# 4Bio Core

## Technical Specifications

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| SIZE | Height: 40 cm (15.7 in)<br>Depth: 60 cm (23.6 in)<br>Width: 38 cm (14.9 in) |
| WEIGHT | Weight: 20 kg (41.8 lbs) |
| POWER SUPPLY | 240/100 Vac, 50/60 Hz, single phase with ground<br>Fuse compartment: 2 Amp @ 230 Vac, 3.15 Amp @ 115 Vac<br>Power consumption: less than 150 VA (external PC excluded)<br>Ground resistance: less than 0.1 Ohm<br>Leakage current: less than 2.5 mA |
| SAMPLING ARM | 1 sampling needle, 75 mm needle stroke<br>Capacitive liquid level detector |
| DILUTER SYRINGE | Long life plunger<br>Syringe capacity: 368 µL<br>Syringe resolution: 0.07 µL |
| HYDRAULIC SYSTEM | 2 self-priming peristaltic pumps (life 1000 hrs)<br>with replaceable neoprene cassette (life 500 hrs)<br>Pinch valve<br>Containers: Water (2 L), Waste (2 L)<br>Water Consumption: 2 mL per test average |
| REAGENTS TRAY | Removable rack, refrigerated when on-board, 18+2 numbered positions (for reagent bottles of 15 mL, 2 pos. reserved for water and cleaning solution) |
| SAMPLES TRAY | Removable tray, refrigerated when on-board, 10 numbered positions, cups of 1.0 mL (cups require a metal adapter for liquid level detection) |
| CUVETTE ROTOR<br>REACTION CELLS | 4 reaction segments of 24 cuvettes, single use, optical cuvettes, 96 in total<br>Optical path: 9.5 mm, reaction volume 275 - 500 µL<br>100 W heating resistance, temperature sensor |
| OPTICAL GROUP | 1 halogen lamp (6 V, 10 W) with extended UV emission<br>2 focusing lenses, optical glass<br>10-position filter disk: 8 positions provided with interference filters<br>of 340, 405, 505, 546, 578, 600, 650, 700 nm wavelengths,<br>1 free position and 1 solid position for dark reading<br>±2 nm on peak wavelength, band pass of ±10 nm |
| PHOTOAMPLIFIER | Photoelectric detector<br>Signal amplifier<br>Response range: 340 nm to 900 nm<br>Photometric range: 0 to 3 Abs<br>Linearity: ±0.5% from 0.5 to 1.0 Abs<br>Precision: 1 CV% or 1 mAbs min. (0.1 to 1.5 Abs)<br>Stability: daily reader offset, less than 1% drift per day |

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| CONTROL | Real-time multitasking microprocessor-based control<br>Easy access to the electronics |
| EXTERNAL COMPUTER | Industrial Embedded PC<br>18-inch touch screen<br>4GB RAM<br>Windows 10 Enterprise LTSB<br>USB port |
| PIPETTING | Volume: 2 - 300 µl (sample), 2-350 µL (reagent)<br>Precision: 1.5 CV% at 2 µl; 1 CV% at 4 µL<br>Mixing by sample needle upon dispensation |
| REACTION | 300 - 500 µL reaction volume |
| SAMPLE DILUTION | In-needle dilution if allowed by method's sample volumes<br>Automatic pre-dilution in a reaction cuvette, up to 1:100<br>Automatic test repetition with dilution |
| REFRIGERATION | Sample & reagent refrigeration, circa 12 °C below room temperature |
| TYPES OF TESTS | Endpoint, bichromatic endpoint, differential endpoint,<br>differential endpoint sample blank, fixed time, kinetic |
| TEST RUNS | Random / Urgent |
| MEASUREMENT RATES | 150 tests/hour for double reagent run<br>Maximum incubation + reading time: 750 seconds<br>Carry-over, lower than 15 parts per million |
| CALIBRATION | Reagent blank subtraction<br>1 to 8 standards depending on method<br>Linear: factor, linear, linear regression<br>Non-linear: cubic spline<br>Free selectable standard and control positions on sample plate<br>Results can be recalculated when changing factor or curve |
| MAINTENANCE | Procedures programmed by component life counters |
| PRINTING | Single test, complete sample, work sheet, calibration, method and QCs |
| REPORTS | Automatic sample reports upon test completion if requested,<br>Export as .csv, .xls, .doc, .pdf |
| NEEDLE WASHING | Sampling needle washed internally and externally<br>with water after every operation, special needle wash routine upon request |
| POWER | Standard VDE removable power cord |
| HOST/ LIS | Ethernet LAN (samples, work list, results)<br>Standard ASTM ASCII protocol |
| WORKLIST | For each worklist: unlimited number of samples, unlimited<br>number of tests, up to 99 sheets of tests per worklist |
| QUALITY CONTROL | Up to three-level controls per test, one-month monitoring<br>Reagent/calibrator/control lot monitoring,<br>Exclusion of failing results from graphic and statistics |
| ERROR LOG | Automatically stored at run-time, can be viewed or printed |

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