

# SARTORIUS

## Simplifying Progress

Compliance &  
Connectivity with  
Cubis® II Premium  
Balances

Interactive eBook  
v1.0



# Cubis® II Premium Laboratory Balance

## The New Generation of Modular Analytical, Precision and Microbalances

- For scientists in R&D and analytical laboratories needing the most reliable lab weighing results, the Cubis® II from Sartorius is a completely configurable, high performance portfolio of balance hardware and software that will align with your unique demands and compliance requirements to maximize operational efficiency and experimental outcomes.
- For customers requiring Pharmaceutical & GxP compliance, the Cubis® II platform is the only laboratory balance on the market today that offers fully customizable hardware, software & connectivity.

## Trusted Results

The Cubis® II balance offers several advantages over other lab balances:

- **Leading Performance** —The Cubis® II balance offers best-in-class performance, including high-capacity and high readability, regardless of sample type.
- **Error-free Operations** —Ensure a high level of trust and transparency by using Cubis® II's functionality to assess relevant factors during data acquisition.
- **Full End-to-End Data Integrity** —Ensure your data is reliable and cannot be manipulated with Cubis® II's user management function and LIMS connectivity.
- **Reliable Support** —Our lab weighing team provides expert support to help ensure your success, even when making very specific and unique requests



Brochure

Video

Booklet

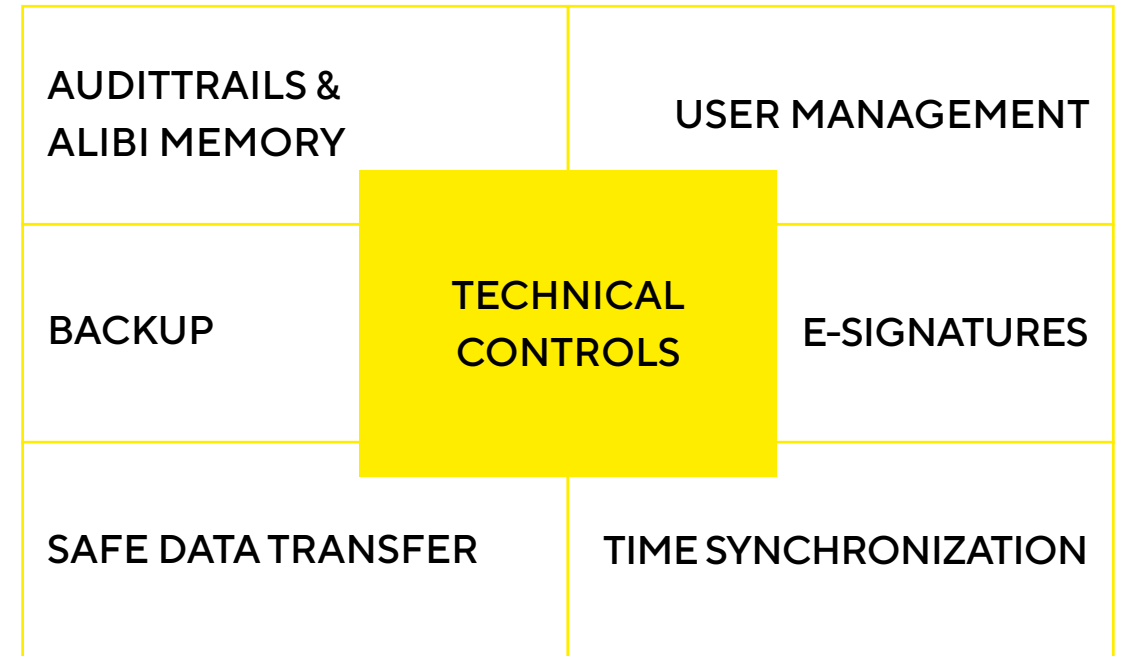
Optimal Weighing results

Datasheet

# Confident 21 CFR Part 11 Compliance – Complete Traceability

Sartorius's Cubis® II is the first balance that supports all requirements to achieve 21 CFR part 11 and EU Annex 11 compliance without needing a single sheet of paper and eliminating the possibility to falsify process data and/or signatures.

- All data generated by the Cubis® II balance follow the key principles ALCOA (+), which defines data integrity standards and relates to GxPs. Therefore, the Cubis® II balance ensures safe and accurate data storage and supports all requirements for FDA directive 21 CFR part 11 and EU Annex 11 compliance.
- The Cubis® II balance, with Pharma package, contains all the technical controls to support compliance with common regulations without the need for additional hardware, “middleware” or software.



