Roche

Take your lab's performance to the peak

with cobas® 8000 modular analyzer series

cobas®

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While your lab is facing rising complexity and unpredictability, it is also facing intensifying pressure to deliver. Reliability of your analyzer and vendor are not just a convenience – they are critical to maximizing your lab's success and upholding the standard of care to which you aspire.

***cobas®** 8000 modular analyzer series is a scalable module based Serum Work Area solution for a wide range of in vitro diagnostics testing of Immunoassay and Clinical Chemistry designed for high throughput laboratories. With **cobas®** 8000 modular analyzer series, your lab will reach a new height of performance. This means unprecedented productivity and distinctive uptime, the broadest assay menu on one consolidated platform and continuous access to breakthrough assays that let you stay at the forefront of the industry.*

*With the **cobas®** 8000 modular analyzer series and Roche's commitment to innovation, you can take your lab's performance to the peak.*

Your time is precious
We help you use it wisely

In the lab, every minutes counts – for you and your team, for the physician and the healthcare institution, for the patient and their family. Any inefficiencies and unexpected interruptions result in delays which are costly. **cobas**® 8000 modular analyzer series is designed to help you use your time wisely.

Ensure non-stop operation through exceptional uptime

Reliability is the foundation of efficiency for today's leading labs as unreliability can have a widespread impact on a lab's performance. Unplanned downtime can lead to interruption of services and lost revenue, outsourcing of tests and increased risk of diminished quality of results. **cobas®** systems are designed to ensure non-stop operation and are well known and trusted in the field for their high reliability.

Reliability you can trust

cobas® 8000 modular analyzer series delivers a distinctive uptime of more than 99%, proven by more than 5000 installations in the market and 15 000 analytical units worldwide[1]. Having a reliable analyzer means less interruption of services and less time spent on troubleshooting, thus higher productivity with more predictable turnaround times.

Less
interruption of services

Less
troubleshooting

More
productivity

More
predictable turnaround time

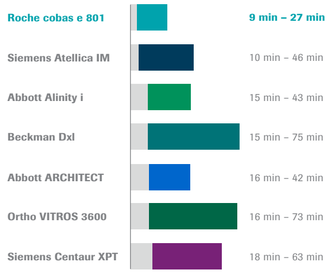
Empower your physicians to take action faster

Standards are being raised across health systems, as patient and physician satisfaction and fast clinical decision making are becoming more prominent quality metrics. Choosing an analyzer that supports short and predictable turnaround times at peak times is a key to meet these standards.

Get answers fast with short and predictable turnaround times

cobas® 8000 is designed to support fast and predictable turnaround time (TAT) across all assays. Comparing it to competitive immunoassay systems, **cobas e** 801 analytical unit offers the shortest turnaround times and thus faster result delivery to physicians and patients for vital clinical decision making. **cobas e** 801 also offers less variability in assay times which means more predictability.

Immunoassay incubation times by vendor[2]



Your space is limited
We help you make the best of it

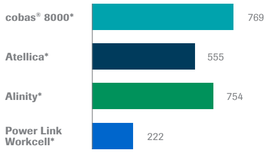
Growth brings opportunities but also challenges. While working to expand testing services and increase revenue you may ask yourself: how can you handle the higher volumes in the most cost- and space-efficient way? The **cobas**® 8000 modular analyzer series is designed to deliver true productivity for your lab.

Make sure you decide for true productivity

Ultimately, each lab seeks a solution that delivers maximum productivity per invested space. But what is productivity? At Roche we believe that there are three key system characteristics that lead to true productivity and we continuously strive to deliver these for your lab:

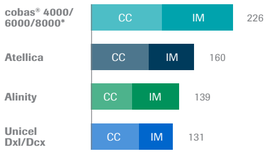
1. High throughput per square meter to manage the large volume of testing efficiently
2. Broad assay menu to eliminate the need for different analyzers and/or outsourcing
3. High number of reagent channels to consolidate more testing on a single platform

High throughput per square meter[3]



