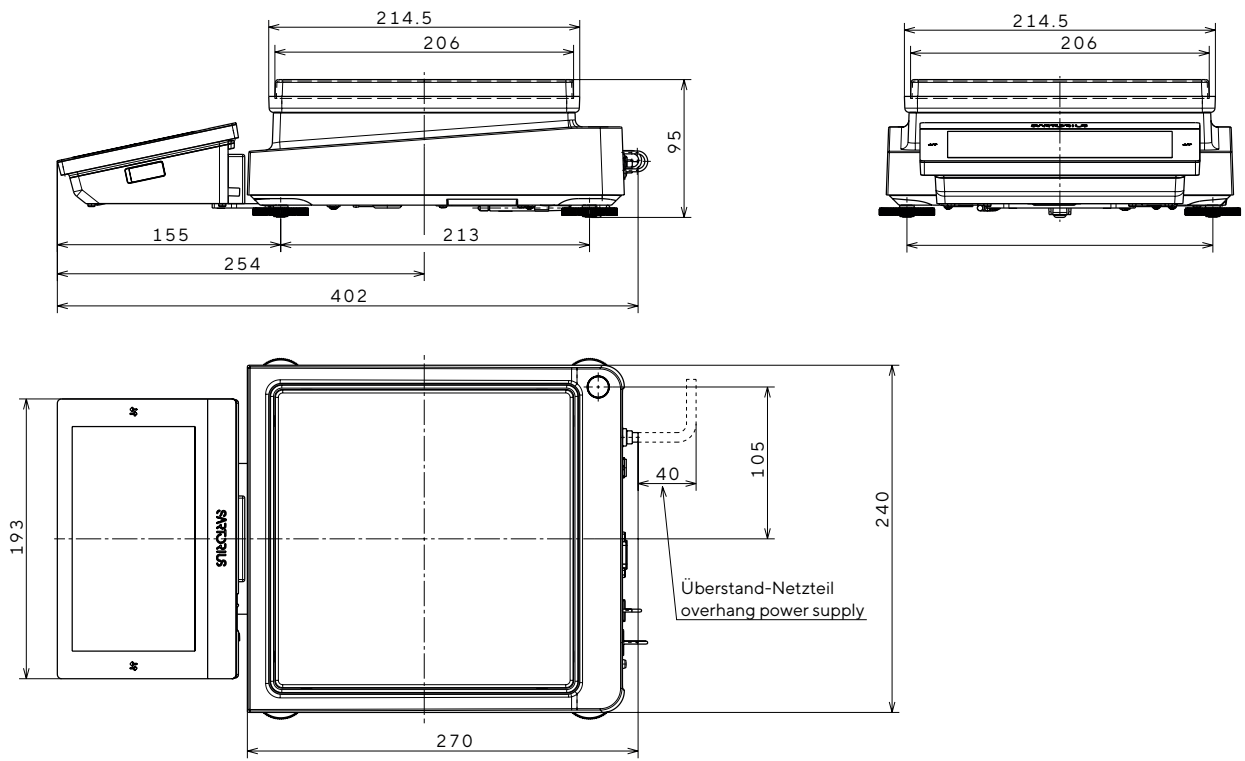
Draft Shield U



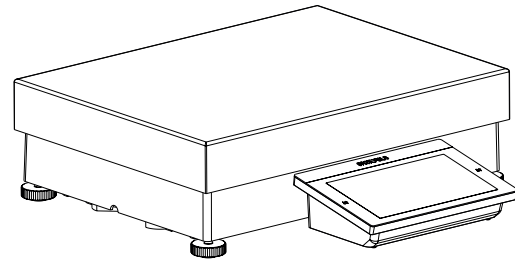
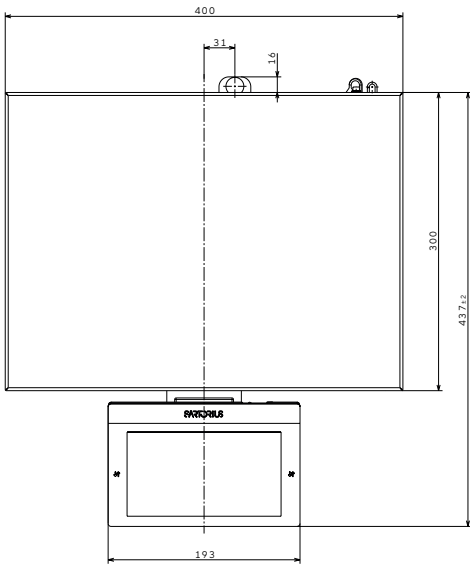
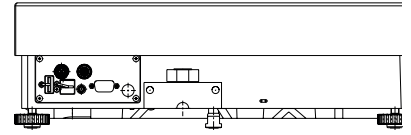
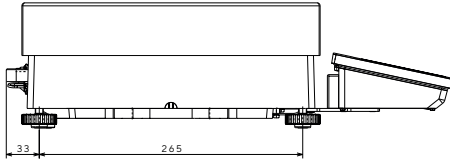
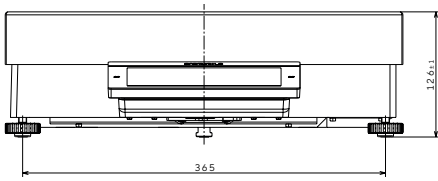
Draft Shield A



Large Precision Balance | All dimensions are given in millimeters



High-Capacity Balance | All dimensions are given in millimeters




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