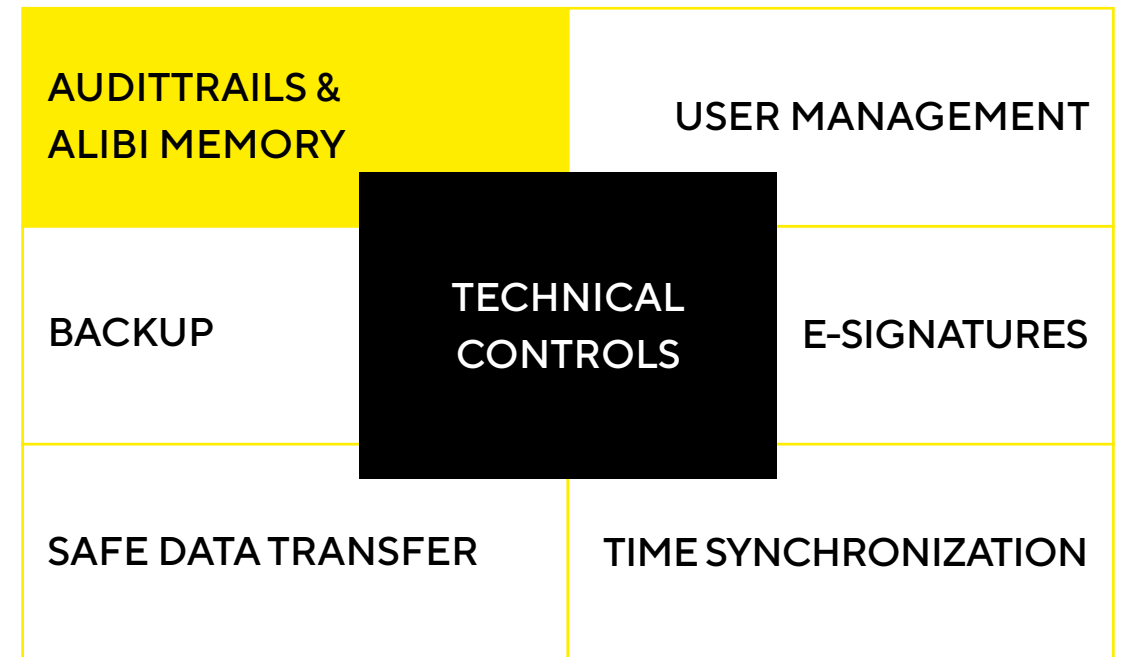
White Paper  
Compliance

21 CFR Part 11  
Checklist

# Audit Trail & Alibi Memory

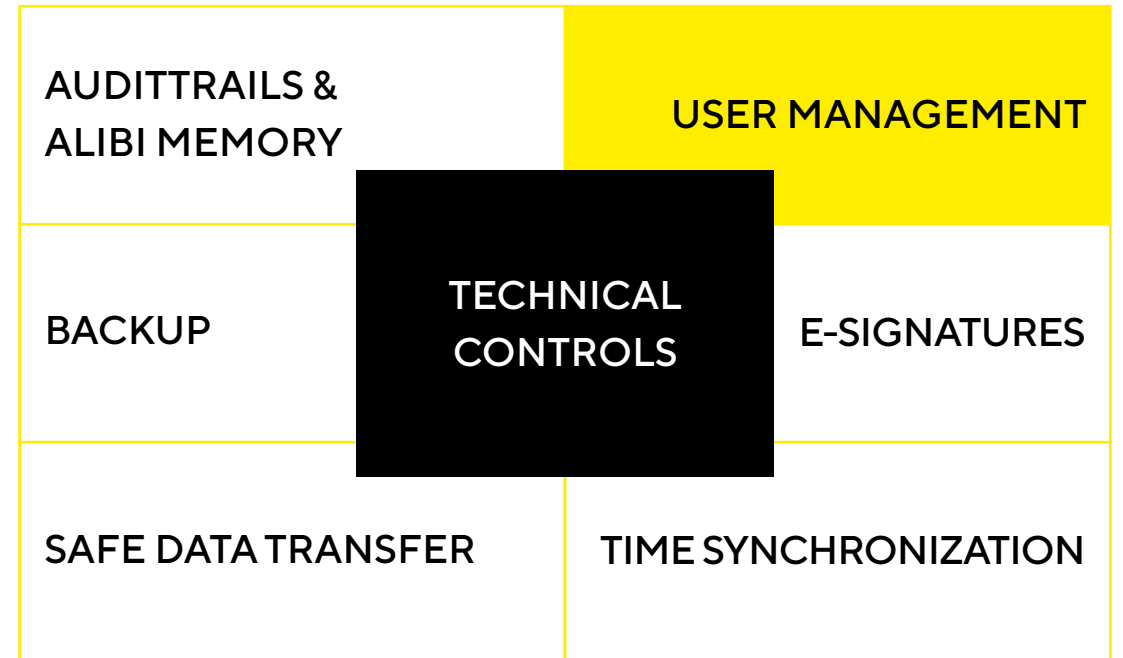
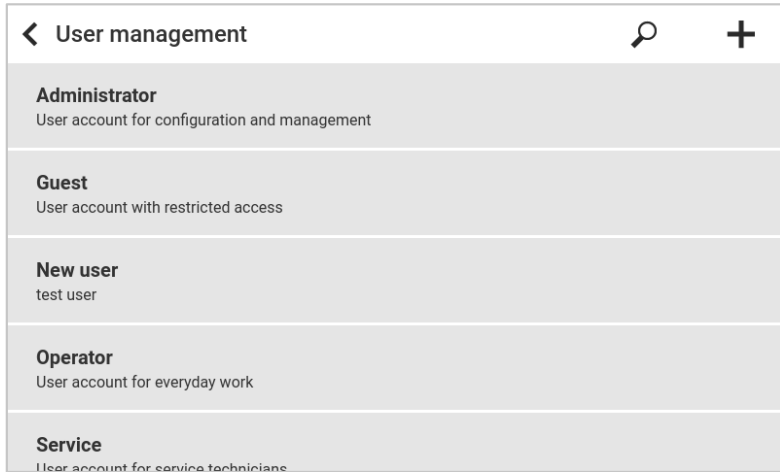
The Cubis® II balance's audit trail is a tamper-protected time-stamped electronic logfile, that allows reconstruction of events related to the creation, modification, and | or deletion of records. The data can be displayed, filtered, and exported in an easy way. Additionally, the Cubis® II balance contains an "Alibi Memory". The system automatically stores weighing data in a ring buffer.

Audit trail					
2019-02-13	10:12:45	Administrator	Created	QAPPMANAGEMENT	
2019-02-13	10:06:35	System	Login	ACCESSCONTROL	
2019-02-13	10:06:34	Administrator	Logout	ACCESSCONTROL	
2019-02-13	09:24:55	Administrator	isoCAL	CALIBRATIONADJUSTMI	
2019-02-13	09:11:28	Administrator	isoCAL	CALIBRATIONADJUSTMI	
2019-02-13	08:50:53	Administrator	isoCAL	CALIBRATIONADJUSTMI	



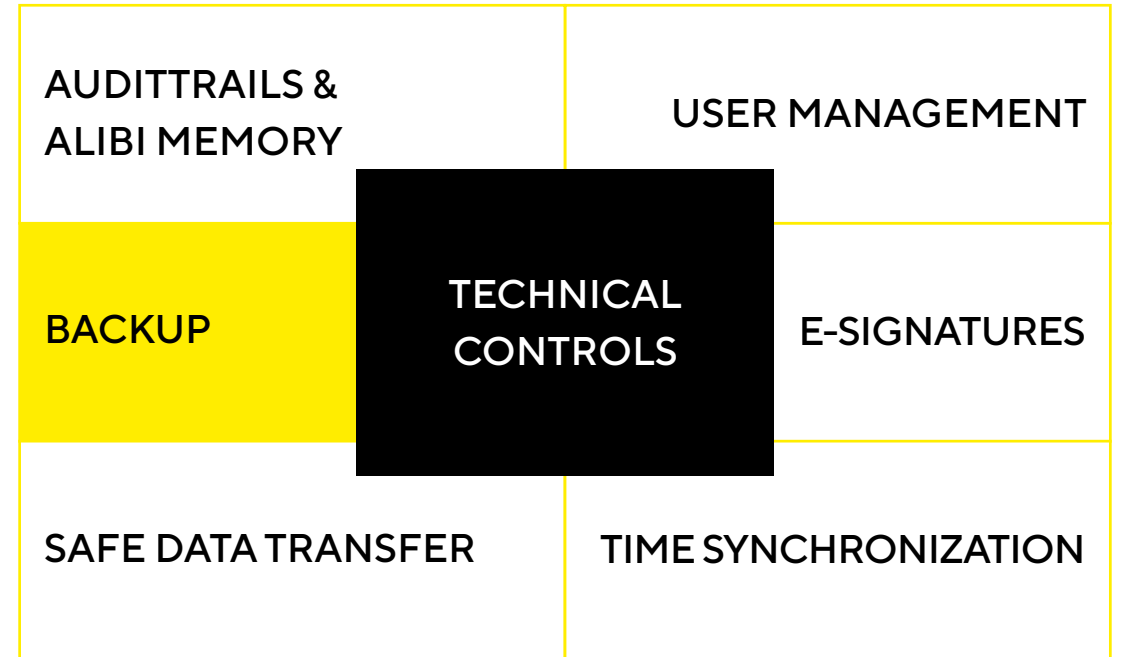
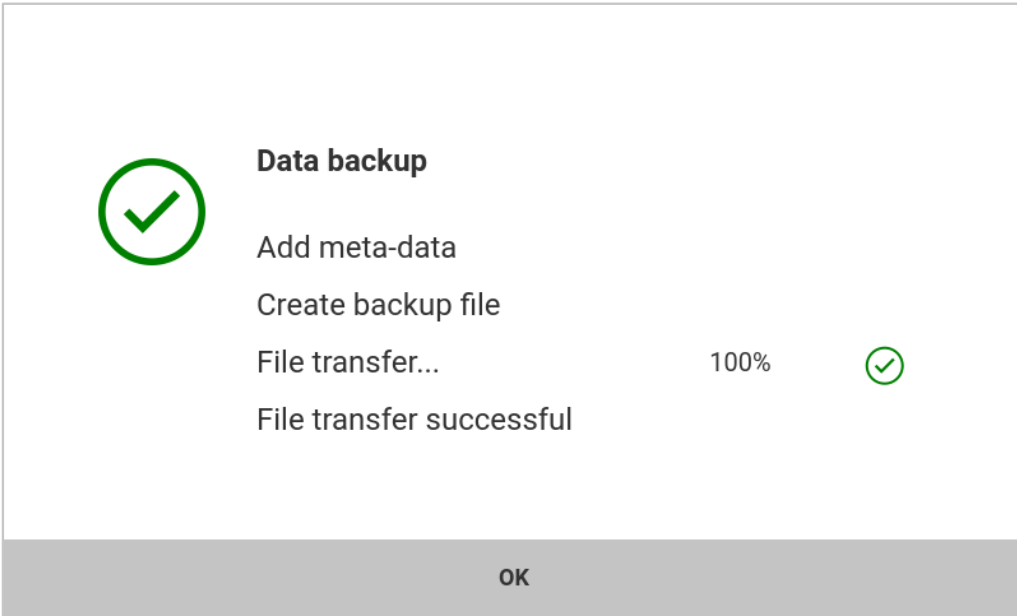
# User Management