***cobas® 8000** Core unit | ISE | c 702 | e 801
***Atellica** 2 Atellica® Sample Handlers | 3 Atellica® CH 930 Analyzers | 2 Atellica® IM 1600 Analyzers
***Alinity** 2 Alinity cic, 1 Alinity i
***Power Link Workcell** 1* Power Link I 1*DxC 700 AU I 1*DxI 800

Broad assay menu[4]

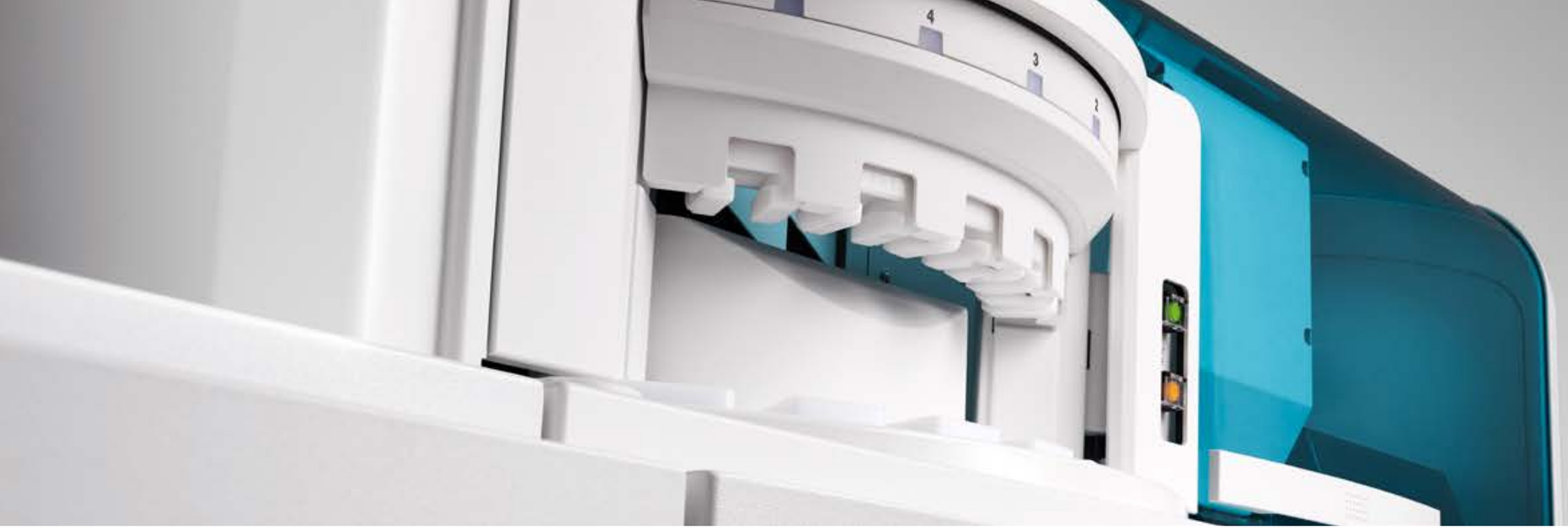


Maximum number of reagent channels per one line of cobas® 8000 modular analyzer

SWA configurations	Up to **258** reagent channels
Clinical chemistry configurations	Up to **280** reagent channels
Immunochemistry configurations	Up to **192** reagent channels

Your team is pushed to their limits
We help them focus on the tasks that matter

Whilst the pressure to deliver from many different angles increases, keeping your team engaged and focused on the tasks of importance can be difficult but is of paramount importance for your lab's success. The **cobas®** 8000 modular analyzer series is designed to eliminate hurdles that may cause unnecessary stress.



Ensure peace of mind for your team with reliable and safe solutions

Unplanned downtime and lack of confidence in results are some of the most stressful things that can happen in the lab. They shift attention to time-consuming, hands-on workarounds or sample reruns which could affect staff morale and motivation. Additionally, they pose risk on the quality of results and as such on the lab reputation. With **cobas** 8000 modular analyzer series we deliver distinctive reliability of the system through sound architecture and confidence in the results through various safety features.

Reliability

cobas® 8000 modular analyzer series delivers a distinctive uptime of more than 99%, proven by more than 5000 installations in the market[1].

