



cobas c 311 analyzer



cobas[®]
Life needs answers



cobas[®] brand

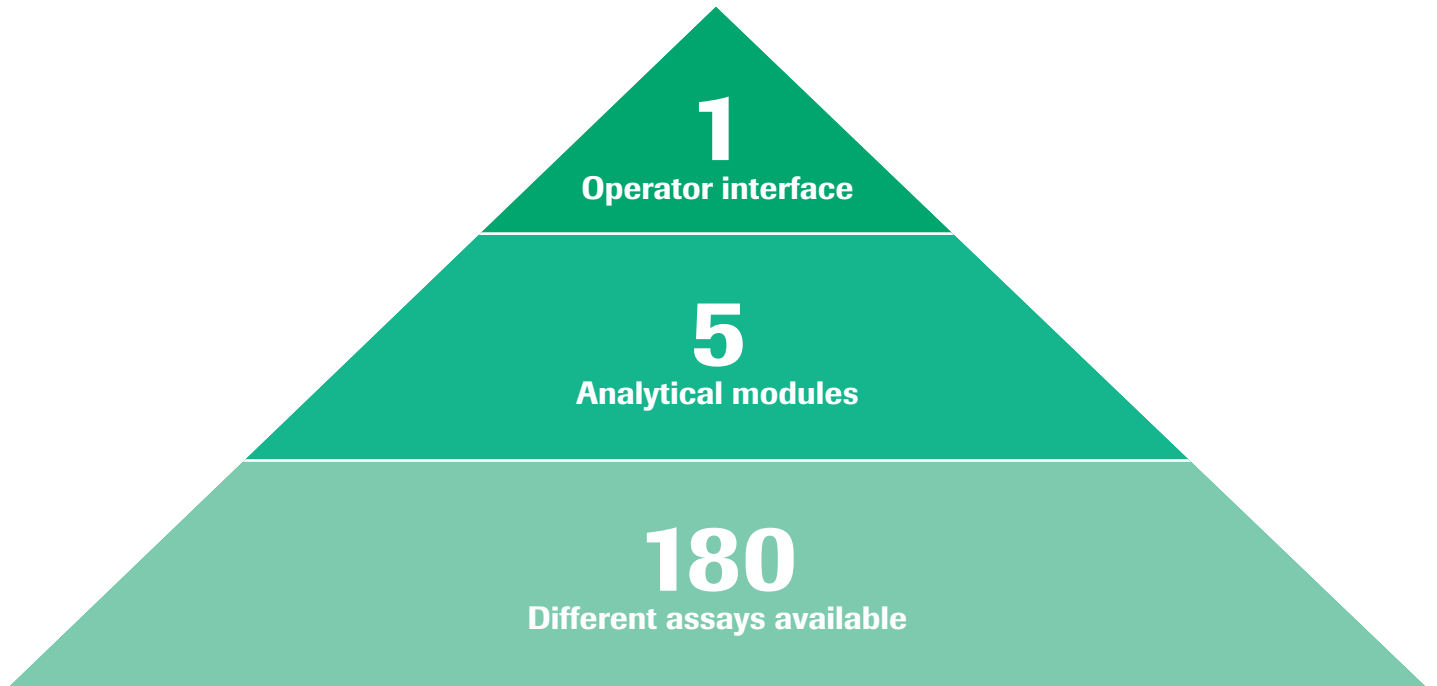
Roche Diagnostics introduces the **cobas** brand as the umbrella for products used to complete or expand the screening, diagnostic and monitoring applications of the professional laboratory.

cobas brand includes:

- serum work area with clinical chemistry and immunochemistry
- data management and preanalytical solutions
- products for coagulation analysis and urinalysis
- instruments for rapid blood and cardiovascular testing
- Polymerase Chain Reaction-based applications for virology and women's health testing

cobas[®] modular platform

Flexibility you can build on



Today's laboratories are challenged with delivering high standards of laboratory services with fewer resources. They face constant pressure to lower operating costs while aspiring to grow their business in new areas. Their concern for patient care is paramount, and they demand only the best in diagnostic testing and services.