The Cubis® II balance provides two options for complete user management with access control. The local user management can be configured in accordance with your password policy. The password rules for 21 CFR Part 11 compliance are easily implemented. Moreover, Cubis® II can be integrated in the company's domain to allow single sign-on. In this case the company defined password rules are implemented automatically.



# Backup

Cubis® II can automatically execute time-controlled actions for backup. The system is able to upload data on a file share or export the data in other systems. Archiving is easily possible and fully compliant

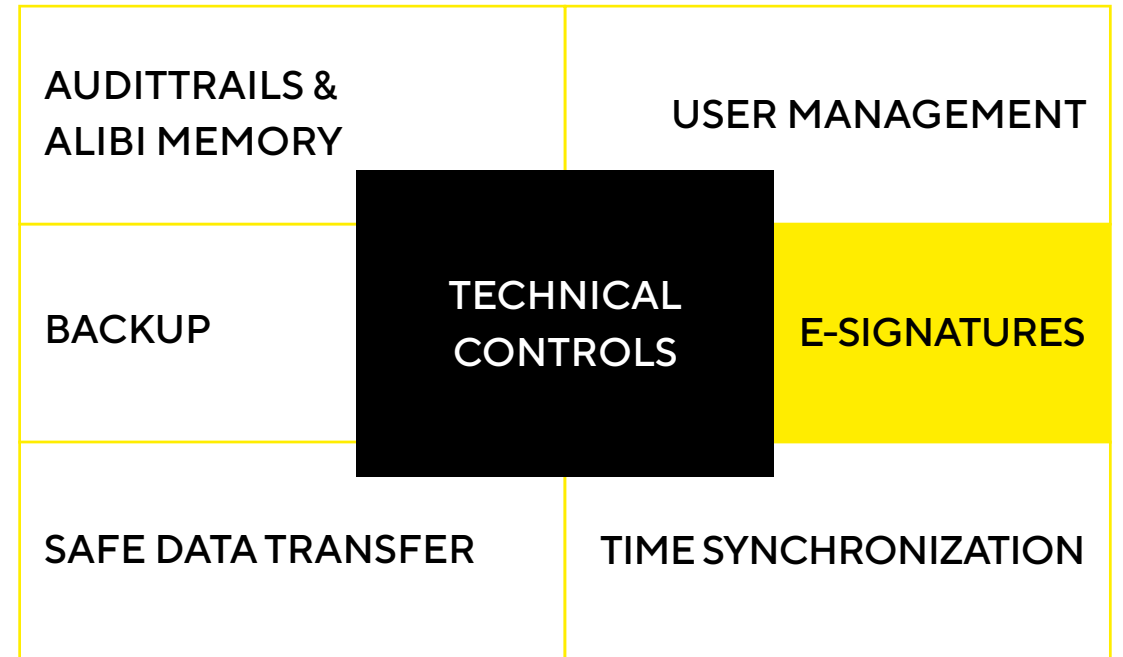


# Electronic Signatures

In the Cubis® II balance, an electronic signature can be used to sign the final report for weighing processes. Based on a secure password, the combination of username and password is fully compliant with 21CFR.