Safety of results

Immunoassay analytical units

Disposable AssayTips/AssayCups
cobas 8000 immunoassay analytical units utilize single-use disposable AssayTip per each pipetting event and single-use AssayCup per each incubation event to completely eliminate the risk of sample carry over.

Clinical chemistry analytical units

Carryover evasion program
The sample probes are rinsed inside and outside with deionized water each time after dispensing a sample. Additionally, for applications that are sensitive to sample carryover, special wash can be programmed for an extra wash of reagent probes, sample probes, and reaction cells with basic and acidic wash solutions.

Ultrasonic Mixing
cobas 8000 clinical chemistry analytical units feature ultrasonic mixing for non-contact mixing of the reaction mixture in the reaction cell to eliminate the risk of carryover during this event.

Enable your team to work more efficiently through standardized solutions

Lab standardization enables you to do more work on fewer instruments, through consolidation of workflow, systems and reagents. Standardization also provides efficient and compatible solutions for network cooperation. With the **cobas**® Serum Work Area systems Roche offers analytics platforms that satisfy low-, medium- and high-volume testing needs all standardized on the same reagents, detection technology, reference ranges and sharing common user interfaces.

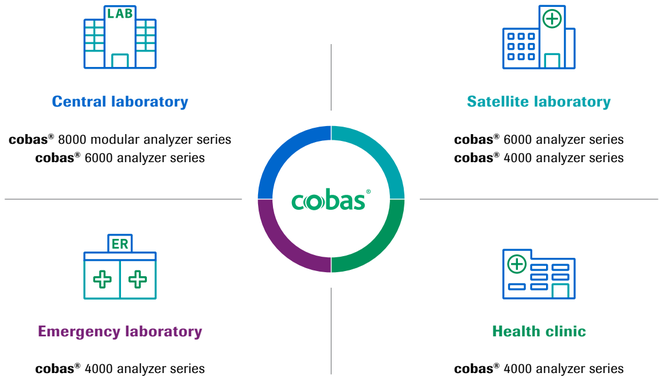
Essential benefits of standardization

Improved speed and accuracy of care
Same reagents and detection technology mean standardized reference ranges which improve the speed and accuracy of care and reduce the need for rebaselining.

Population management
By facilitating larger, consistent datasets, standardization enables healthcare professionals to interpret greater health trends for true population health management.

Simplified training and staff allocation
Common user interfaces between our **cobas** systems mean simplified staffing and training, as well as flexible staff allocation as healthcare centers are consolidating into larger integrated health networks.

Same reagents | Same detection technology | Same reference ranges | Common user interfaces



Reduced workload with ready to use reagents

The vast majority of **cobas**® 8000 reagents are designed to be ready to use, requiring no operator intervention or preparation – they can simply be taken out of the fridge and loaded onto the system. They also come with industry leading onboard stability and lot calibration stability.

Reduce tedious manual work with ready to use reagents

Liquid, ready-to-use reagents and many automated reagent handling processes in our system reduce your team's overall hands-on time, thus allowing them to focus on more value-added tasks.

Reduce tedious manual work through integration into lab automation

At Roche, laboratory automation solutions deliver the quality and reliability you expect, with the personalization required by low-, mid- and high-volume laboratories. With a complete portfolio in the market, Roche's Personalized Lab Automation provides customized solutions for every lab.

Virtual automation

To have the control you need, ensuring quality and efficiency across your lab, virtual automation gives you the capability to track your samples and reduce manual tasks through **cobas**® infinity IT solutions.

Standalone automation

Pre- and post-analytical tasks are automated, offering maximum efficiency through flexible standalone solutions. It significantly reduces manual steps in the lab, enhancing error handling, safety and process quality. (**cobas p** 312, **cobas p** 512, **cobas p** 612, **cobas p** 501, **cobas p** 701)

