



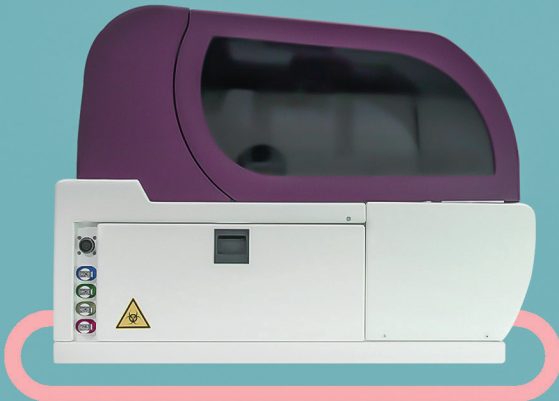
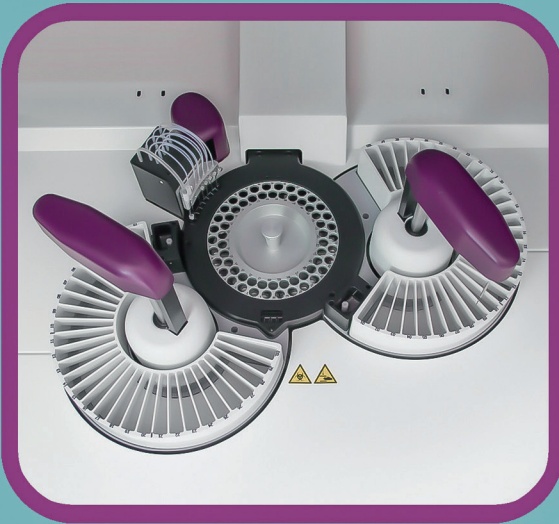
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DUO

