cobas c 111 analyzer
Small box. Big performance
His journey back to health begins in your laboratory
cobas® solutions – making a difference when it matters most

Every patient prognosis depends on several factors, but one thing is certain: a fast, precise and reliable diagnosis is critical to achieve the best outcome.

cobas laboratory solutions from Roche are designed with your needs in mind – to support the work you do and the individual patients you serve. Our harmonized and comprehensive total laboratory solutions include products, services and IT across all stages of pre-analytics, analytics and post-analytics, making a difference to every sample that enters your laboratory.

They will help deliver a smooth, efficient IVD service that allows you to lead in an ever-changing healthcare environment.

cobas solutions – helping you put patients back on the road to recovery.

The cobas c 111 analyzer is the smallest member of Roche’s cobas platform family. It offers laboratories receiving up to 50 samples/day a compact solution for clinical chemistry, electrolyte and homogeneous immunoassay testing. The system is designed to fulfill the important needs of integrated laboratory networks serving outpatient and emergency laboratories, as well as private laboratories serving primary care physicians.
cobas c 111 analyzer
Designed to fit in many ways

Routine

Perfectly suited as a main analyzer in small labs, private labs and satellite labs in larger lab networks

Backup

Serves as a backup analyzer for larger cobas clinical chemistry analyzers including the cobas 4000 analyzer series

Dedicated

In certain lab settings, used as a dedicated analyzer for STAT samples in emergency and intensive care departments, or for special testing such as for HbA1c
cobas c 111 analyzer
High level performance on a small footprint

1 Dynamic transfer head
• Lean design significantly reduces complexity and improves reliability by performing four functions in one:
  1. Sample pipetting
  2. Reagent pipetting
  3. Mixing of sample and reagent
  4. Sample pipetting for ISE
• Sample probe is washed between steps to prevent carry-over

2 ISE unit (optional)
• Indirect measurement of chloride, potassium and sodium
• Optimized design for easy system maintenance, including replacement of electrodes and tubing by the operator

3 Peristaltic pump
4 Tubing
5 Electrodes
6 Core unit
- Photometric testing for clinical chemistry and homogeneous immunoassays
- Interface for external barcode reader to reduce manual entering errors
- Disposable cuvette segments to reduce water consumption
- Host connectivity options and integrated thermal printer for convenient data management

7 User interface
- User-friendly interface designed for different skill and access levels
- Online help function provides a quick reference guide for system operation
- Software-driven start-up and maintenance procedures save daily setup time

8 Sample loading area
- Samples can be loaded and unloaded continuously into eight positions
- STAT processing prioritizes emergency samples for next pipetting cycle
- Onboard sample and calibrator dilution
cobas c 111 analyzer
Small box. Big performance

World-class performance
• Over 4000 installations
• Externally rated world-class performance
• Recommended by customers to customers

99% uptime
• Robust and reliable system design
• On average one service visit required per year

Integrated service and support
• High quality service and support
• Clear supplier responsibility

Good fit for labs < 50 S/D
• Convenient and flexible reagent handling using disks for individual panel testing
• Low water consumption of up to 3 liters per day
• Easy and intuitive software handling

Network compatibility
• Comparable results across the cobas platform
• Connectivity options to local IT surroundings via Host
World-class performance
Over 4,000 installations worldwide and externally rated world-class performance

“I know that the cobas c 111 analyzer will always deliver the highest standards.”
Elena Barabashova, Laboratory Technician at Rauhfus Children’s Hospital, St. Petersburg, Russia

“(…) sigma metrics analyses graded the overall performance of this analyzer as world class.”
LabCorp evaluation study of the cobas c 111 analyzer
Good fit for labs processing up to 50 samples per day

Smart features make the cobas c 111 analyzer the ideal solution

Exchangeable disks for flexible reagent handling
• Preparation of up to 8 different reagent disks adaptable to individual panel testing
• Each reagent disk can hold up to 27 bottles which allows for 14 different tests in one reagent disk
• Prepared reagent disks can be stored in a fridge until needed and with one disk on board

Low water consumption of up to 3 liters per day
• Independent and flexible water supply with 3 liter water and waste containers

Intuitive software design for easy operation
• Guiding software wizard for daily start-up and maintenance procedure
• “Time to Result” indicator for predictable walk away time
“It was an easy decision for us to fit our satellite laboratories with the cobas c 111 analyzer: we have the quality of cobas®, but in its smallest form.”

Kripa Murur, Biochemist at the Central Laboratory at Anand Diagnostic Laboratory, Shivajinagar, Bangalore, India

Fig. 1: HDL-Cholesterol plus 3rd generation method comparison

P/B Regression

\[
Y = 1.045 \times X - 0.039
\]

\[\text{md}(95) = 0.042\]

\[N = 105, r = 0.9986\]

\[t = 0.9683\]

cobas c 111 analyzer

*Designed to complete the network offering*

The cobas c 111 analyzer provides results comparable with results from the larger Roche clinical chemistry analyzers, using the same common reagent chemistry.

- The same reagents are used between cobas c packs and cobas c 111 reagent bottles, delivering comparable results across the cobas platform
- The same calibrators and controls are available for all cobas clinical chemistry analyzers
- Proven consistency of results³
“Using the cobas c 111 analyzer makes us more confident, saves us time and is proof that we are moving forward as a laboratory.”

José Olvera, Laboratory Manager at Centro de Salud San Francisco Culhuacán, Mexico
References
1 Barabashova, E., Laboratory Technician. (2013). cobas c 111 Customer Testimonials - Russia.
2 LabCorp, Laboratory Corporation of America, Department of Science and Technology, Elon, N.C. (2010).
   An Evaluation of the Roche cobas c 111, LABMEDICINE, Volume 41, Number 7, July 2010.
3 Roche Evaluation Study (2008).