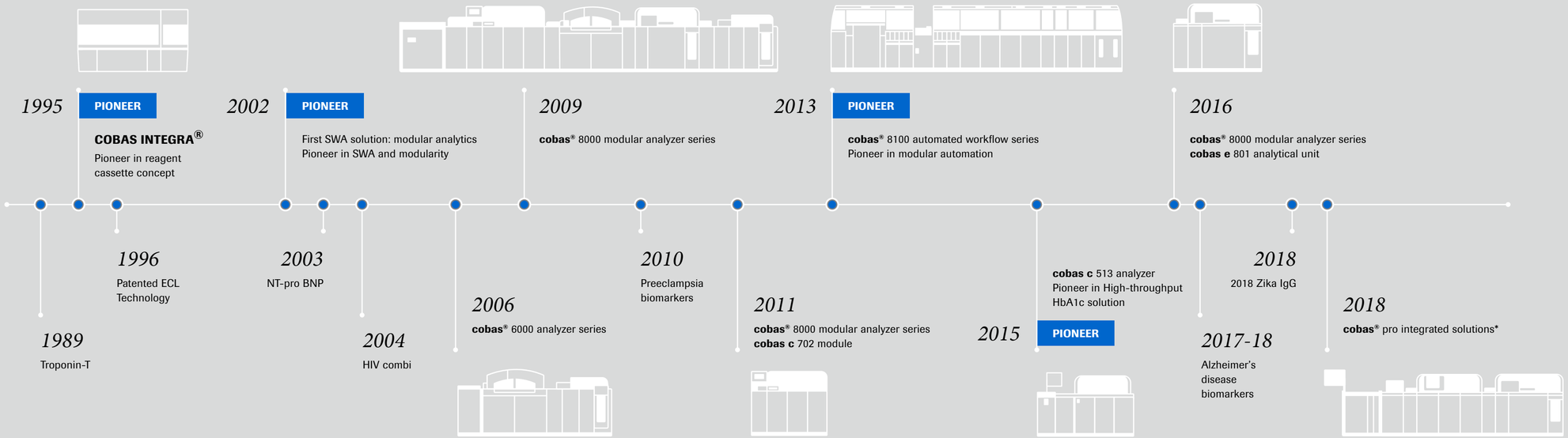
Connected automation

In addition to having all the benefits of standalone automation, connected automation offers transportation. Physically connecting different instruments allows for maximum predictability of time to test results. (**cobas**® connection modules, **cobas**® 8100 automated workflow series)

Your future is unpredictable
We help you succeed through
continuous access to innovations

Choosing the right solution and vendor to partner with is not a small undertaking – it is a choice that impacts your lab's ability to fulfill performance and quality standards but also your ability to remain competitive. At Roche we believe in the power of innovation to advance and improve diagnostics possibilities and accessibility – for a better future of the patients and your lab. This is why we are committed to high investment in R&D – the highest in the life sciences industry and among the top 10 in any industry - with two key objectives: to continue pioneering lab solutions and delivering greater medical value.

Partner with a company that has a proven track record of pioneering lab solutions



**cobas® pro integrated solutions CE mark expected in December 2018*

Our History of Innovation

Understanding the shift of laboratories workflow needs, we have pioneered the integration of clinical chemistry and immunochemistry, creating the concept of the 'Serum Work Area' back in 2002. Starting with Modular Analytics, we were the first to offer modularity and scalability which brought a high consolidation power for growing testing needs. We introduced the first common reagent and platform concept designed to reduce the complexity of laboratory operation and provide efficient and compatible solutions for laboratory networks.

Our success track record from the past however doesn't stop us from continuously looking ahead and challenging the status quo. Three of many areas Roche is investing in include the integrated core lab, mass spec and digital diagnostics.

Focused innovation of our assay portfolio

Menu expansion
Discovery of new assays in the areas of unmet medical needs to help clinicians improve outcomes for their patients.

New claims for existing assays
Generating new claims for existing assays for wider application.

Extending evidence base
Extending the evidence-base for existing assays through clinical studies to generate higher awareness and broader access to innovation.

