



Cubis® High-Capacity Micro Balances

Avoid Sample Transfer with Cubis®
High-Capacity Micro Balances:
Weigh Minimum Amounts of Sample
Directly into Heavy Flasks

Simplifying Progress

SARTORIUS

Forget the Inconvenience of Transferring Samples

Are you still weighing your expensive samples in small sample containers, weigh boats or paper before transferring them to a large flask or other container? Do you find that you then have to either lower the weigh boat right into the solvent or use a brush to remove residue still clinging to the weigh boat or paper so you won't lose any of your sample? This procedure is not only tedious but is also a major source of error. Besides considerably risking contamination of your sample, you can never be sure whether you have quantitatively transferred your entire sample into a vessel.

Reliably Weigh Small Samples Directly into Large Sample Containers of up to 250 mL

Avoid Transfer Errors and Sample Loss: Reliably Weigh Small Samples Directly in Large Sample Containers

With a unique resolution of up to 60 million divisions and a readability of 1 µg, the new high-capacity Cubis® MSA | MSU66S micro-analytical balances feature a maximum capacity of 61 g. Based on this high weighing capacity, you will no longer need to transfer samples and can weigh minimum amounts directly into relatively heavy containers, such as long-necked flasks or HPLC bottles.

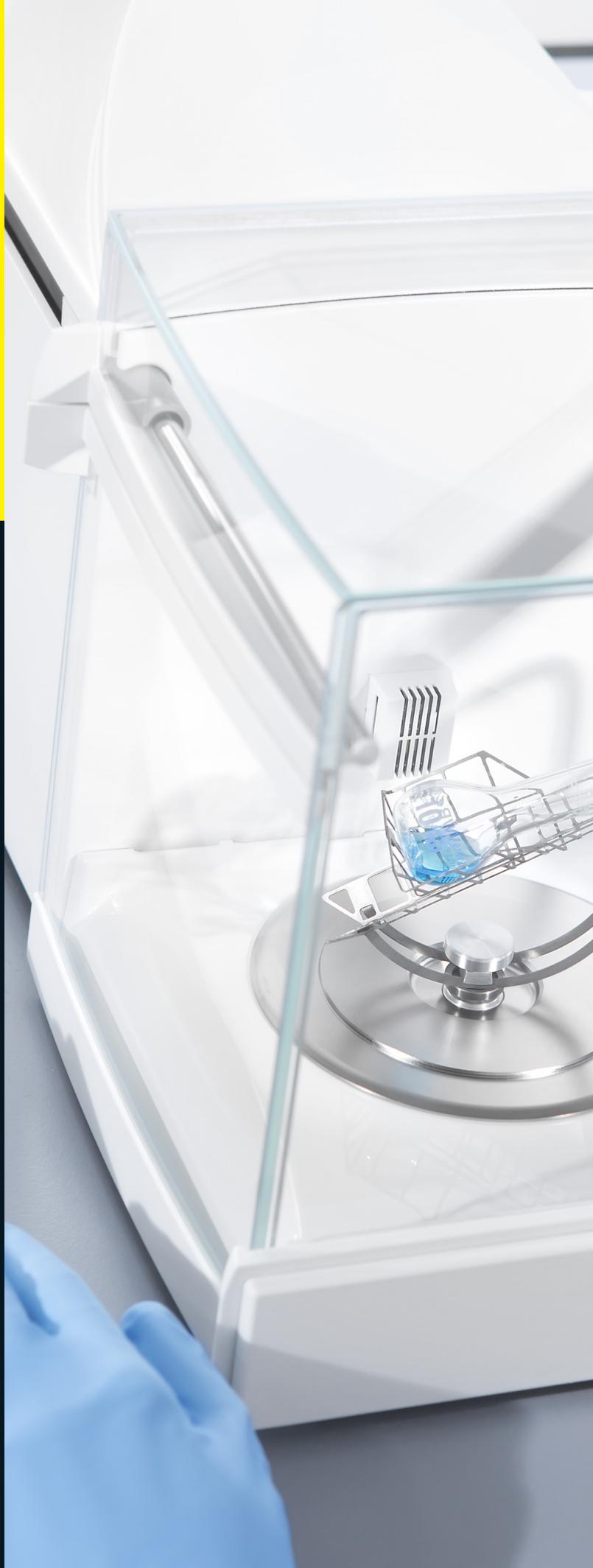
This saves you an extra step in your procedure, ensuring that you can use 100% of your sample.

