



# Cubis<sup>®</sup> II Ultra-High Resolution Balances

The New Benchmark in  
Performance

Simplifying Progress

**SARTORIUS**

# Cubis® II Ultra-High Resolution Balances

## Uncompromized Accuracy and High Speed Under Real Laboratory Conditions

The characteristics of a high resolution laboratory balance are that they have a high weighing capacity and fine readability. This type of analytical instrument is used to weigh very small sample quantities directly into larger flasks. It is broadly used across many industries, such as pharmaceutical, biopharmaceutical, chemical, environmental, automotive or medical devices industries, as well as in academia. Most of these industries are subject to strict legal regulations and are looking for balances which meet the requirements for high accuracy and repeatability over the entire weighing range. However, challenging laboratory environments or effects deriving from samples often negatively impact the measurement accuracy.

The Cubis® II Ultra-High Resolution Balance is a new addition to our Cubis® II portfolio of premium laboratory balances. It offers the well know signature characteristics of the Cubis® II family: modularity, compliance, connectivity and digital data management either by directly connecting to ELN/LIMS on site or indirectly through the Ingenix Suite. Additionally, these balances are less prone to environmental effects, resulting in faster weighing workflows and improved performance in a daily laboratory environment. The balances offer spacious weighing area despite a compact design which supports ergonomic weighing into various flasks. We brought cleanability to the next level as well. Not only easy disassembly and high chemical resistance is guaranteed, but thanks to the new Cleaning App, the cleaning process can become part of compliance and SOP's. We also made sure that the new balances are worth the investment, we offer the option to upgrade both the software and hardware of your instrument at a later stage, minimizing your upfront costs.

### Your Benefits

- Minimizing sample costs by excellent minimum sample weight values through the entire weighing range
- Faster results and improved specifications guaranteed by the new weighing system
- 21CFR part 11 and EU Annex 11 compliance, all controls available directly on your balance
- Intuitive cleaning, high chemical resistance. Thanks to the Cleaning App the cleaning is now part of compliance and SOPs
- 100% discharged samples thanks to the novel ionizing technology guarantees fast stabilization
- Touch free operation minimizes cross-contamination
- 66% larger weighing area and variety of weighing pans offer ergonomic sample weighing
- Investment security thanks to the post-purchase hardware and software upgradeability
- Choose from the following high-capacity microbalances:
  - 1 microgram readability up to 61g capacity (Models: 66S/P, 36S/P)
  - 2 microgram readability up to 111 g capacity (Model 116S)

# Lab-Verified Performance



## From Specifications to Reality: Peak Performance Under Real Laboratory Conditions

Real lab performance often deviates from instrument specifications due to varying environmental conditions, such as changes in temperature, air-pressure, humidity or air-draft change. Samples can also be influenced, as well, e.g. problems with static charges are frequent when weighing powder compounds directly into plastic- or glass flasks. Despite these influencing factors, it needs to be ensured that a high-resolution device still meets the requirements for accuracy and repeatability.

The new Cubis® II Ultra-High Resolution Balances help to manage the challenges from a typical laboratory environment thanks to its innovative design elements. The 4th generation Monolith, invented by Sartorius, allows faster weighing results and improves specification. Hence, high degree of repeatability and fast measurement time is to be expected when working with these devices. Built-in intelligent compensating systems manage temperature-, humidity- and air pressure changes which further ensure stable balance behavior. The optimal positioning of the four ionizing nozzles and the technology behind it guarantees complete electrostatic elimination. Find out more about how these balances perform under drafty conditions and in typical lab environment in our App Note: Cubis® II Ultra-High Resolution Balances: From Data Sheet to Reality



## Minimize your Sample Costs with Low Minimum Sample Weight

High resolution and high-capacity instruments allow weighing very small amounts of samples into large flasks. Expectations to achieve low minimum sample weights for these devices are high. However, the smaller the weight of the sample, the larger the relative measurement uncertainty that the weighing is subject to. The measurement uncertainty can be greatly influenced by environmental changes occurring in laboratories.