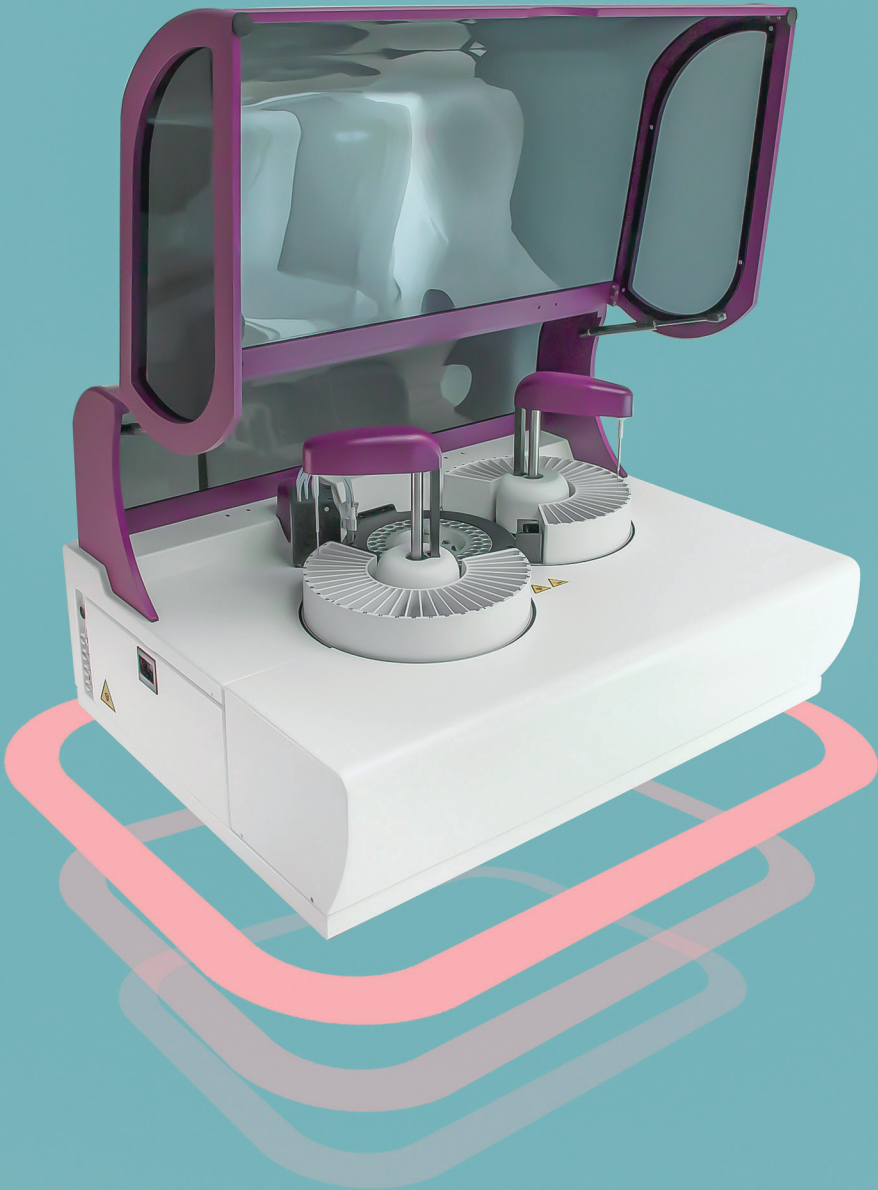
“ Edif at its best ”
Duo version 301

Physical characteristics			Operation features	
SIZE / WEIGHT	Height: 49 cm (19.3 in) Depth: 62 cm (24.4 in) Width: 85 cm (33.4 in)	Weight: 48 kg (105.8 lbs)	PIPETTING	Volume: sample, 2 - 300 µL; reagent, 5-350 µL Precision: 1.5 CV% at 2 µL; 1 CV% at 4 µL Mixing by sample needle upon dispensation
POWER SUPPLY	100-240 VAC, 50 / 60 Hrz, single phase with ground Independent on-off switch for refrigerated reagent plate Fuse compartment / fuses: 2 Amp @ 230 Vac, 4 Amp @ 115 Vac Power consumption: less than 200 VA (external PC excluded) Ground resistance: less than 0.1 Ohm Leakage current: less than 2.5 mA		REACTION	Reaction volume, 210 - 350 µL
SAMPLING ARMS	2 sampling needles, 110 mm needle stroke Capacitive liquid level detector Needle shock sensor		SAMPLE DILUTION	In-needle dilution if allowed by method's sample volumes Automatic pre-dilution in a reaction cuvette, up to 1:100
DILUTER SYRINGE	Long life plunger Syringe capacity, 368 µL Syringe resolution, 0.14 µL		TEMPERATURE CONTROL	Reagent refrigeration, circa 12 °C below room temperature Reaction cells, heating unit can be set from room temperature up to 42 °C ±0.2 °C (108 °F ±0.5 °F)
HYDRAULIC SYSTEM	10 self-priming peristaltic pumps (life 1000 hrs) with replaceable neoprene cassette (life 500 hrs) 2 vacuum pumps 2 pinch valves Manifold Tanks*: Water, 20 L; Cleaning solution, 2 L; Waste, 20 L * equipped with level sensor and safety connections		TYPES OF TESTS	Endpoint, Bichromatic endpoint, Differential endpoint, Differential endpoint sample blank, Fixed Time, Kinetic
WASH STATION	Needles: 6 dispensing, 5 aspiration, 1 cleaning (8 step washing sequence for each cuvette)		TEST RUNS	Random / Urgent
REAGENT TRAYS	2 removable trays 30 + 30 bottles, 50 mL or 24 mL (up to 3000 mL total)		MEASUREMENT RATES	200 tests/hour for double reagent run 300 tests/hour in single reagent mode Maximum incubation + reading time: 638 seconds Typical precision, endpoint 2.0 CV% / kinetic 2.0 CV% Carry-over, lower than 15 parts per million
SAMPLE TRAY	(Sphera standard) Removable tray, 60 numbered positions, tubes of 12 - 13 mm, 5 - 7 mL / cups of 0.5-1.5 mL (cups require a metal adapter for level detection) (Optional) Removable tray, 20 + 20 numbered positions, 20 tubes of 12 - 16 mm / 20 cups (3,5 mL type)		START-UP	The start-up procedure is run daily: self-test, reader offset of optics, wash and check of all cuvettes
CUVETTE ROTOR REACTION CELLS	80 washable BIONEX® cuvettes which allow up to 30 000 tests per rotor Optical path 6 mm, 210 - 350 µL reaction volume 100W heating resistance, temperature sensor, safety thermostat		CALIBRATION	Reagent blank subtraction, 1 to 8 standards per test method Linear: factor, linear, linear regression (standard's repetitions) Non linear (3 interpolation types): cubic-spline, poly-linear and logit-log four parameters Free standard / control positions on all the sample plate Results can be recalculated when changing factor or curve
OPTICAL GROUP	1 halogen lamp (6 V, 10 W) with extended UV emission 2 focusing lenses, optical glass 10-position filter disk: 8 positions provided with interference filters of 340, 405, 505, 546, 578, 600, 650, 700 nm wavelengths, 1 free position and 1 solid position for dark reading Direct reading reaction cuvettes, 6mm optical path ±2 nm on peak wavelength, band pass of ±10 nm		MAINTENANCE	Procedures programmed by component life counters
PHOTOAMPLIFIER	Photoelectric detector Signal amplifier Response range, 340 nm to 900 nm Photometric range, 0 to 2.5 Abs Linearity, ±0.5% full scale Precision: 0.5 CV% (0.050 to 1.500 Abs) Stability: daily reader offset, less than 1% drift per day		PRINTING REPORTS	Single test, complete sample, work sheet, method and QCs Automatic sample reports upon test completion if requested
CONTROL	Real-time multitasking microprocessor based control Easy access to the electronics		NEEDLE WASHING	Sampling needle washed internally and externally with system solution after every operation
EXTERNAL COMPUTER	(Minimum requirements) CPU: Dual Core, 1.7 Ghz RAM: 2GB I/O: USB 2.0 port Display: minimum resolution 1280x768 OS: Windows® 7, 8, 8.1, 10 Framework: .NET framework 4.6		Connections	
			POWER	Standard VDE removable power cord
			EXTERNAL PC	USB port
			HOST/ LIS	Ethernet LAN (samples, work list, results) Standard ASTM ASCII protocol
			Database	
			WORKLIST/ SAMPLES	For each worklist: unlimited number of samples, unlimited number of tests, up to 99 sheets of tests per worklist. Sample-patient ID codes
			TEST METHODS	Unlimited number of methods in PC memory 100 active methods
			QUALITY CONTROL	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 Powerful on-line monitoring



“ By doubling the number of sampling arms Sphera Duo increases the throughput of Sphera, reduces reagent contamination and thus makes it better suited for laboratories with large testing volumes. ”

- Random access instrument
- Reusable cells with wash station
- Up to 300 tests per hour
- Sample barcode
- Can use primary tubes
- Innovative Hi software
- 2 pipetting arms
- 60 reagent positions
- Easy maintenance
- Handling of urgencies
- Run with software **hi**



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