No More Wasting Expensive Samples: Accurately Weigh Small Amounts

The new Cubis® micro balance enables an extremely low sample weight, allowing you to comply with USP and FDA requirements. This means you can manage with significantly reduced quantities of your samples, which may be costly or only available in small amounts.

Save Costs by Eliminating the Need for Using Weigh Boats and Paper

Since challenging sample transfer is no longer required, you will not only save time, but also the cost of purchasing weigh boats and paper, as well as the expense of subsequent disposal.





Always the Right Position for Optimal Manual Dosing

We have designed a flexible sample holder so that you can always position your containers for preparing stock solutions or reference standards to allow optimal manual dosing. This holder will enable you to easily dispense even the smallest quantities.

Whether you use long-necked round-bottom flasks, cylindrical HPLC bottles or test tubes, you can adjust the titanium sample holder to the size of your vessel. The angle and position can be adjusted for ergonomic and reliable dosing.



Increase User Safety by Omitting a Risky Step

When you transfer samples, tiny airborne particles can be released as a result of spillage or brushing. This can unnecessarily endanger your employees, particularly when they work with toxic substances. Sartorius enables direct weighing into containers, which protects all users from exposure to particles. The risk of spillage when a sample is added into small containers using a spatula is also reduced as larger sample containers also have wider openings.

A flexible titanium sample holder comes standard with the Cubis® high-capacity micro balance. This holder can be quickly positioned to accommodate different container sizes, such as long-necked flasks or HPLC bottles.



The extended space on our large 50 mm diameter weighing pan is ideal for vessels requiring a larger support area to prevent them from tipping over (standard pan size on 66S and 66P weighing modules; additionally 90 mm pan for 116P).



Work More Safely and Efficiently with the Right Sample Holder for Each Container

Overview of Dimensions and Weights of Long-Necked Flasks

(Dimensions and weights can vary, depending on the flask manufacturer.)

Use of a Sample Holder and a Weighing Pan

The optimal minimum weight according to USP Chapter 41 or Ph.Eur. Chapter 2.1.7 is 0.82 mg¹ or 1.64 mg².

Weighing Module 36	Weighing Module 66	Weighing Module 116P	Volume mL	Base Diameter mm	Height mm	Weight g	Sample holder for flexibility, YSH02	Standard weighing pan, YWP09 Ø = 50 mm	Optional weighing pan, YWP10 Ø = 90 mm
■	■	■	1	9	57	5	■	■	
■	■	■	2	11	57	6	■	■	
■	■	■	5	14	75	11	■	■	
■	■	■	10	20	90	17	■	■	
■	■	■	25	26	100	23	■	■	
	■	■	50	32	140	32	■	■	
	■	■	100	40	170	57		■	■
		■	200	50	210	80			■
		■	250	55	220	100			■

According to USP (United States Pharmacopeia) Chapter 41 and Ph.Eur. (European Pharmacopeia) Chapter 2.1.7, the operating range of a balance is defined as starting from 820 d and extending up to maximum weighing capacity. The optimal minimum weight is therefore 820 d. Depending on the installation location and the environmental conditions, this value for the minimum weight can typically be higher.

¹Weighing Modules 36, 66

²Weighing Modules 116P

Advanced Weighing with a Resolution of up to 60 Million Divisions

Obtain the Best Possible Weighing Performance from Your Balance



With 60 million divisions, the new high-capacity Cubis® micro balances offer the world's highest resolution in a micro weighing instrument manufactured in large series. This places extremely high metrological specifications and application requirements on these exceptionally accurate balances at the cutting edge of weighing technology.