The Cubis® II High-Capacity Microbalance ensures stable and reliable performance over the entire weighing range thanks to the design elements described previously. Repeatability values with low measurement uncertainty can be achieved over the entire weighing range, resulting in low minimum sample weight. This minimizes the cost of samples. Find out more about the test results of minimum sample weight values using various protocols according to USP in our App Note: Cubis® II Ultra-High Resolution Balances: From Data Sheet to Reality

Learn More:  
Real Lab Tests App Note



## When Pharma Compliance Matters

Industries depend on strict legal regulations and follow the US or European Pharmacopoeias. The Pharma QApp Package (QP1) of the Cubis® II MCA offers applications which are needed to comply with pharmaceutical-relevant guidelines such as 21 CFR Part 11 and USP 39, Chapter 41. It includes: user management, electronic signature, audit trail, minimum weight, USP advanced, measurement uncertainty, and user calibration.

Pharma (QP1)		License
Q	<b>User management</b> Version: 1.0.1	✓
Q	<b>Electronic signature</b> Version: 1.0.1	✓
Q	<b>Audit trail</b> Version: 1.0.1	✓
Q	<b>Minimum weight</b> Version: 1.0.2	✓
min	<b>USP Advanced</b> Version: 2.4.3	✓
u,w	<b>Measurement uncertainty</b>	✓

## Ergonomic Sample Weighing Without Sample Loss

To support ergonomic weighing processes, both the weighing pan size and the inner weighing area was significantly increased allowing easy handling of samples and flasks. However, while standard weighing pans are the most used surfaces during the typical weighing processes, they reach their limit as soon as samples with a unique form or vials and flasks need to be used. Also, a too small/narrow inner area can make some of these weighing processes uncomfortable or even impossible.

A great variety of sample holders are available which enable ergonomic sample weighing in workflows where using a standard pan is difficult or impossible. All weighing pans and sample holders are made of titanium, which ensure uncompromised accuracy due to its non-magnetic properties.



**YSH02-3 Adjustable  
Flask Holder**



**YSH14-3 Reaction Tube  
Holder (up to 2 mL)**



**YSH22-3 Vial Holder**



**YSH30-3 Filter Holder  
(150 mm)**

## Compliant Cleanability

Including cleaning as part of an analytical balance is often neglected, despite the chance of cross-contamination when uncleaned regularly and properly. The higher the resolution, the greater the risk, because even a small particle can negatively impact the weighing accuracy. Despite this, only 28% of laboratories clean their high resolution analytical devices on a daily basis according to users. Often it is unclear which parts can be removed for cleaning, or it is unclear which chemicals are good to use.

# Easy Cleaning Thanks to its Tool-Free Assembly and High Chemical Resistance

All draft-shields, including the front-shield, as well as the weighing pans and the base plate, can be easily removed allowing a tool free assembly. Both the weighing floor and the weighing pan show high chemical resistance against the most frequently used cleaning agents in the laboratory. The inner weighing system is protected thanks to the high volume capacity and the design of the weighing floor. The cleaning kit, which comes with every balance, includes useful tools such as hard and soft brushes, dry cloth and forceps, helping to make weighing workflows faster.



# The New Cleaning QApp: Your Intuitive Software Guidance

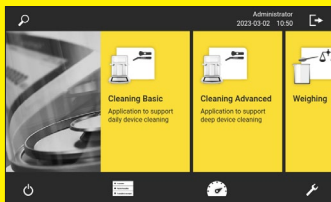
Follow the steps in the new cleaning QApp for error free cleaning execution. It supports your daily and advanced cleaning routines, shows the cleaning status in the status center and allows tracing the cleaning process in the audit trail. The Cleaning QApp is configurable with user management allowing the documentation of inclusive electronic signature, and comes standard with every MCA Ultra-High Resolution Balance. Find out more cleaning in Best Cleaning Practices.

Learn More:  
**Cleaning Practices for Cubis' II  
Ultra-High Resolution Balances**

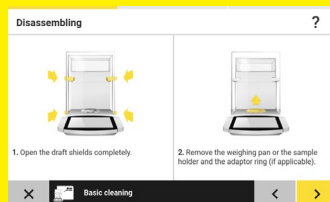


## User Interface

The Cleaning QApp comes with several features to make cleaning as easy and safe as possible.