Commitment to exceptional assay quality

Advanced assay design
- Outstanding precision across measuring range
- High sensitivity in areas where it matters
- Wider measuring ranges; fewer dilutions and repeats

Consistent, standardized results
- Consistent patient results across all platforms
- Excellent lot-to-lot consistency
- Assays standardized against reference method or reference material

Designed for convenience
- Short and predictable assay TAT
- Low sample volume
- No reagent preparation required

Support better outcomes by delivering greater medical value

Roche strategy to deliver medical value is through focused innovation on expanding our assay portfolio and commitment to exceptional assay quality because accurate results support the most efficient and effective delivery of patient care.

cobas® 8000 modular analyzer series

At a glance

01 Core unit
The core unit is always on the left side of the instrument and it is the loading and unloading point for samples, achieving a throughput of up to 1000 samples per hour. It features a dedicated STAT port for easy prioritization of emergency samples and allows for a bidirectional connectivity to pre-analytics.

02 ISE module
The **cobas** ISE module measures the concentration of sodium (Na+), potassium (K+) and chloride (Cl-). It is available in two configurations with identical footprint but different throughout: 900 or 1,800 tests per hour.

03 Up to 4 analytical units
One configuration of the **cobas**® 8000 modular analyzer series can consist of one up to four analytical units. The modular and scalable design of **cobas**® 8000 modular analyzer series offers more than 440 configurations with many choices to tailor solutions to individual laboratory needs now and in the future.

04 Module sample buffer
A module sample buffer (MSB) is attached to the left of each **cobas c** module and of each **cobas e** module. The MSBs serve as a buffering rack and can deliver sample racks to any module at any time. The MSBs allow for efficient sample transport and management across the analyzer.

cobas® 8000 modular analyzer series

At a glance

cobas® 8000 modular analyzer core unit | up to **1,000** sample/hour

ISE module

ISE | Up to **900** tests/hour
Up to **1,800** tests/hour

Clinical chemistry analytical units

cobas c 502 | Up to **600** tests/hour
60 reagent channels

cobas c 701 | Up to **2,000** tests/hour
70 reagent channels

cobas c 702 | Up to **2,000** tests/hour
70 reagent channels

Immunoassay analytical units

cobas e 602 | Up to **170** tests/hour
25 reagent channels

cobas e 801 | Up to **300** tests/hour
48 reagent channels

Configuration possibilities

Combinations of those analytical units offer more than 440 configurations with many choices to tailor solutions to individual laboratory needs. On-site expandability and flexible consolidation potential allow for efficient change management.

Serum Work Area (SWA) configurations

cobas 8000 can be configured into a SWA configuration consisting of a combination of clinical chemistry and immunoassay analytical units which are seamlessly integrated. Roche has been the first company in the industry to make this integration possible. The maximum SWA configuration includes one core unit + optional ISE module + a combination of up to 4 clinical chemistry and immunoassay analytical units.

Maximum throughput and reagent channel positions	Up to **8,100** tests/hour Up to **258** reagent channels

Clinical chemistry configurations

The maximum clinical chemistry configuration includes one core unit + optional ISE module + a combination of up to 4 clinical chemistry analytical units.

Clinical chemistry configurations	Up to **9,800** tests/hour Up to **280** reagent channels

Immunoassay configurations

cobas 8000 can be configured into a immunoassay only configuration. The maximum immunoassay configuration includes one core unit + a combination of up to 4 immunoassay analytical units.

Immunoassay configurations	Up to **1,200** tests/hour Up to **192** reagent channels

cobas® 8000 modular analyzer series

Overview of core components and analytical units

Core components

Core Unit
- Loading capacity of 300 samples (15 racks/tray, 5 samples/rack)
- Throughput of up to 1,000 samples/hour
- Dedicated STAT port
- Optional sample rotation unit

cobas ISE module
- Sodium, potassium, chloride
- 900 or 1,800 tests/hour
- ISE specific sample probe with clot detection
- Independent processing line

Module Sample Buffer (MSB)
- Capacity for 20 sample racks; additional capacity of 100 samples per module
- Environmental controlled compartment for 5 Auto QC racks
- Backup operation port
- Random access for the racks; racks can go from everywhere to everywhere

Clinical chemistry analytical units

cobas c 702 module
- Clinical chemistry, homogeneous immunoassays
- Throughput of up to 2,000 tests/hour
- 70 reagent channels
- Specimen integrity via serum indices, clot and liquid level detection
- Contact free ultrasonic mixing
- 2 sample probes
- 4 reagent probes
- Pipetting cycle time of 1.8 seconds