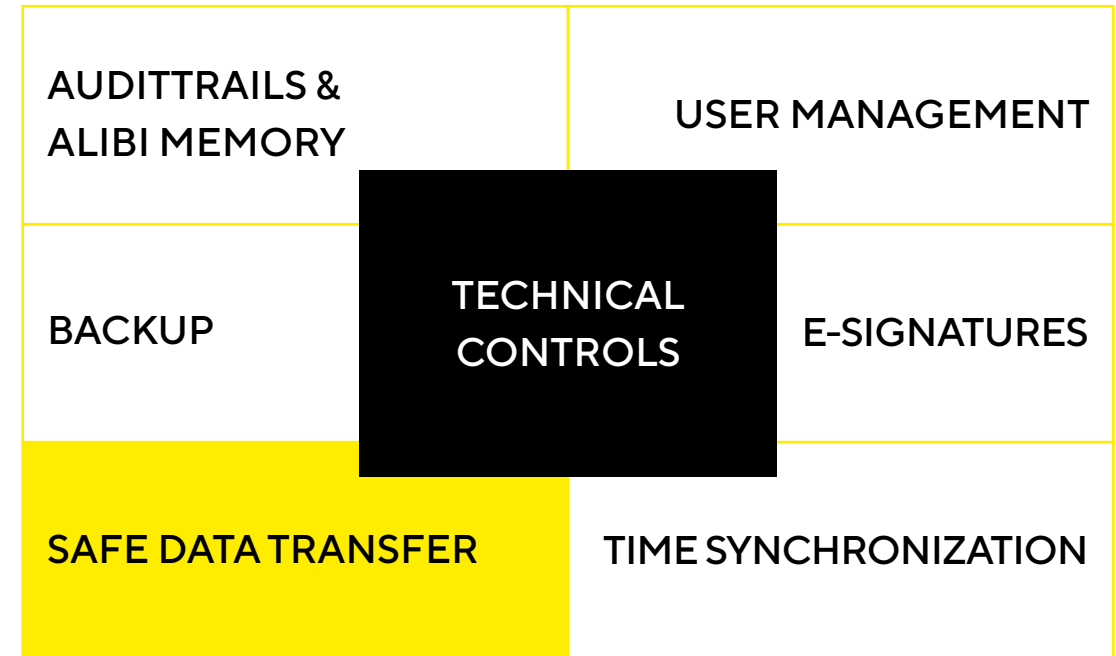
Video  
e-signature



# Safe Data Transfer

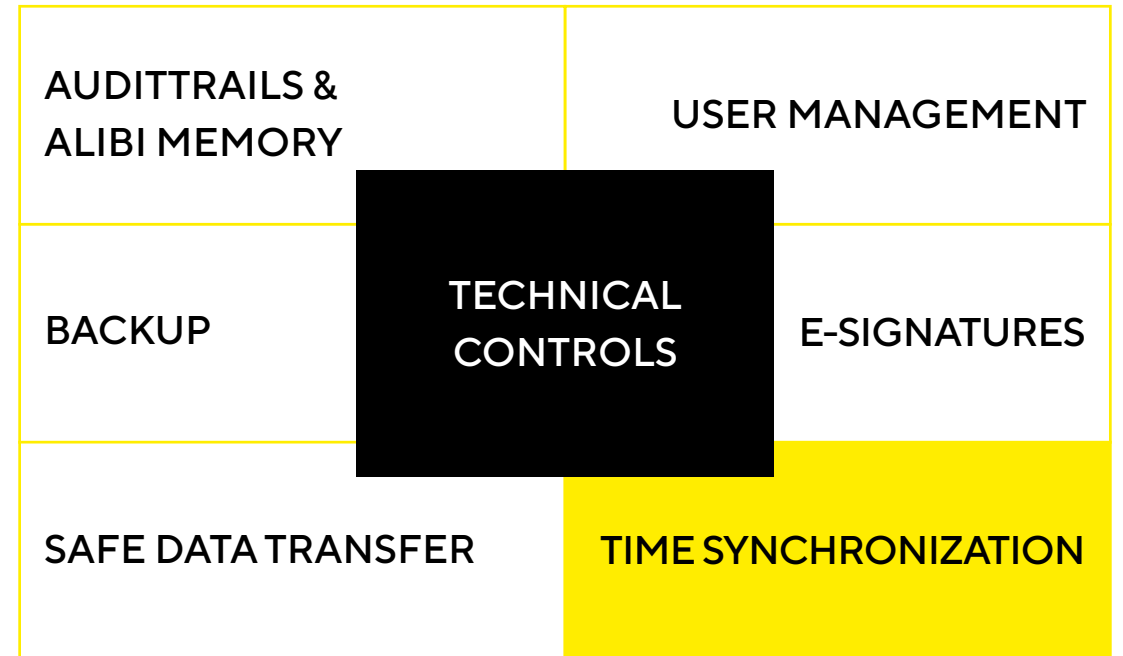
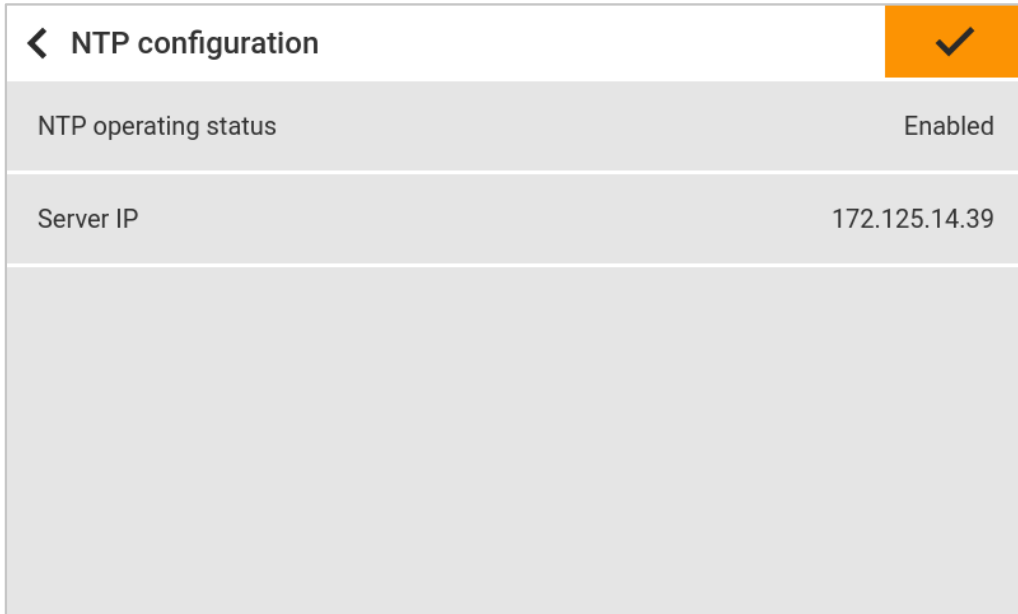
An electronic record should be protected against any manipulation. The Cubis® II balance saves all files, together with a calculated MD5 checksum which is stored in the audit trail files and additionally in a separate MD5 file.

Data	
ID	540
Date/time	2019-02-27 10:03:52 (UTC)
User	Administrator
Event	Operation End
Module	CONNECTORMANAGEMENT
Operation	Connector USB stick Operation Success File name CUBIS_0000110114_2019-2-27_10-3-49.pdf MD5 checksum 6906-A5BA-DBD9-B8B9-DB25-72B0-46D7-C117 File size 20.22 kB



# Time Synchronization

The Cubis® II balance supports automatic time synchronization via Network Time Protocol (NTP). An accurate time stamp is elemental for trustable records.



# Customizable Modularity – Thousands of Configurations

In 2009, Sartorius offered the first modular balance with the Cubis®, and today continues that tradition by offering the Cubis® II, the first lab balance series featuring a completely modular design:

## Weighing Modules

Choose from a range of 45 different weighing modules that best fit your preferences.