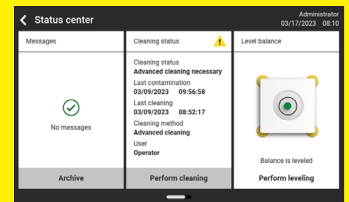
**Daily and Advanced Cleaning**



**Guided Cleaning Process adapted to your balance configuration**



**Traceable documentation in audit trail**



**Cleaning status shown in the status center**

## Secure Your Investment with Next Level Upgradeability

Sometimes it is difficult to predict, what kind of challenge will you be facing in the future. Is the humidity in your facility too low, or your samples are prone to static charges, but you don't have an ionizer? Or wish you had an auto-draftshield but you already purchased your balance?

**Upgrade ionizer (QAPP1001),  
motorized draftshield (QAPP1002)**



Wish you had an inner draftshield to protect from drafty conditions? Upgrade these features, anytime.

**Motorized Inner Draftshield  
(YDS125A) Click-in Module**



# Configure Your Cubis® II Ultra-High Resolution Balance

User interface Weighing module Approval Draft shield QApp Packages Hardware Options

M C A 116S - 3 S 0 0 - D QP1 QP2 QP3 HWL

	Leveling	Approval	Draft shield	Software packages*	Hardware options
Balance type Weighing module**	automatic	S00, S01, CEU, CFR, CCN, OBR, OIN, or OJP	D	QP1, QP2, QP3, QP4 or QP99	HWL, ION or MDS
High-capacity micro 36S, 36P, 66S, 66P, 116S	■	■	■	■	■

\* MCA models only  
 \*\* Weighing module 116S available with MCA display only

User Interface	Description	Draft Shield	Description	Approval	Description	Hardware Options	Description
MCA	Advanced user interface	D	Draft shield for High-capacity micro balances with upgradable hardware option	S00	Standard version worldwide	HWL	All hardware licenses
MCE	Essential user interface			S01	Standard only metric units	ION	Ionizer
				CEU	Verified version Europe (except FR)	MDS	Motorized draft shield
				CFR	Verified Version France		
				CCN	Verified Version China		
				OBR	Verifiable Version Brazil		
				OIN	Verifiable Version India		
				OJP	Verifiable Version Japan		



## QP1 Pharma

Contains applications concerning the topic of compliance with pharmaceutical-relevant guidelines as 21 CFR Part 11 and USP 39, Chapter 41. The Pharma package includes applications such as user management, digital signatures, audit trail, USP minimum weight.



## QP2 Advanced Applications

Various complex weighing applications including evaluation. This includes applications used for density determination, percentage weighing, counting, backweighing, residual dirt analysis, residue on ignition, sieve analysis, filter weighing, checkweighing, formulation, averaging, etc.



## QP3 Utilities

Contains weighing applications and function extensions such as bootscreen, color scheme, free formula, fiber coarseness, diameter determination, air buoyancy correction, paper weight, statistics and printing of QR | bar codes.



## QP4 Connectivity

Includes applications for data exchange; for example to Windows file server, FTPS, StarLims, etc.

## QP99

All inclusive package. Includes 4 different sub-packages for compliance (Pharma (QP1)), complex weighing applications (Advanced (QP2)), weighing applications and helpful tools (Utilities (QP3)) and connectors for data exchange (Connectivity (QP4)).

# Laboratory Weighing Service

At Sartorius high quality products go hand in hand with professional services. With our wide service offering we ensure reliable, reproducible and traceable weighing results and the longevity of your product.

## Our services at a glance:

- Installation and commissioning  
Your advantage: Outstanding weighing performance, steadfast results from the start
- Equipment qualification (IQ | OQ)  
Your advantage: Full compliance with regulatory requirements (GMP | GLP) and audit security
- Preventative maintenance and Service Contracts  
Your advantages: Optimal operation of your system, reliable results
- Calibration Services  
Your advantages: Traceability of weighing results, regulatory compliance e.g. with USP or Ph.Eur.




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