Just as every patient requires individualized care, every laboratory is unique. Striking the balance between high standards and efficient operation requires tailor-made solutions. With **cobas** modular platform, Roche has developed a platform concept that delivers individualized solutions based on a common architecture for various workloads and testing requirements.

cobas[®] 4000 is the second member of the new cobas modular platform. It offers small workload laboratories a complete solution for clinical chemistry and immunochemistry testing.

Common universal reagent carriers

- Simplifies logistics
- Efficient use of reagents

Common applications and analytical technologies

- Comparable patient results
- Combines routine and innovative testing

Common operator interface

- Requires less training
- Promotes staff flexibility

The **cobas** modular platform is designed to reduce the complexity of laboratory operation and provides efficient and compatible solutions for network cooperation.



The clinical chemistry analyzer cobas c 311

5th generation of routine and dedicated chemistry experiences

cobas[®] 4000 analyzer series

5th generation

MODULAR[®] ANALYTICS

4th generation

COBAS INTEGRA

3rd generation

Hitachi 900 series

2nd generation

Hitachi 700 series

1st generation



Reagents

One grip handling of reagents

- The unique concept of the **cobas c** packs allows for convenient reagent handling.
- All reagents are ready to use.
- On board stability of reagents is up to 3 months and guarantees efficient usage even for esoteric assays.
- Over 90% of all reagents require lot calibration.
- Over 70% of all reagents require a sample volume of less than 5.0 µl.
- **cobas c** pack multi enables development channels for userdefined reagent applications.





cobas c 311 analyzer

Features

Stand alone analyzer for Clinical Chemistry.

Flexible system for consolidating routine and special chemistry workloads.

On-board capacity of 45 tests and throughput of up to 480 tests per hour.

For analysis of serum, plasma, urine, cerebrospinal fluid (CSF), hemolysate and whole blood.

Benefits

Comprehensive workload consolidation

cobas c 311, with up to 45 tests on board, offers consolidated testing from a menu of more than 100 applications.

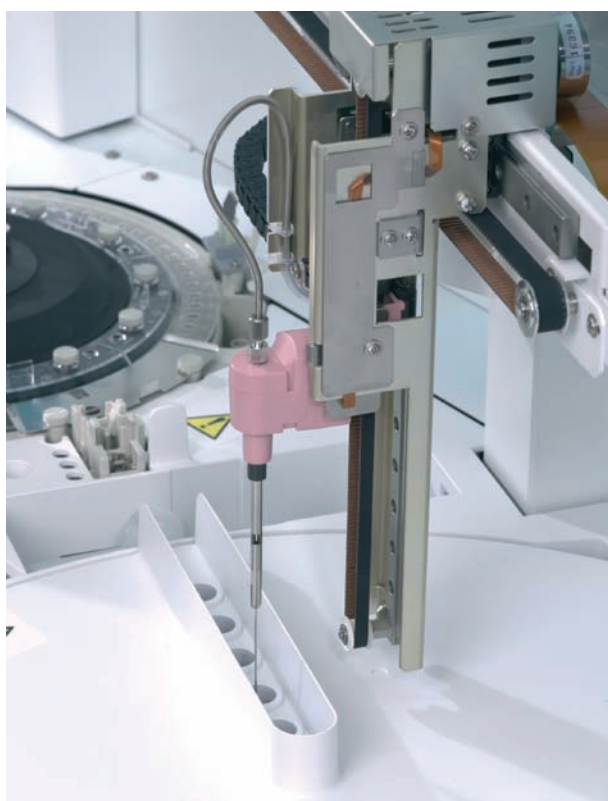
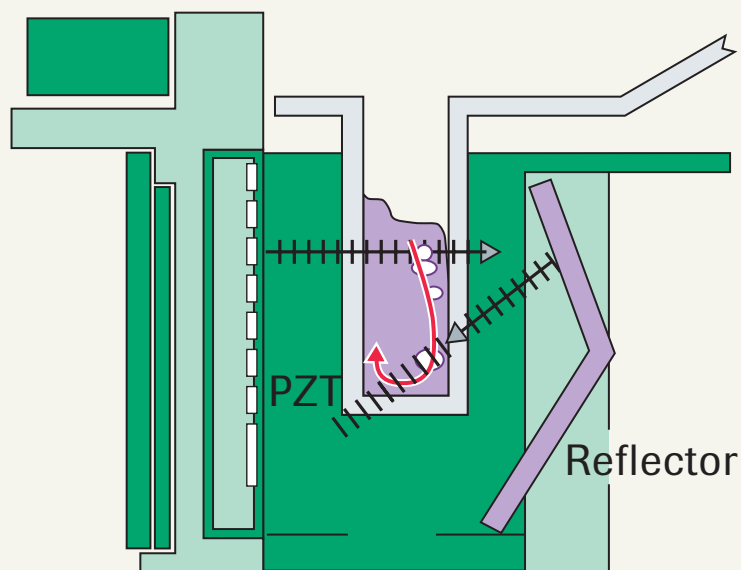
Enhanced lab efficiency