Trained Users Can Achieve Reliable Weighing Results

The larger the container you use, the more it is exposed to environmental influences: Temperature, buoyancy, air currents, electrostatic effects, etc., all have a considerable impact on the response time and the stability of weight readouts. The following principle also applies in this case: The smaller the sample quantities used, the larger the relative measuring errors become. This also makes handling such micro-quantities all the more difficult.

The more confident you are in operating the balance to prevent inaccuracy and controlling environmental effects, the better your balance will perform, delivering the best possible results.

We will actively support you by offering seminars, training courses helpful information and valuable tips so that you can obtain the best performance from your high-capacity microbalance.



Even if you use relatively large vessels, you still will have weighing capacity to spare.

Available as an option, the YCM20MC climate sensor is perfect for monitoring ambient conditions (temperature, barometric pressure and humidity) within the weighing chamber.



Work More Efficiently and Reliably with Your Choice of Integrated Q-Apps

With the unique Cubis® individual software, you can download Q-Apps directly to your high-capacity Cubis® micro balance – without the need for running these apps using a laptop or middleware. Q-Apps are downloadable application programs (only for MSA) that guide you step by step through a workflow. This ensures that the procedures described in the corresponding SOPs are observed at all times, whether you have quantitatively transferred your entire sample into a vessel.

Choose Between a Standard Q-App or a Customized Q-App

Standard Q-Apps

A wide array of standardized Q-Apps awaits you: Choose from apps for differential weighing, formulation, average weight control, checking of pipettes according to ISO 8655, and more.

Customized Q-Apps

In contrast to the standard Q-Apps, the customized Q-Apps offer you the opportunity to program all of your specific solutions to directly cover your individual requirements and requests with regard to process integration. Simply contact your regional Sartorius sales representative. They will visit you on site, go through the necessary workflow with you and create a Q-App customized for your application.

We Recommend the Following Q-Apps for Your High-Capacity Cubis® Micro Balance:

UserCal Advanced YAPP012

Managed external calibration with up to 5 definable weights and analysis via HTML (Q-Web)

USP Advanced YAPP022

Determination of the operating range of the balance according to USP Chapter 41 with analysis via HTML (Q-Web)

QR | Barcode Reader YAPP11

Easy-to-use application for creating bar and QR codes or IDs on continuous paper or labels (Sartorius YDP30 printer required)

Easy ID YAPP12

Weighing application with individual sample ID and GLP printout

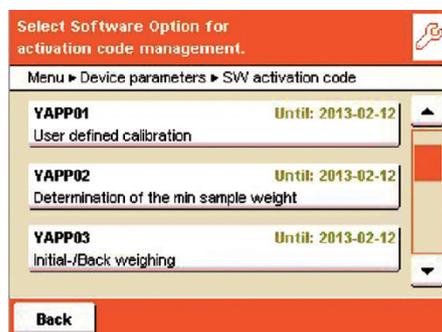
NTP Time Server YAPP14

Application for synchronizing the current date | time from the NTP server

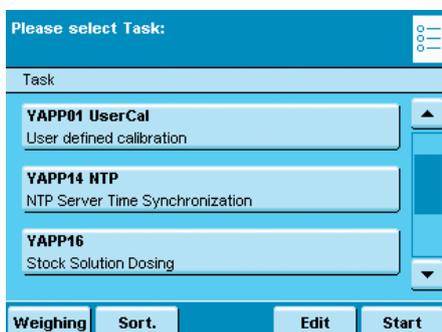
Dosing YAPP16*

Application for preparing stock solutions, especially for HPLC.

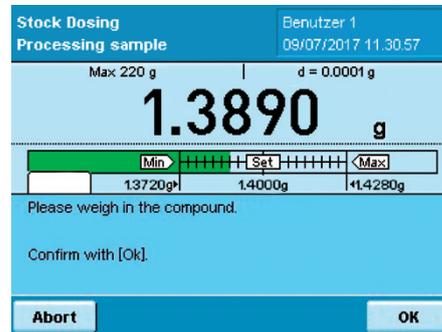
* YAPP16 is available in the Q-App Center with a price



Easy activation of Q-Apps.



Task selection.