## Draft Shields

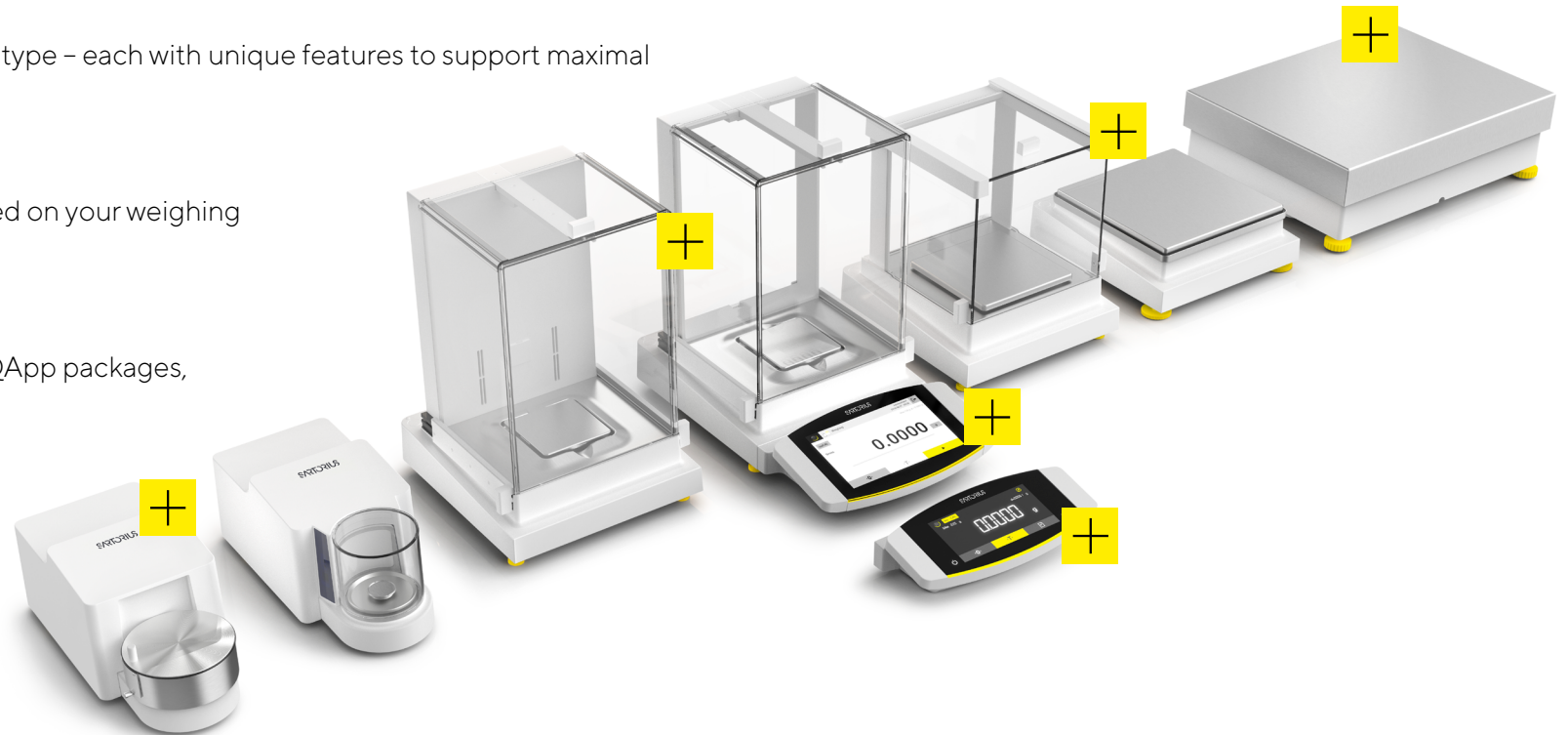
Choose from 7 different options, depending on your balance type – each with unique features to support maximal balance performance and user-centric design.

## Display

Choose between advanced and essential user interface, based on your weighing applications and requirements.

## Software

With up to 60 optional software applications clustered into QApp packages, and with continuous software development, we support your workflows now and in the future.



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✕

### MCA Advanced User Interface

Large 7" color touch display including touch, scroll, swipe functionality with factory-installed essential weighing applications and diverse Qapp Packages for optional software extension.

### Software Options

Choose between different packages to fulfill your demands. Each package contains powerful applications or functions to enhance and individualize your balance for your workflows.

- QApp Package Pharma
- QApp Package Advanced Applications
- QApp Package Utilities
- QApp Package Connectivity
- All Inclusive QApp Package (with new orders only)



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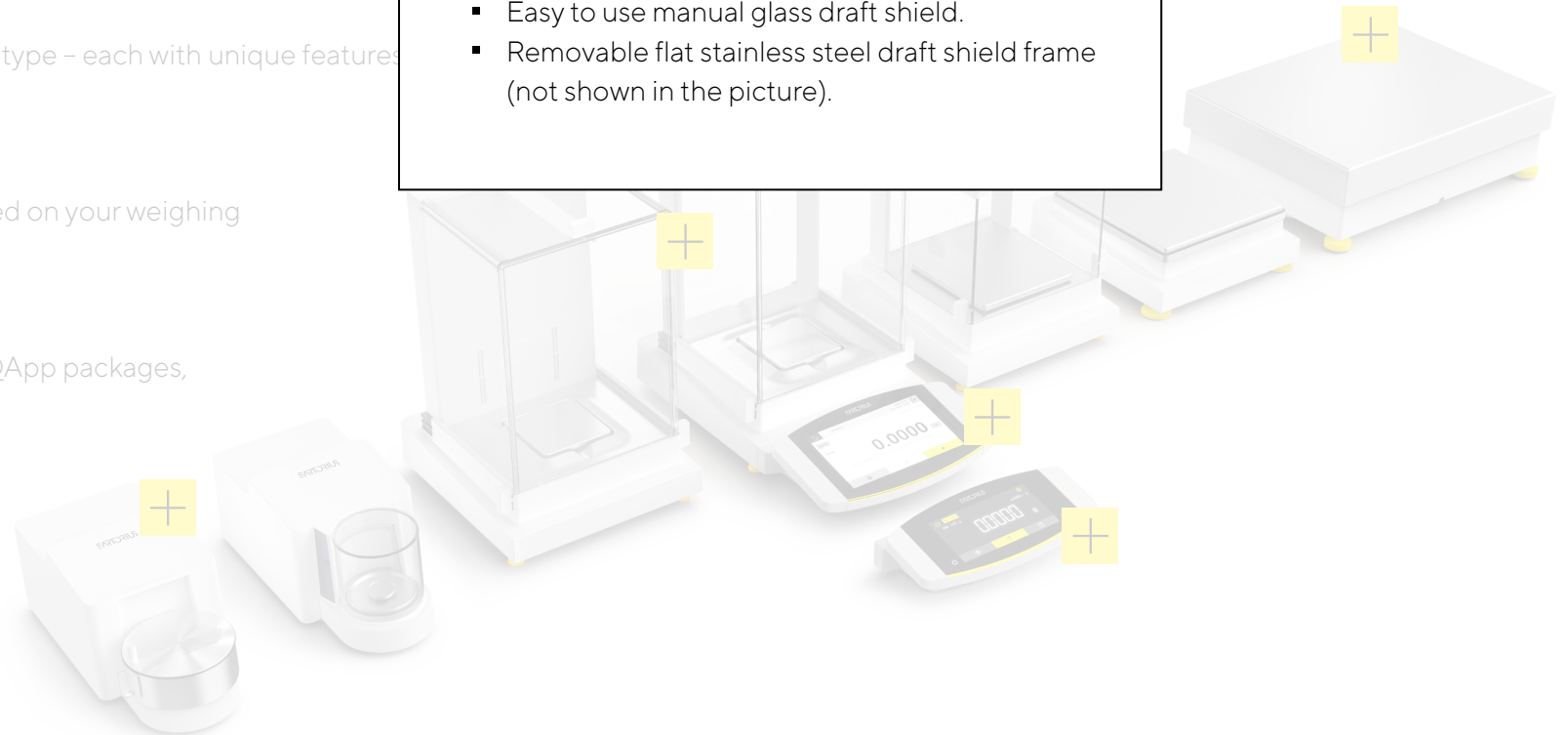
## Software

With up to 60 optional software applications clustered into QApp packages, and with continuous software development, we support your workflows now and in the future.

✕

**Precision Balances**

- Max. capacity between 320 g and 14,200 g | scale interval with a range of 1 mg to 100 mg.
- Easy to use manual glass draft shield.
- Removable flat stainless steel draft shield frame (not shown in the picture).