Eliminating reagent preparation and manual sample handling contribute to time savings, faster result availability and turn-around time.

Reduced costs

Long on-board reagent stability and long calibration intervals mean fewer calibrations and less waste.

Ultra-sonic mixing



Increased security of results

Sample integrity is checked via the analyzers' high sensitivity pressure sensors and clot detection systems minimizing the likelihood of error.

Sample volume management – optimized for paediatrics

75% of all **cobas c 311** analyzer applications need less than 5 μ l sample material.

For all short samples/aliquots the combination of micro sample cups, active level detection and volume optimized applications supports the use of paediatric sample material.

Whole blood HbA1c capabilities

cobas c 311 enables HbA1c in random access without manual sample preparation

Ultra sonic mixing – setting the future standard for mixing today!

The new ultra sonic mixing technology prevents potential carry-over by stirrers, reduces service and maintenance time.

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Specifications

System	Fully automated, random access analyzer for Clinical Chemistry and Homogeneous Immunology (HIA).
Sample throughput	Up to 300 samples/hr (theoretical max)
Test throughput (Theoretical max)	300 tests/hr for photometry tests only 480 tests/hr for only ISE tests
Number of channels (Reagent slots)	42 cassette slots 3 channels on ISE module
Programmable parameters	max. 117 photometric 3 ISE tests, 8 formulas, 3 serum indices
Sample types	Serum, Plasma, Urine, CSF, Whole Blood (Hb _{A1c} only)
Sample input (Sample disk)	Load capacity: total 110 positions 55 positions on the outer ring 55 positions on the inner ring (outer & inner ring barcode read, sample detection available) STAT: real STAT interrupt is available continuous operation: additional sample loading during operation
Sample container types	Primary tubes 5–10 ml, 16x100, 16x75, 13x100, 13x75mm Sample cup 2,5 ml Micro cup 1,5 ml Cups on tube Cup on top of a 16x75/100 mm tube Cup on top of one non standard tube false bottom tube
Sample volume	1.0 – 35 µl in 0.1 µl steps
Sample dilution	3 – 121 times, diluent 100 µl
Sample clot detection	Available
Minimum sample volume	Primary tubes : 700 µl Sample cup: 100 µl Micro cup: 50 µl
Sample barcode types	Code 128 Codabar (NW 7) Interleaved 2 of 5 Code 39
System interfaces	RS 232 serial interface, bi-directional Interface to cobas link (TeleService and automatic download of applications and package inserts)