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# Serum Work Area

**Clinical Chemistry and Homogeneous Immunoassays**

## Anemia
- Iron
- Lactate Dehydrogenase

## Bone
- Phosphorus

## Cardiac
- Cholesterol
- Creatinin Kinase (CK)
- CK-MB
- CRP hs
- D-Dimer
- HDL Cholesterol direct
- Homocysteine
- LDL Cholesterol direct

## Coagulation
- D-Dimer

## Endocrinology
- Amylase – pancreatic
- Amylase – total
- Lipase

## Hepatology
- Alkaline phosphatase (IFCC)
- ALT/GPT without Pyp
- Ammonia
- AST/GOT with Pyp
- AST/GOT without Pyp
- Bilirubin – direct
- Bilirubin – total
- Gamma Glutamyl Transferase
- Lactate Dehydrogenase

## Infectious Diseases
- CRP (Latex)

## Inflammation
- CRP (Latex)

## Metabolic
- Bicarbonate (CO2)
- Calcium
- Chloride
- Glucose
- HbA1c (hemolysate)
- HbA1c (whole blood)
- Lactate
- LDL Cholesterol direct
- Magnesium
- Potassium
- Sodium
- Total Protein
- Triglycerides

## Renal
- Albumin BCG
- Albumin immunologic
- Creatinin (enzymatic)
- Creatinin (Jaffe)
- Urea/BUN
- Uric acid
# cobas c 111 analyzer

## Specifications

<table>
<thead>
<tr>
<th>System</th>
<th>cobas c 111 analyzer</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Discrete, fully-selective system for clinical chemistry, ISE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test throughput</th>
<th>60-85 photometric tests/hr</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>180 ISE tests/hr</td>
</tr>
<tr>
<td></td>
<td>60-100 photometric and ISE mixed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample types</th>
<th>Serum, plasma, urine, whole blood (HbA1c)</th>
</tr>
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<table>
<thead>
<tr>
<th>Sample input</th>
<th>Continuous loading of primary and secondary tubes into 8 sample positions</th>
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<tbody>
<tr>
<td></td>
<td>Priority STAT sampling</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Time to first result</th>
<th>5-10 min for photometric measurements</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>2 min for ISE measurements</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample container types</th>
<th>Primary tubes 5-10mL; 16x100, 16x75, 13x100, 13x75</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sample cup 2.5mL</td>
</tr>
<tr>
<td></td>
<td>Micro Cup 1.5mL</td>
</tr>
<tr>
<td></td>
<td>Cup on tube Cup on 16x75mm tube</td>
</tr>
<tr>
<td></td>
<td>False bottom tube</td>
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<table>
<thead>
<tr>
<th>Sample volume</th>
<th>Min. sample volume: Primary tubes 500µL</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Sample cup 75µL</td>
</tr>
<tr>
<td></td>
<td>Micro cup 50µL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample barcode types</th>
<th>Code 128, Codabar 2 of 7, Interleaved 2 of 5, Code 3 of 9</th>
</tr>
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<table>
<thead>
<tr>
<th>Sample dilution</th>
<th>1.2-100 times</th>
</tr>
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<table>
<thead>
<tr>
<th>Photometer</th>
<th>12 wavelengths, 20 W halogen lamp, monochromatic and bichromatic measurement</th>
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</table>

<table>
<thead>
<tr>
<th>Measurement principles</th>
<th>Absorbance photometry (enzymes, substrates, specific proteins)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Ion selective electrode, indirect measurement (dilution 1:6)</td>
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<table>
<thead>
<tr>
<th>Reagents</th>
<th>ISE: Na⁺, K⁺, Cl⁻</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>2D barcoded system reagent bottles, 50-200 tests/bottle</td>
</tr>
<tr>
<td></td>
<td>Photometric: 27 onboard reagent positions for approx. 14 assays</td>
</tr>
<tr>
<td></td>
<td>Up to 8 exchangeable reagent discs available</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Reaction cells</th>
<th>Disposable micro-cuvettes</th>
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<thead>
<tr>
<th>Control unit</th>
<th>5.7” color touch-screen LCD (1/4 VGA)</th>
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</thead>
</table>

| System interfaces | 2 x RS 232 serial interface, bi-directional (ASTM protocol) for host and barcode scanner |
|                  | 2 x USB 1.1/2.0 for modem and memory stick (data loading and backup) |

<table>
<thead>
<tr>
<th>Electrical requirements</th>
<th>Line voltage 100-125 V and 200-240 V AC (-15%, +10%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Line frequency 50 Hz (±5%) and 60 Hz (±5%)</td>
</tr>
<tr>
<td></td>
<td>Power consumption 250 VA (320 VA with ISE)</td>
</tr>
<tr>
<td></td>
<td>Installation category II (IEC 61010-1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical dimensions (with ISE)</th>
<th>Width: 590 mm (720 mm)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Depth: 550 mm (550 mm)</td>
</tr>
<tr>
<td></td>
<td>Height: 480 mm (480 mm)</td>
</tr>
<tr>
<td></td>
<td>Weight: 32.3 kg (35 kg)</td>
</tr>
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<thead>
<tr>
<th>External printer</th>
<th>Printer Tool Software available to enable data transmission from the cobas c 111 instrument to nearly every standard personal computer</th>
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<table>
<thead>
<tr>
<th>Water requirements</th>
<th>Up to 3 litres/day NCCLS Type II (conductivity &lt;1µS/cm at 25°C)</th>
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<table>
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<tr>
<th>Regulatory requirements</th>
<th>GS, CE, UL, C-UL</th>
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<tr>
<th>Open system</th>
<th>Development channel with 1, 3 or 5 channels available</th>
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