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### Draft Shields

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### Display

Choose between advanced and essential user interface applications and requirements.

### Software

With up to 60 optional software applications clustered into QApp packages, and with continuous software development, we support your workflows now and in the future.

✕ Port maximal

**MCE Essential User Interface**

Large, high-contrast touch display with factory-installed essential weighing applications for easy operation.



# Customizable Modularity – Thousands of Configurations

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## Weighing Modules

Choose from a range of 45 different weighing modules that best fit your preferences.

## Draft Shields

Choose from 7 different options, depending on your balance type – each with unique features to support maximal balance performance and user-centric design.

## Display

Choose between advanced and essential user interface, based on your weighing applications and requirements.

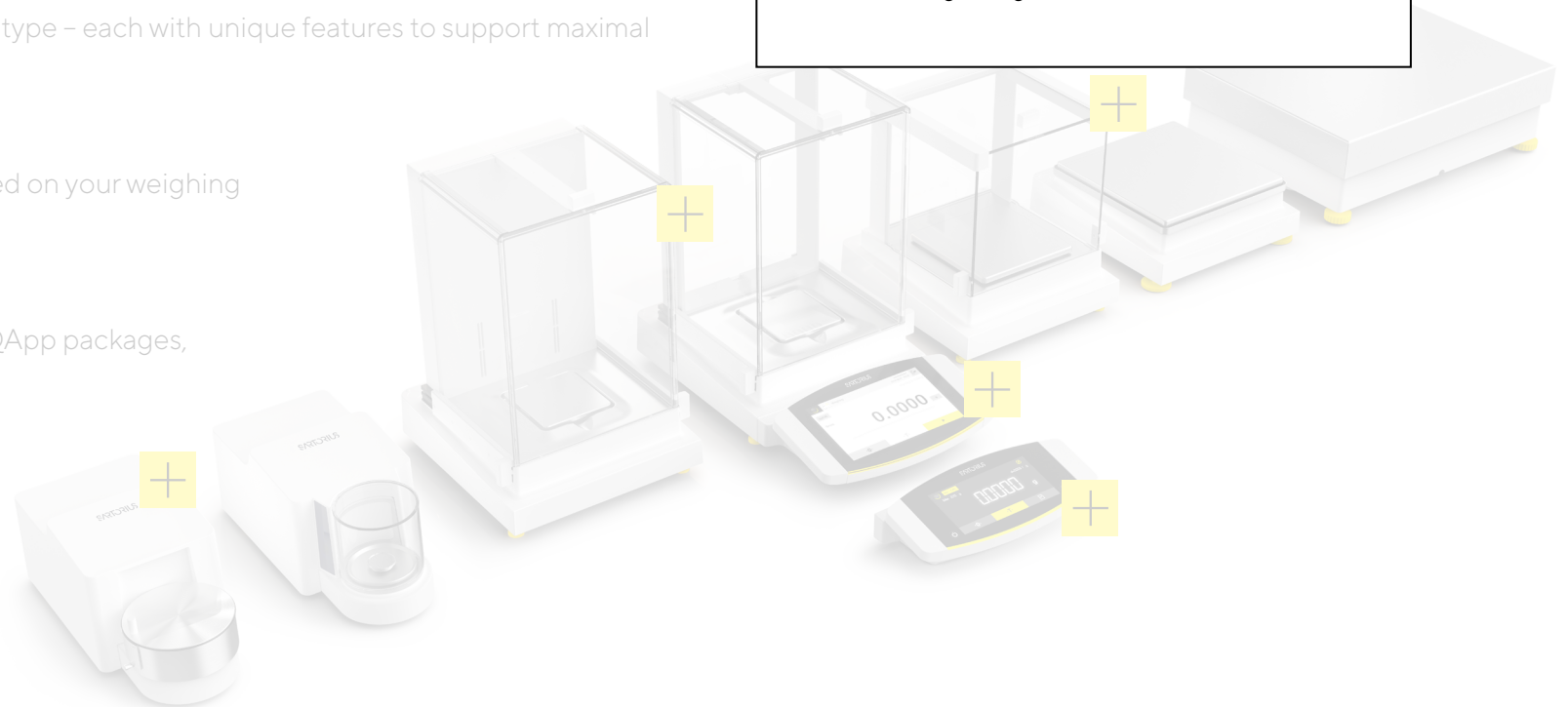
## Software

With up to 60 optional software applications clustered into QApp packages, and with continuous software development, we support your workflows now and in the future.

✕

**High-Capacity Balances**

Max. capacity between 11200 g and 70200g g | scale interval with a range of 100 mg to 1 g.



# Customizable Modularity – Thousands of Configurations

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## Weighing Modules

Choose from a range of 45 different weighing modules that best fit your preferences.

## Draft Shields

Choose from 7 different options, depending on your balance type – each with unique features for balance performance and user-centric design.

## Display

Choose between advanced and essential user interface, based on your weighing applications and requirements.

## Software

With up to 60 optional software applications clustered into QApp packages, and with continuous software development, we support your workflows now and in the future.

### Semi-Micro & Analytical Balances

- Max. capacity between 120 g and 520 g | scale interval with a range of 0.01 mg to 0.1 mg.
- Automatic glass draft shield with or without integrated ionizer to eliminate interfering electrostatic charges on samples and sample containers.
- Manual glass draft shield with smooth-action doors.



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## Weighing Modules

Choose from a range of 45 different weighing modules that best fit your preferences.

### Draft Shields

Choose from 7 different draft shield configurations to optimize balance performance.