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Specifications

Sample data base	10.000 routine / STAT samples
Test methods	For photometric modules: 1 point, 1 point + prozone check, 2 point, 2 point kinetic, 2 point +prozone check, 3 point, 1 point + kinetics, Rate A, Rate A + serum index, Rate A with blank, Rate B
Calibrator/QC Input	On the sample disk, bar coded
Calibration methods	Start-up, Re-calibration for photometric assays: Linear, non-linear multi-points, 2 point calibration, K-factor up to 100 calibrators pre-programmable Storage of up to 180 curves Preventive calibration of the stand-by cassettes Two k-factor can be defined for different sample types
QC methods	Real-time QC, individual QC, cumulative QC up to 100 different controls pre-programmable preventive QC after calibration of stand-by cassettes Auto QC (without operator intervention; time- or event-triggered)
Rerun/reflex function	Automatic rerun and manual rerun Automatic reflex is supported by the system if reflex request is provided by a PSM or LIS
Electrical requirements	Power requirements: 230/400 Volts AC 3/N/PE 110 Volts AC 1.5 kVA Frequency: 50 Hz or 60 Hz +/- 0,5 %
Water/waste requirements	Water: Bacteria free, deionised water supply: resistance of 1,0 °S/cm max. Water consumption: Up to 12 l/hr during operation Water pressure: 0,5 – 3,5 kg / cm ² , (49 – 343 Kpa) Water temperature: 15 to 30 °C Biohazards waste: Separate container located in the system L. concentrated Central drain port, diameter: 50 mm, wall drain <?> waste: 100 mm above the floor
Regulatory requirements	GS, CE, UL, C-UL
Operating conditions	Ambient temperature: 15 to 32 °C Ambient humidity: 45 to 85% (RH, without condensation) Heat Output: 2 kcal/h Noise Output: < 65 dB
Physical dimensions	Width: 1338 mm Depth: 855 mm Height: 1262 mm
Weight	270 kg

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Assay menu

Substrates
Albumin
Ammonia
Bicarbonate
Bilirubin-direct
Bilirubin-total
Calcium
Cholesterol
HDL-Cholesterol
LDL-Cholesterol
Creatinine enz.
Creatinine Jaffé
Fructosamine
Glucose
Iron
Lactate
Magnesium
Phosphorus
Total Protein
Total Protein U / CSF
Triglycerides
Triglycerides GB
UIBC
Urea / Bun
Uric Acid

Enzymes
ACP
ALP
ALT/GPT
Amylase-tot.
Amylase-pancr.
AST / GOT
Cholinesterase
CK
CK-MB
GGT
GLDH
HBDH
LDH
Lipase

Electrolytes
Chloride
Potassium
Sodium

Drugs of Abuse
Amphetamines
Barbiturates
Benzodiazepines
Cannabinoids
Cocain Metabolite
Ethanol
Methadone
EDDP*
Methaqualone
Opiates
Oxycodone*
Phencyclidine
Propoxyphene
LSD

Others
Anti Trombin (AT III)
T ₄
T-Uptake
TPLA**

* Assay is under development

** Not available in all countries

Proteins	
α_1 -Acid Glycoprotein	Haptoglobin
α_1 -Antitrypsin	Homocystein
α_1 -Microglobuline	Hb _{A1c} (whole blood)
β_1 -Microglobuline	IgA
Albumin (immuno.)	IgG
APO A ₁	IgM
APO B	IMA
ASLO	Kappa Light Chains
C3c	Lambda Light Chains
C ₄	Lipoprotein (a)
Ceruloplasmin	Myoglobin
CRP	Prealbumin
CRP High Sensitivity	RF
Cystatin C	Soluble Transferrin Receptor
D-Dimer	Transferrin
Ferritin	

TDM
Acetaminophen
Amikacin
Carbamazepine
Cyclosporine*
Digitoxin
Digoxin
Gentamicin
Lidocaine
Lithium
MPA
NAPA
Phenobarbital
Phenytoin
Procainamide
Quinidine
Salicylate
Theophylline
Tobramycin
Valproic Acid
Vancomycin

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