+

Reagent Manager
- 10 reagent positions
- Reagent RFID reader
- Continuous reagent loading during operation
- Automatic reagent cassette decapping
- Automatic reagent cassette unloading

cobas c 701 module
- Clinical chemistry, homogeneous immunoassays
- Throughput of up to 2,000 tests/hour
- 70 reagent channels
- Specimen integrity via serum indices, clot and liquid level detection
- Contact free ultrasonic mixing
- 2 sample probes
- 4 reagent probes
- Pipetting cycle time of 1.8 seconds

cobas c 502 module
- Clinical chemistry, homogeneous immunoassays, HbA1c (whole blood measurement)
- Throughput of up to 600 tests/hour
- 60 reagent channels
- Continuous reagent loading during operation
- Specimen integrity via serum indices, clot and liquid level detection
- Contact-free ultrasonic mixing

Immunoassay analytical units

cobas e 801 module
- Heterogeneous immunoassays
- Throughput of up to 300 tests/hour
- 48 reagent channels
- Carryover-free disposable tips
- Clot and air bubble detection

+

Reagent Manager
- Reagent RFID reader
- Continuous reagent loading during operation
- Automatic reagent packs unloading

cobas e 602 module
- Heterogeneous immunoassays
- Throughput of up to 170 tests/hour
- 25 reagent channels
- Carryover-free disposable tips
- Clot and air bubble detection

cobas® 8000 modular analyzer series

Technical specifications

Configurations	The system offers more than 440 scalable configurations. A configuration consists of the core unit and 1 up to 4 analytical units (excluding the optional cobas ISE module). The analytical units are: **cobas** ISE module, **cobas c** 701 module, **cobas c** 702 module, **cobas c** 502 module, **cobas e** 801 module, **cobas e** 602 module.
Detection methods	*Clinical Chemistry:* Photometric *Immunoassay:* Electrochemiluminescence (ECL)
Maximum throughput	Up to 9800 tests/hour/configuration ***cobas** ISE module:* up to 1800 tests/hour ***cobas c** 701 module:* up to 2000 tests/hour ***cobas c** 702 module:* up to 2000 tests/hour ***cobas c** 502 module:* up to 600 tests/hour ***cobas e** 801 module:* up to 300 tests/hour ***cobas e** 602 module:* up to 170 tests/hour
Sample types	Serum, Plasma, Urine, CSF, Supernatant and Whole blood (not applicable for the **cobas c** 701 module and the **cobas c** 702 module)
Sample tubes	*w* 13 x 75 mm, *w* 13 x 100 mm, *w* 16 x 75 mm, *w* 16 x 100 mm, Hitachi standard cup 2.5 ml, **cobas** sample cup 2.5 ml, Hitachi microcup* 1.5 ml *w* 11-16 x 63-102 mm (for **cobas e** 602 module: *w* 13-16 mm)
Pediatric sample tube	Yes (Hitachi microcup*: 50 µl dead volume)
Sample capacity	*Core unit loading capacity:* 300 samples *Module Sample Buffer (MSB) capactiy:* 100 samples *Core unit throughput:* up to 1000 samples/hour
Sample volume	***cobas c** 701 module:* Average 5.5 µl ***cobas c** 702 module:* Average 5.5 µl ***cobas c** 502 module:* Average 7.0 µl ***cobas e** 801 module:* Average 19.4 µl ***cobas e** 602 module:* Average 26.8 µl
Automatic dilution	*Yes*