### Display

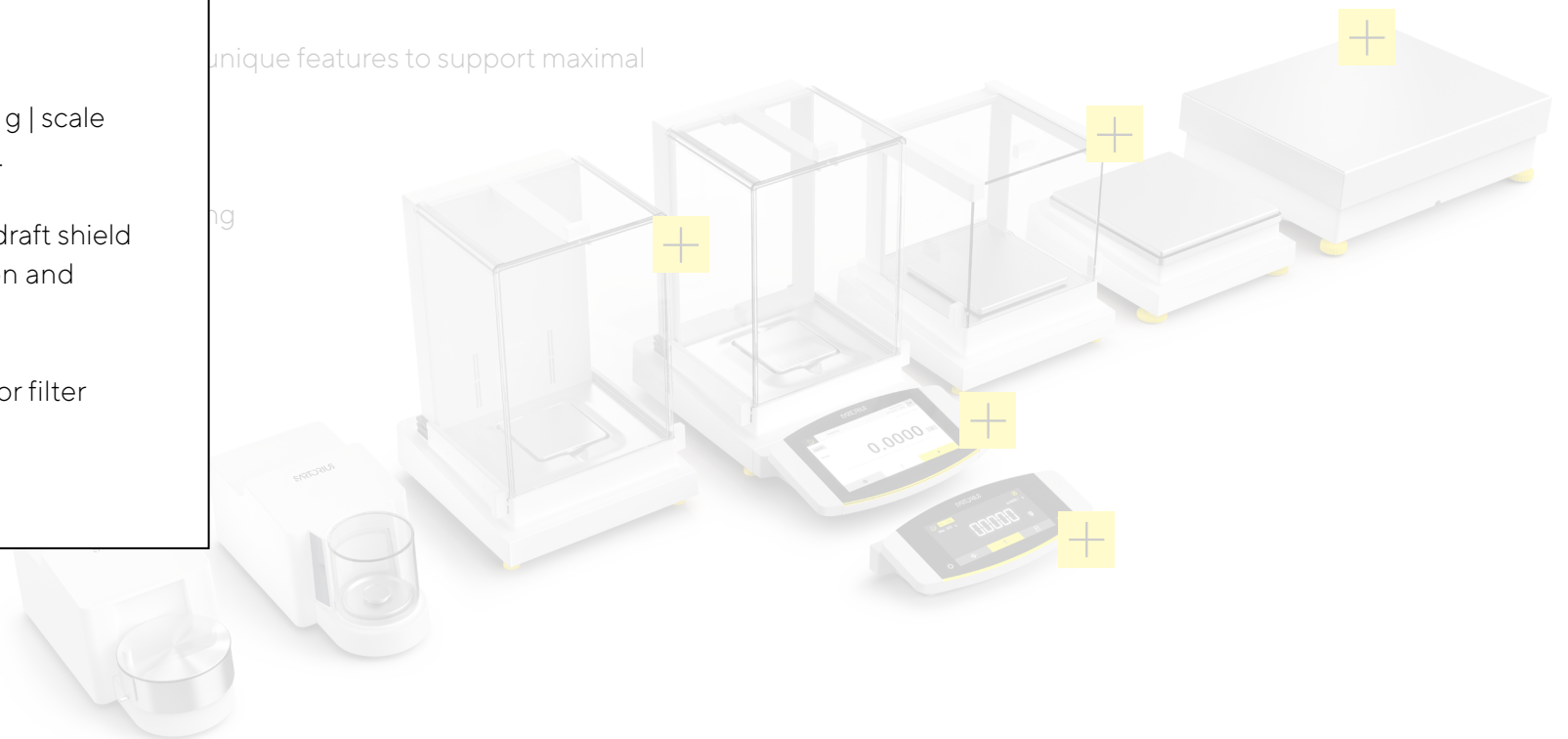
Choose between different display configurations for various applications and user preferences.

### Software

With up to 60 different software configurations and with continuous software updates, your workflow is now a

### Ultra-Micro & Micro Balances

- Max. capacity between 2.1 g and 10.1 g | scale interval with a range of 0.1 µg to 1 µg.
- Automatic, motorized, round, glass draft shield with learning capability, illumination and integrated motion sensor.
- Manual stainless steel draft shield for filter weighing applications.



# Connectivity: State-of-the-art feature set, designed with long-term flexibility and efficiency in mind

- Our unique, open system architecture enables easy integration with lab software (directly connected to the PC) and LIMS – eliminating the need for separate software “islands” and expensive “middleware” and hardware that are both costly to acquire and maintain. Optional USB-C connectivity is also available.
- Standard protocols available for HTTPS, FTP-S, SMB, IPP, PostgreSQL and REST-Webservices for direct integration into laboratory IT systems. Additionally, Cubis II offers connectors for bi-directional communication into multiple commercially-available LIMS and laboratory software systems.
- Initial configurations can be enhanced over time with the option to add to the system as needs change or new requirements arise.

Select only the hardware & software packages for your laboratory needs



# As Your Laboratory Requirements Change, Easily Adapt Your Hardware and Software

- Instrument lifetime free upgrades - eliminates expensive annual licensing fees and renewal costs.
- Initial configurations can be enhanced over time with the option to add to the system as needs change or as new requirements arise.



# Adaptable Lab Balance to Your Specific Needs

## Cubis® II Intelligence by Design

Whether a pharmaceutical lab, an academic lab or an industry lab, lab weighing requirements can be highly individual. For instance, labs often have their own protocols for weighing and preparing samples. With its practical array of optional accessories, Cubis® II offers the potential for fully personalized application add-ons that enable faster and more efficient workflows and enhance protocol reliability and repeatability

### Intelligence by Design

- The Cubis® II balance, with pharma package, contains all the technical
- Build-in applications guide you through your workflows.
- Fast and easy leveling guaranteed with automatic, motorized leveling function.
- Innovative draft shield technology with gesture sensor and memory functions.
- Climate sensor for environmental monitoring.
- Built-in ionizer for automatic electrostatic elimination.
- Status Center for user notifications and alerts\*.
- Ultramicro- and micro balances with innovative technology for top-edge performance.

\*available with the MCA interface

QApp Center

Automatic Leveling

Gesture Control

Ultra-Micro & Micro  
Balances

Built-in Ionizer

Climate Monitoring

Status Center  
Notifications

# Onboard QApp Center

Every Cubis® II balance includes a number of native apps for scientists in R&D and analytical laboratories needing the most reliable lab weighing results. These applications cover the following: Mixing, Statistics, Totalization, Solids Density, Percentage Weighing, Multiplication, Averaging, Check weighing, Highest Peak Value, Counting, Interval print, Barcode print

## Pharma Package QP1

The Pharma software application package contains applications concerning the topic compliance with pharmaceutical-relevant guidelines, such 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.

## Advanced Package QP2

The Advanced software application package includes various complex weighing applications incl. 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.

## Utilities package QP3

The Utility software application package 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.

## Connectivity Package QP4

The Connectivity software application package includes applications for data exchange, for example to Windows file server, FTPS, STARLIMS™, etc.

## Special QApps

QApp Video & Application  
Note Library

QApp Center

Automatic Leveling

Gesture Control

Ultra-Micro & Micro  
Balances

Built-in Ionizer

Climate Monitoring

Status Center  
Notifications

# QApp Video & Application Note Library

QApp Center

USP Advanced

STARLIMS

QApp Center

Printer Queue

Formulation

Formulation

Automatic Leveling

Task Management

Density Determination Solid

Pipette Check

Gesture Control

Pipette Calibration

Density Determination Liquid

Tablets and Capsules Check

Ultra-Micro & Micro Balances

User Cal

Web Browser

Dark Grey: Videos  
Light Grey: Application Note

Built-in Ionizer

Climate Monitoring

Status Center Notifications

# Automatic Motorized Leveling

## The only balance in the market that offers real automatic leveling

Balance is automatically leveled by built-in motors\*, and constantly self-checks to immediately alert you when it needs re-leveling.

Q-Level combines improved sensors and the most advanced display technology to make leveling easier, faster, and more accurate.

MCA or MCE display and control units offer interactive prompting to guide you during manual leveling. While Q-Level is active, the display will show you all the information you need: the position of the air bubble as well as text prompts, or icons on MCE, so you know which leveling foot to turn in which direction.

\*all models with capacity ≤ 8.2 kg can be automatically leveled by built-in motors, with clear graphic support in the display (graphic support on MCA interface and symbol support on MCE interface.)

