



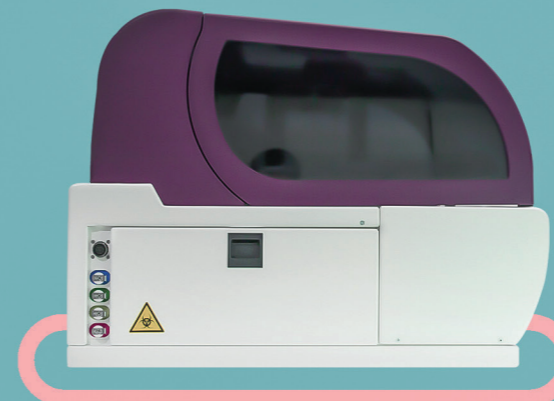
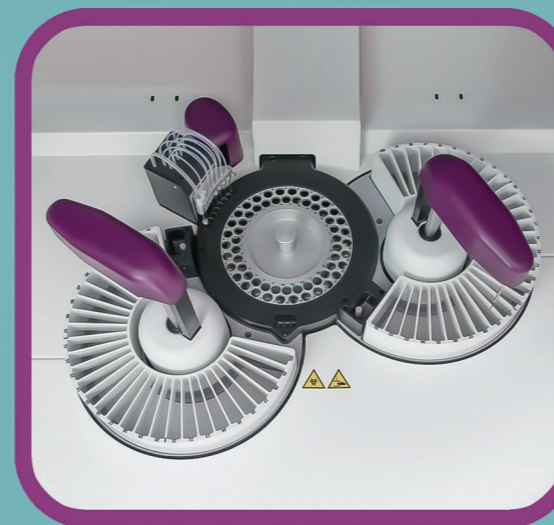
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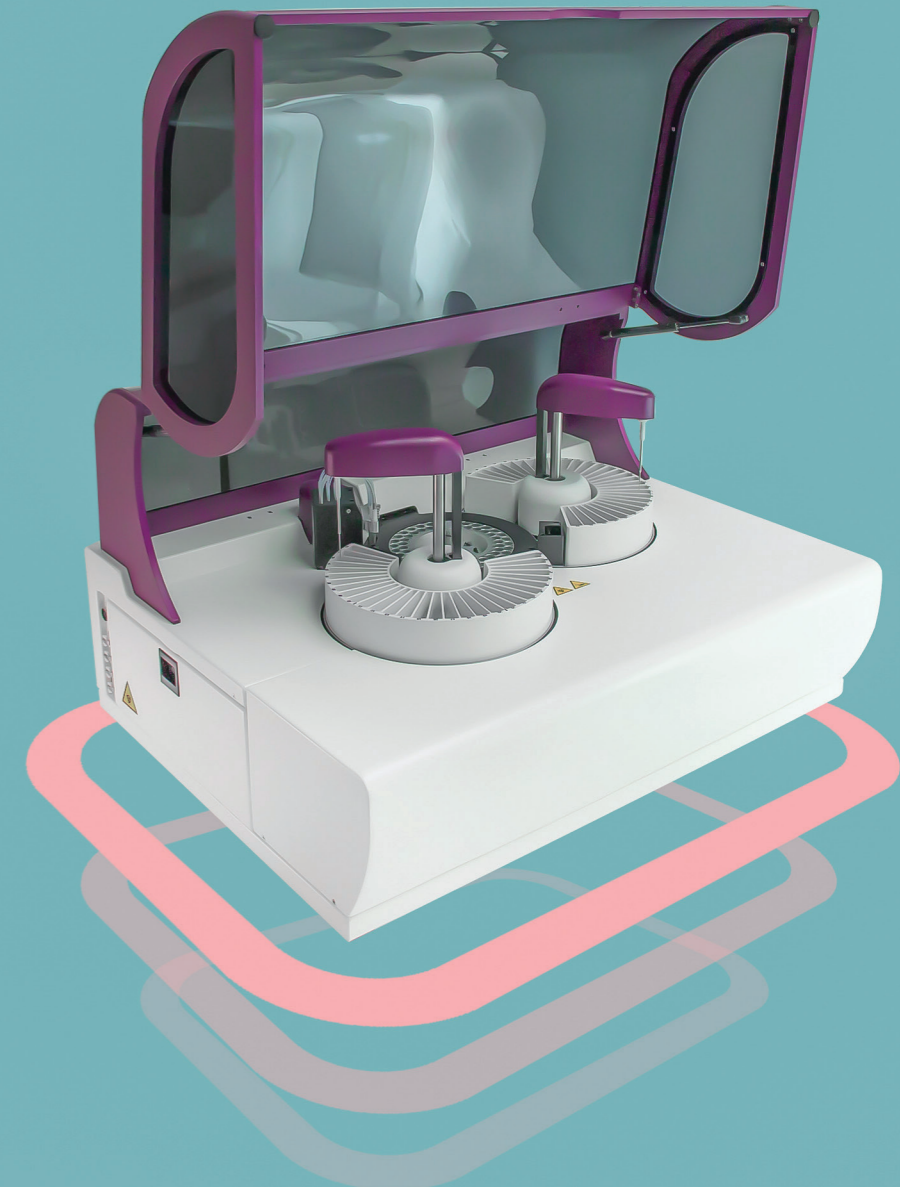
DUO

“ 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)	
POWER SUPPLY	100-240 VAC, 50 / 60 Hz, 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		
SAMPLING ARMS	2 sampling needles, 110 mm needle stroke Capacitive liquid level detector Needle shock sensor		
DILUTER SYRINGE	Long life plunger Syringe capacity, 368 µL Syringe resolution, 0.14 µL		
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		
WASH STATION	Needles: 6 dispensing, 5 aspiration, 1 cleaning (8 step washing sequence for each cuvette)		
REAGENT TRAYS	2 removable trays 30 + 30 bottles, 50 mL or 24 mL (up to 3000 mL total)		
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)		
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		
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		
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		
CONTROL	Real-time multitasking microprocessor based control Easy access to the electronics		
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		
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		
REACTION	Reaction volume, 210 - 350 µL		
SAMPLE DILUTION	In-needle dilution if allowed by method's sample volumes Automatic pre-dilution in a reaction cuvette, up to 1:100		
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)		
TYPES OF TESTS	Endpoint, Bichromatic endpoint, Differential endpoint, Differential endpoint sample blank, Fixed Time, Kinetic		
TEST RUNS	Random / Urgent		
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		
START-UP	The start-up procedure is run daily: self-test, reader offset of optics, wash and check of all cuvettes		
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		
MAINTENANCE	Procedures programmed by component life counters		
PRINTING REPORTS	Single test, complete sample, work sheet, method and QCs Automatic sample reports upon test completion if requested		
NEEDLE WASHING	Sampling needle washed internally and externally with system solution after every operation		
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		



- 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**



“ 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. ”



DUO