Check of components weights in software application YAPP16.

YAPP16 Dosing Q-App for Pharma Applications Standard for Cubis® MSA 116P

Q-App Included at No Extra Charge for Automated Preparation of Standard Solutions

Standards of defined concentrations are used to determine the concentration of unknown samples. Such standards need to be prepared accurately in order to minimize errors during analysis of unknown samples. However, it is next to impossible to weigh a solid sample so precisely that you can use a predefined volume of solvent. With the new YAPP16 Dosing Q-App software installed, your Cubis® pharma balance converts into an automated system for gravimetric monitoring of all measured values.

The Dosing Q-App automatically adjusts the volume of the solvent to the weight of your compound and determines the verified final concentration of your standard solution based on the weight of solvent actually added. Time-consuming and error-prone manual preparation of standards using volumetric determination is now a thing of the past.

The Dosing Q-App provides an interface to the Thermo Fisher Chromeleon™ software*, permitting fully traceable documentation of all analytical data, including the details of your standards prepared.

* Dionex™ Chromeleon™ 7.2 Chromatography Data System (CDS) software is a trade mark of Thermo Scientific™



Visit the Sartorius Q-App Center for a Free Trial

You can easily download any standard Q-App from the Q-App Center, transfer it from an SD card directly to a Cubis® MSA laboratory balance, then try it out for 30 days free of charge. If you are happy with the features and convinced of the benefits, simply enter your personal details and the serial number of your Cubis® to purchase the Q-App. In just a few minutes, you will receive your unique activation code.

Ask about our automatic dosing system for the preparation of 100% reliable reference standards with full data integrity.

Stock Solution Dosing		Administrator	
Processing sample		10/07/2017 18:32:14	
Max 220 g	d = 0.00001 g		
+ 0.98483			
[Min] [] [Set] [] [Max]			
isoCAL	0.86195g	1.01406g	1.16617g
Please pipette in the solvent (1.014057 ml).			
Confirm with [OK]			
Abort		OK	

Check of added solvent weight in software application YAPP16.

Stock Solution Dosing		Administrator	
Result		11/01/2018 08:57:44	
Sample:	TEST SAMPLE		
Total volume required:	10.0000 ml		
Verified volume:	10.012 ml		
Compounds: Target / Measured concentration			
TEST COMPOUND 1	10.0 / 9.7 mg/ml		
TEST COMPOUND 2	20.0 / 20.0 mg/ml		
Reject		Accept	

Calculated verified volume and concentration of ingredients.

YAPP16: YAPP16 Dosing		Benutzer 1	
Result		27/06/2017 14:25:59	
Dilution:	TEST DILUTION		
Target conc.:	500 mg / mL		
Total req. amnt:	10.000 mL		
Compound batch:	C		
Target compound:	50.00 mg		
Actual compound	49.34 mg		
Compound purity:	100.00 %		
Solvent batch:	T		
Target volume:	9.858 mL		
Reject	Print Fct.	Accept	

Results for stock solution preparation using the YAPP16 Q-App.

Benefit from All the Advantages of the High-Capacity Cubis® Micro Balances

The Sartorius Cubis® range of premium laboratory balances is a recognized standard when it comes to the meeting the very highest requirements in regulated sectors, particularly in QC and research laboratories within the pharmaceutical industry. Cubis® laboratory balances not only can be integrated into your individual workflows using software. They can also be adapted to your weighing vessels and the conditions at your workplace using suitable accessories and mechanical extensions.

The Cubis® range is now being expanded by the new high-capacity micro balance. With 60 million divisions, it offers the world's highest resolution in a micro balance manufactured in large series. This high-capacity model therefore fits perfectly within the impressive concept of the Cubis® array of premium laboratory balances, which now provides an ideal solution for integration into your process, even in the highest resolution weighing range.



Weighing Capacity of 31 g, 61 g and 111 g

The top-end Cubis® portfolio now features three full-resolution balances with a weighing capacity of 31 g, 61 g and 111 g, respectively, and a readability of 1 µg, as well as three PolyRange models with weighing capacity range levels of 31 g | 6 g, 61 g | 12 g and 111 g | 12 g and readability levels of 10 µg | 1 µg and 10 µg | 2 µg.