* *not applicable for the cobas e 602 module*

Reagent capacity	Up to 280 reagent channels/configuration ***cobas** ISE module:* Na, K and Cl ***cobas c** 701 module:* 70 reagent channels ***cobas c** 702 module:* 70 reagent channels ***cobas c** 502 module:* 60 reagent channels ***cobas e** 801 module:* 48 reagent channels ***cobas e** 602 module:* 25 reagent channels
Reagent concept	Ready to use
Reagent loading	Continuous reagent loading during operation (valid for **cobas c** 702 module, c**obas c** 502 module and **cobas e** 801 module)
Sample clot detection	Yes
Sample interference measurement	Serum indices (icterus, hemolysis, lipemia) measured on the clinical chemistry analytical units
Remote diagnostics	Yes
Connectivity to smart phones and tablets	Up to 3 systems can be connected to smart phones and tablets (iOS and Android) using **cobas** mobicheck application. The application allows the monitoring of the systems, alarms and reagent information.
Dimensions (W x D x H)	*Core unit (including STAT port):* 102 x 114 x 93 cm ***cobas** ISE module:* 45 x 114 x 115 cm ***cobas c** 701 module (including MSB):* 150 x 114 x 135 cm ***cobas c** 702 module (including MSB):* 150 x 114 x 135 cm ***cobas c** 502 module (including MSB):* 150 x 114 x 130 cm ***cobas e** 801 module (including MSB):* 150 x 114 x 162 cm ***cobas e** 602 module (including MSB):* 150 x 106 x 114 cm
Weight	*Core unit:* 197 kg ***cobas** ISE module:* 180 kg (ISE 1800), 170 kg (ISE 900) ***cobas c** 701 module (including MSB):* 697 kg ***cobas c** 702 module (including MSB):* 759 kg ***cobas c** 502 module (including MSB):* 535 kg ***cobas e** 801 module (including MSB):* 610 kg ***cobas e** 602 module (including MSB):* 585 kg
Electrical requirements	200/208/220/230 VAC, 50/60 Hz
Noise level	≤ 65 dB

cobas® 8000 modular analyzer series

Technical specifications (continued)

Pre-Analytics connectivity	Unidirectional, bidirectional
Power consumption	*Core unit (including the control unit):* 1 kVA (actual maximum: 0.4 kVA) ***cobas*** *ISE module:* 0.5 kVA (actual maximum: 0.2 kVA) ***cobas c*** *701 module (including MSB):* 3 kVA (actual maximum: 2.3 kVA) ***cobas c*** *702 module (including MSB):* 3 kVA (actual maximum: 2.3 kVA) ***cobas c*** *502 module (including MSB):* 2.5 kVA (actual maximum: 1.7 kVA) ***cobas e*** *801 module (including MSB):* 2 kVA (actual maximum: 1.5 kVA) ***cobas e*** *602 module (including MSB):* 3 kVA (actual maximum: 1.5 kVA)
Heat generation	*Core unit (including the control unit):* 3600 kJ/h (actual maximum: 1440 kJ/h) ***cobas*** *ISE module:* 1800 kJ/h (actual maximum: 720 kJ/h) ***cobas c*** *701 module (including MSB):* 10800 kJ/h (actual maximum: 8280 kJ/h) ***cobas c*** *702 module (including MSB):* 10800 kJ/h (actual maximum: 8280 kJ/h) ***cobas c*** *502 module (including MSB):* 9000 kJ/h (actual maximum: 6120 kJ/h) ***cobas e*** *801 module (including MSB):* 7200 kJ/h (actual maximum: 5400 kJ/h) ***cobas e*** *602 module (including MSB):* 10800 kJ/h (actual maximum: 5400 kJ/h)

References

1. *99% Uptime calculation: (365 days / Mean Time Between Repair Visits (MTBRV) x downtime per incident. Data on file*
2. *Immunoassay vendors' assays package inserts (Roche, Siemens, Abbott, Beckman and Ortho). Data on file. Product names and trademarks are the property of their respective owners.*
3. *Atellica Solution Specsheets | 2017, Alinity ci-series Operations Manual | 2016, cobas 8000 modular analyzer series Operator's Manual | 2017, UniCel DxI 800 Access Immunoassay System Instructions for use | 2015, BECKMAN COULTER DxC 700 AU Reference Manual | 2017, Power Link data sheet | 2016*
4. *Overview of currently commercially available assays. Data retrieved September 2018 from corporate websites. Data on file. cobas® Assay Portfolio | Roche Diagnostics International Ltd, Alinity Assay Menu | Abbott Laboratories, Atellica Solution Test Menu | Siemens Healthcare Diagnostics Inc., Beckman Coulter Integrated Systems Test Menu | Beckman Coulter, Inc.*

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