# cobas c 311 analyzer Specifications

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| 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<br>480 tests/hr for only ISE tests |
| Number of channels (Reagent slots) | 42 cassette slots<br>3 channels on ISE module |
| Programmable parameters | max. 117 photometric<br>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<br>55 positions on the outer ring<br>55 positions on the inner ring<br>(outer & inner ring barcode read, sample detection available)<br>STAT: real STAT interrupt is available<br>continuous operation: additional sample loading during operation |
| Sample container types | Primary tubes 5–10 ml, 16x100, 16x75, 13x100, 13x75mm<br>Sample cup 2,5 ml<br>Micro cup 1,5 ml<br>Cups on tube Cup on top of a 16x75/100 mm tube<br>Cup on top of one non standard tube<br>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<br>Sample cup: 100 µl<br>Micro cup: 50 µl |
| Sample barcode types | Code 128<br>Codabar (NW 7)<br>Interleaved 2 of 5<br>Code 39 |
| System interfaces | RS 232 serial interface, bi-directional<br>Interface to cobas link (TeleService and automatic download of applications and package inserts) |

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| 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<br>for photometric assays: Linear, non-linear multi-points, 2 point calibration, K-factor<br>up to 100 calibrators pre-programmable<br>Storage of up to 180 curves<br>Preventive calibration of the stand-by cassettes<br>Two k-factor can be defined for different sample types |
| QC methods | Real-time QC, individual QC, cumulative QC<br>up to 100 different controls pre-programmable<br>preventive QC after calibration of stand-by cassettes<br>Auto QC (without operator intervention; time- or event-triggered) |
| Rerun/reflex function | Automatic rerun and manual rerun<br>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<br>110 Volts AC<br>1.5 kVA<br>Frequency: 50 Hz or 60 Hz +/- 0,5 % |
| Water/waste requirements | Water: Bacteria free, deionised water supply: resistance of 1,0 ºS/cm max.<br>Water consumption: Up to 12 l/hr during operation<br>Water pressure: 0,5 – 3,5 kg / $cm^3$, (49 – 343 Kpa)<br>Water temperature: 15 to 30 °C<br>Biohazards waste: Separate container located in the system<br>L. concentrated Central drain port, diameter: 50 mm,<br>wall drain <?> waste: 100 mm above the floor |
| Regulatory requirements | GS, CE, UL, C-UL |
| Operating conditions | Ambient temperature: 15 to 32 °C<br>Ambient humidity: 45 to 85 % (RH, without condensation)<br>Heat Output: 2 kcal/h<br>Noise Output: < 65 dB |
| Physical dimensions | Width: 1338 mm<br>Depth: 855 mm<br>Height: 1262 mm |
| Weight | 270 kg |