Model MSA66S-000-DH: the balance that holds the world record in resolution.

Designed for Easy Integration into Your Process

The unique Cubis® **individual** software enables you to implement your own, entirely individual profile of specific requirements directly in the balance. There is no need for a laptop or time-consuming installation of middleware.

As a result, your balance will be capable of handling everything from data integration into your higher-level software, to direct implementation of your SOP, to full control of your process.



Select Your Preferred Cubis® Model

The new high-capacity micro balances feature the modular design of the Cubis® series.

You can configure your micro balance using the following order number codes explained below:



Display units:

MSA display for all models

Weighing modules:

yyy = 66S, 66P, 36S, 36P and 116P

Leveling:

0 = Software-supported leveling by a graphic shown on the display

Test reports:

- zz = 00 = Standard report as proof of compliance with specifications
- zz = TR = As for 00, but with a detailed test report showing specific measurement data
- zz = CE = Verified at the factory for use in legal metrology; with European type approval certificate

Draft shields:

ww = DH; automatic, motorized draft shield with learning capability and choice of operation either by ergonomic, palm-activated key or by touch-free infrared sensor YHS01MS

Weighing Modules

Weighing Modules	66S	66P	36S	36P	116P
Readability, µg	1	1 10	1	1 10	2 10
Weighing capacity, g	61	12 61	31	6 31	12 111
Typical stabilization time, s	3.5	3.5	3.5	3.5	3.5
Typical response time, s	10	10	10	10	10
Repeatability, <± µg	4	10	2	8	4 10
Linearity, <± µg	15	15	10	10	20
Off-center loading (eccentricity), <± µg	20	20	15	15	30 (50)
Optimal minimum weight*, mg	0.82	0.82	0.82	0.82	1.64
Weighing pan size (dia.), mm	30 (optional 50)	30 (optional 50)	30 (optional 50)	30 (optional 50)	50 (optional 90)
Weighing chamber height, mm	180	180	180	180	240

* According to USP (United States Pharmacopeia) Chapter 41 and Ph.Eur. (European Pharmacopeia) Chapter 2.1.7, the optimal operating range is defined from 820 d to maximum weighing capacity. The optimal minimum weight is 820 d and, depending on the installation location and environmental conditions, this value may be higher.

Interface Module Options

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

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

** The brand name and logo for Bluetooth® wireless technology are owned by Bluetooth SIG Inc. The use of this brand name and trademark by Sartorius AG is under license. Other brand names and trademarks are the property of their respective owners.

Accessories

Adjustable titanium sample holder for flexibility in accommodating different container sizes (standard on 36S, 36P, 66S, 66P, 116P)	YSH02
Slotted titanium weighing pan, 50 mm Ø (standard on 66S, 66P, 116P)	YWPO9
Titanium weighing pan, 90 mm Ø (optional for 66S, 66P and 116P)	YWP10
Stent Holder 38 mm long made of titanium	YSH12
Eppi Tube Holder up to 2 mL made of titanium	YSH14
Tube Holder up to 5 mL made of titanium	YSH18
Flask Holder up to 40 mL made of titanium	YSH22
Titration Vessel Holder up to 50 mL made of titanium	YSH47
Syringe Holder made of titanium	YSH41
Climate module for use inside the draft shield, w o DAkkS certificate	YCM20MC
Calibration of climate module YCM20MC with DAkkS certificate	YCM20DAkkS
Calibrated climate module with DAkkS certificate	YCM20MC-DAkkS
Dosing Q-App for creation of stock solutions	YAPP16
Ionizer with U-shaped electrode manufactured by HAUG, incl. power supply for 230 V	YIB02-230V
Ionizer with U-shaped electrode manufactured by HAUG, incl. power supply for 115 V	YIB02-115V
UserCal Advanced	YAPP012
USP Advanced	YAPP022
Infrared sensor for touch-free activation of functions (e.g. controlling the draft shield)	YHS01MS

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