Video Automatic Motorized  
Leveling

QApp Center

Automatic Leveling

Gesture Control

Ultra-Micro & Micro  
Balances

Built-in Ionizer

Climate Monitoring

Status Center  
Notifications

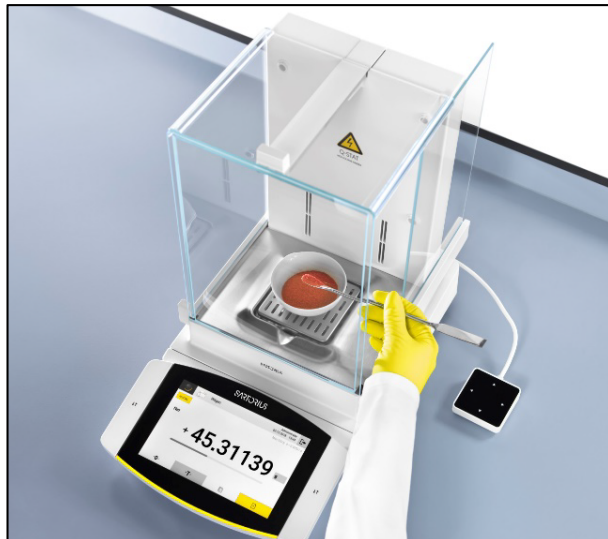
# Gesture Sensor For Touch-Free Draft Shield Operation

Open the motorized draft shield door with a simple movement of the hand over the infrared sensor. The draft shield door automatically closes upon removal of your hand.

This feature provides additional safety, especially applications involving toxic substances.

This infrared sensor can also be used to trigger printing.

Automatic open / close function and touchless print activation is available on selected draft shields with both interfaces for all Cubis® II balances



Video  
Gesture Control

QApp Center

Automatic Leveling

Gesture Control

Ultra-Micro & Micro  
Balances

Built-in Ionizer

Climate Monitoring

Status Center  
Notifications

# Ultra-Micro and Micro Balances

With unique new features Cubis® II Micro Balances offer an outstanding performance with a capacity of 10g and readability of 1 µg. Cubis® II Ultra-micro and Micro Balances fulfill all requirements for pharma and GxP compliance and fulfill the requirements of the US Pharmacopeia Chapter 41 for very low minimum weight. (with optional QApp Pharma Package)

## Intelligence by Design

- Motion sensor for touch free opening/closing of the draft shield
- Illuminated draft shield, optimal view, optimal handling even for the smallest amounts of samples
- The first automated motorized leveling for ultra-micro and microbalances
- High quality titanium weighing pans with non-magnetic features for better weighing performance

## Efficient cleaning:

keeping the balance clean to prevent cross-contamination has a key importance. The design of the ultra-micro and microbalances allows an easy disassemble and assemble of the draft shields which makes the cleaning process and the removal of any sample residues fast and simple

Video  
Micro Balances

QApp Center

Automatic Leveling

Gesture Control

Ultra-Micro & Micro  
Balances

Built-in Ionizer

Climate Monitoring

Status Center  
Notifications

# High-Efficiency, Integrated Ionizer For Neutralization of Electrostatic Charge Operation

The glass panels of all Cubis® II draft shields are coated with a conductive layer, preventing external transfer of electrostatic charges generated by users, ensuring reliable and stable results.

Integrated in draft shield model I, the Q-Stat ionizer eliminates electrostatic charges from both sample containers and samples within few seconds, preventing errors from electrostatic forces of your measurements.

The inclusion of four ion jets ensures effective electrostatic neutralization without disturbing air flows



Video Ionizer

QApp Center

Automatic Leveling

Gesture Control

Ultra-Micro & Micro  
Balances

Built-in Ionizer

Climate Monitoring

Status Center  
Notifications

# Climate Module Operation

Climate sensor for temperature, humidity and air pressure is an integrated option for draft shield A or I or an external option for other draft shields.

Set limits and warnings for temperature, humidity and air pressure.

Data is displayed graphically and can be printed.



QApp Center

Automatic Leveling

Gesture Control

Ultra-Micro & Micro  
Balances

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Status Center  
Notifications

# Status Center Notifications

The Status Center shows all information about your balance and environmental conditions, e.g. calibration, leveling, temperature, humidity, air pressure and service, centralized in a dashboard.

In case of warnings or errors, you get detailed help and support.



Video  
Status Center

QApp Center

Automatic Leveling

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Climate Monitoring

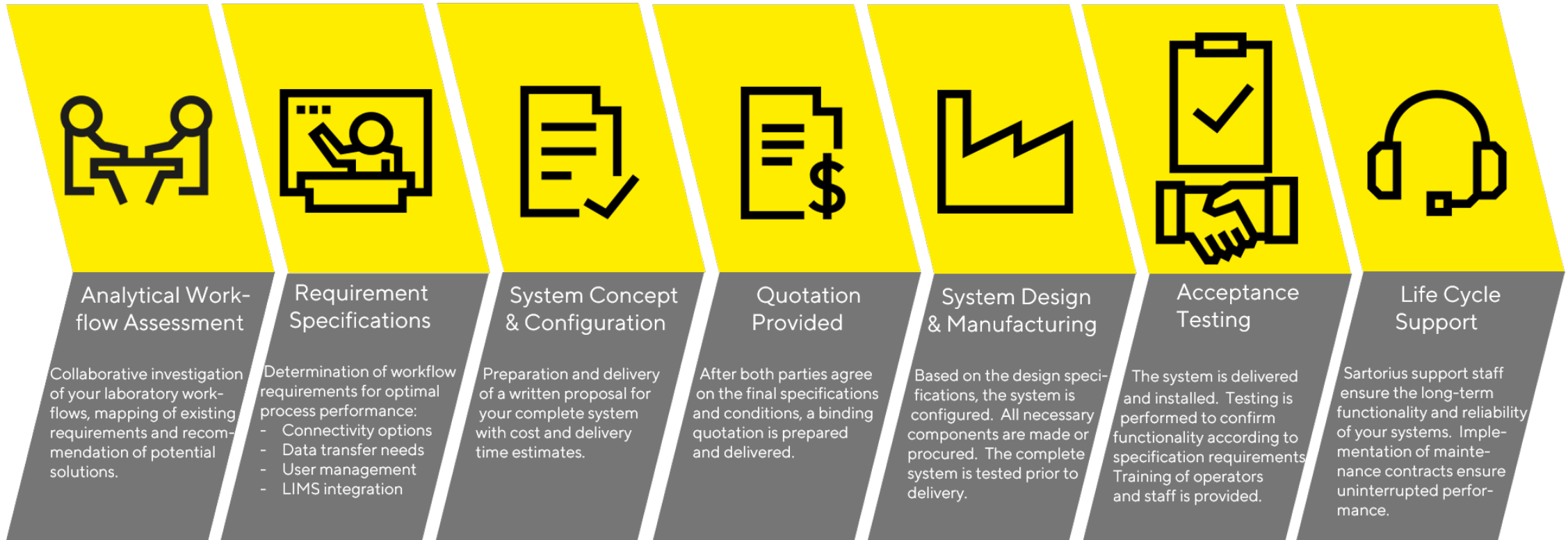
Status Center  
Notifications

# Want to Learn More ?

Let's Collaborate On A Customized Solution For Your Lab ....

## Concept Phase

## Implementation Phase



# Sales and Service Contacts

For further contacts, visit [sartorius.com](http://sartorius.com)

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