

4Bio Combine

Technical Specifications



SIZE	<p>Height: 49 cm (19.3 in)</p> <p>Depth: 62 cm (24.4 in)</p> <p>Width: 85 cm (33.4 in)</p>
WEIGHT	Weight: 55 kg (105.8 lbs)
POWER SUPPLY	<p>240/100 Vac, 50/60 Hz, single phase with ground</p> <p>Fuse compartment: 3.15 Amp @ 230 Vac, 4 Amp @ 115 Vac</p> <p>Power consumption: less than 200 VA (external PC excluded)</p> <p>Ground resistance: less than 0.1 Ohm</p> <p>Leakage current: less than 2.5 mA</p>
SAMPLING ARM	<p>2 sampling needles, 110 mm needle stroke</p> <p>Capacitive liquid level detector, needle-shock sensor</p>
DILUTER SYRINGE	<p>Long life plunger</p> <p>Syringe capacity: 368 μL</p> <p>Syringe resolution: 0.07 μL</p>
HYDRAULIC SYSTEM	<p>10 self-priming peristaltic pumps (life 1000 hrs) with replaceable neoprene cassette (life 500 hrs)</p> <p>2 vacuum pumps</p> <p>2 Pinch valves & Manifold</p> <p>Containers: Water (20 L), Waste (20 L), Cleaning Solution (2 L) equipped with level sensor and safety connections</p>
REAGENTS TRAY	2 removable racks, refrigerated when on-board, 2x 14+2 numbered positions (for reagent bottles of 20 mL, 4 reserved positions for triangular bottles of 50 mL with water and cleaning solution)
SAMPLES TRAY	Removable tray, 46 (23+23) numbered positions, 23 pos. for cups of 3 mL and 23 pos. for commercially available reaction tubes of 2 mL
CUVETTE ROTOR REACTION CELLS	<p>80 washable BIONEX® cuvettes which allow up to 30.000 tests per rotor</p> <p>Optical path 6 mm, 210 - 350 μL reaction volume</p> <p>100 W heating resistance, temperature sensor, safety thermostat</p> <p>Built-in wash station with 8 step washing sequence for each cuvette</p>
OPTICAL GROUP	<p>1 halogen lamp (6 V, 10 W) with extended UV emission</p> <p>2 focusing lenses, optical glass</p> <p>10-position filter disk: 8 positions provided with interference filters of 340, 405, 505, 546, 578, 600, 650, 700 nm wavelengths,</p> <p>1 free position and 1 solid position for dark reading</p> <p>\pm2 nm on peak wavelength, band pass of \pm10 nm</p>
PHOTOAMPLIFIER	<p>Photoelectric detector</p> <p>Signal amplifier</p> <p>Response range: 340 nm to 900 nm</p> <p>Photometric range: 0 to 3 Abs</p> <p>Linearity: \pm0.5% (0.1-1.5 Abs)</p> <p>Precision: 0.5 CV% (0.05 to 1.5 Abs)</p> <p>Stability: daily reader offset, less than 1% drift per day</p>

CONTROL	Real-time multitasking microprocessor-based control Easy access to the electronics
EXTERNAL COMPUTER	Industrial Embedded PC 18-inch touch screen 4GB RAM, Windows 10 Enterprise LTSC USB port
PIPETTING	Volume: 2 - 300 µl (sample), 5-350 µL (reagent) Precision: 1.5 CV% at 2 µl; 1 CV% at 4 µL Mixing by sample needle upon dispensation
REACTION	210 - 350 µL reaction volume
SAMPLE DILUTION	In-needle dilution if allowed by method's sample volumes Automatic pre-dilution in a reaction cuvette, up to 1:100 Automatic test repetition with dilution
REFRIGERATION	Reagent refrigeration, circa 12 °C below room temperature
TYPES OF TESTS	Endpoint, bichromatic endpoint, differential endpoint, differential endpoint sample blank, fixed time, kinetic
TEST RUNS	Random / Urgent
MEASUREMENT RATES	300 tests/hour (single reagent) Maximum incubation + reading time: 612 seconds Carry-over: lower than 15 parts per million
SLEEP MODE	Sleep mode and automatic wake-up of device can be programmed, automatic start-up procedure upon request
START UP	self-test, reader offset of optics, wash and check of all cuvettes
CALIBRATION	Reagent blank subtraction 1 to 8 standards depending on method Linear: factor, linear, linear regression Non-linear: cubic spline Free selectable standard and control positions on sample plate 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, Export as .csv, .xls, .doc, .pdf
NEEDLE WASHING	Sampling needle washed internally and externally 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) Standard ASTM ASCII protocol
WORKLIST	For each worklist: unlimited number of samples, unlimited number of tests, up to 99 sheets of tests per worklist
QUALITY CONTROL	Up to three-level controls per test, one-month monitoring Reagent/calibrator/control lot monitoring, Exclusion of failing results from graphic and statistics
ERROR LOG	Automatically stored at run-time, can be viewed or printed