Part 1 of 6

FOR POINT-OF-CARE AND LOW-VOLUME LABORATORIES

	Abbott Point of Care **Jeff Abney** jeff.abney@abbott.com Princeton, NJ **609-454-9000** www.pointofcare.abbott/us/en/home	Awareness Technology **Mary Schaefer** mschaefer@awaretech.com Palm City, FL **772-283-6540** www.awaretech.com	Beckman Coulter **Onyi Nacionales** onacionales@beckman.com Brea, CA **800-526-3821** www.beckmancoulter.com
Name of instrument Type of instrument	i-STAT 1 analyzer combination chemistry/immunoassay	ChemWell 2910 combination chemistry/immunoassay	Access 2 immunoassay
Operational type/Model type List price/First year sold in U.S. Targeted hospital bed size/Targeted test volume Company manufactures instrument Other models in this family of analyzers No. of units in clinical use in U.S./Outside U.S. (countries)	discrete/handheld —/2000 all/— yes (also sold by McKesson, Henry Schein, Medline) > 30,000/> 10,000 (Europe, Latin America, Africa, Middle East, Asia Pacific)	batch, random access, discrete/benchtop $32,000/1998 200–500/daily: 200–500; monthly 200–400 yes (also sold by GMI, Monobind, ASI, others) ChemWell Fusion, ChemWell-T, ChemWell 2902 380/6,000 (worldwide)	continuous random access/benchtop —/2001 —/annual: < 40,000 yes (also sold by McKesson, Henry Schein, Medline) Unicel Dxl 600, Unicel Dxl 800
Dimensions (H × W × D)/Instrument footprint Weight empty/Weight fully loaded No. of different measured assays onboard simultaneously No. of user-definable (open chemistry) channels Test throughput per hour/Assay run time	9.25 × 3 × 2.85 in./< 1 sq. ft. < 2 lbs./< 2 lbs. — — —/2–10 min.	18.625 × 36.25 × 21.5 in./< 7.905 sq. ft. 77 lbs./78 lbs. 15 (12 can be run and calibrated at one time) — 200 (27 tests in throughput)/6–120 min.	19.5 × 39 × 24 in./6.5 sq. ft. 200 lbs./— 24 (24 can be run and calibrated at one time) — up to 100/13–55 min.
Chemistry: No. of direct ion-selective electrode channels Detection methods Stat time until completion/specimen throughput for: • Ion-selective electrode • Basic metabolic panel • Complete metabolic panel Typical time delay from ordering stat test until aspiration of sample	 up to 26 potentiometry, amperometry, conductometry 2 min./20–25 2 min./20–25 — none	 — photometry — — — —	 — — — — — —
Immunoassay: Fully automated microplate immunoassay system Methodologies supported Separation methodologies Stat time until completion of a ß-hCG test • Typical time delay from test order to aspiration of sample Stat time until completion of a cTn test • Typical time delay from test order to aspiration of sample	 yes (up to 26 tests per unit) potentiometry, amperometry, conductometry none necessary 10 min. none 10 min. none	 yes (27–44 tests per unit; 96 wells per microplate) enzyme immunoassay, colorimetric analysis none necessary, coated microwell — — — —	 no chemiluminescence magnetic particle 15 min. 36 sec. 17 min. 36 sec.
Approximate No. of tests per reagent set/Reagent type Reagents refrigerated onboard/Reagents ready to use Reagent lot tracking/Reagent inventory Reagent form/Reagents barcoded Separate reagent pack for each specimen/for each test run Walkaway capability/Walkaway duration	—/self-contained single use no/— no/no dry chemistry, liquid chemistry (closed reagent system)/yes no/no yes/2–10 min. or 1 specimen or up to 13 tests	— yes (12°–15°C on optional cooling accessory)/yes yes/yes liquid chemistry (open reagent system)/no no/yes yes/—	50 per pack or 100 per kit/self-contained multiuse yes (2°–8°C)/yes yes/yes liquid chemistry (closed reagent system)/yes no/no yes/180 min. or 60 specimens
Design of sample-handling system Uses washable cuvettes/Uses disposable cuvettes Min.–max. sample volume that can be aspirated at one time Min. reaction volume/Min. specimen volume/Min. dead volume Dedicated pediatric sample cup Primary tube sampling Accommodates most standard tube sizes/Accepts nonstandard tube sizes Pierces caps on primary tubes Protects against probe collision Detects clots/liquid level/short sample Detection or quantitation for hemolysis, icterus, lipemia, clots Dilutes patient samples onboard/Susceptibility to carryover Automatic rerun capability Sample volume can be diluted to rerun out-of-linear-range high results Sample volume can be concentrated to rerun out-of-linear-range low results	— no/no 17–95 µL — no no no/no no no yes/yes/yes detection for hemolysis, icterus, lipemia, clots no/— no no no	rack no/— 2–250 µL 100 µL/100 µL/100 µL no yes yes/yes (13 mm) no yes no/yes/yes — yes (can be programmed to perform dilutions prior to analysis)/— yes yes yes	rack no/yes (can store up to 294 cuvettes) 5–200 µL varies by assay/varies by assay/80 µL yes (dead volume: 80 µL) yes yes/no no no yes/yes/yes detection for clots; hemolysis, icterus, lipemia not available yes (can be programmed to perform dilutions prior to analysis)/— no yes no
Analyzer requires dedicated water supply Autocalibration/Multipoint calibration supported Typical calibration frequency for ISE/therapeutic drugs/ drugs of abuse/general chemistries/immunoassays Automatic programmable start/Automatic programmable shutdown Onboard real-time QC/Onboard software capability to review QC Supports multiple QC lot numbers per analyte Waste management	no yes (calibrants are not stored onboard)/yes (recommended avg. frequency: each test) —/—/—/each test/each test yes/yes yes/yes yes manually by user	no no (calibrants can be stored onboard)/yes (recommended avg. frequency: test dependent) — no/no yes/yes yes manually by user, automated collection onboard instrument, direct to drain	no no (calibrants are not stored onboard)/yes (recommended avg. frequency: 28 days) —/—/—/—/28 days no (< 5 min. start-up time)/no no/yes yes automated collection onboard instrument
Sample barcode-reading capability/Autodiscrimination Lab can control analyzer from remote computer Instrument can diagnose its own malfunctions System malfunctions can be diagnosed via remote monitoring UPS backup power supply Data-management capability/LIS or EHR systems interfaced LIS interface provided/Bidirectional interface capability Modem servicing provided/Service engineer on-site response time	yes (Interleaved 2 of 5, Codabar, Code 39, Code 128, EAN 8, EAN 13)/— yes yes (operator intervention required to order parts) yes no optional add-on/— yes (additional cost)/no —/— (product replacement within 24 hrs.)	yes (Code 39)/no yes yes (operator intervention required to order parts) yes no onboard/— no/no no/—	yes (Interleaved 2 of 5, Codabar, Code 39, Code 128)/no yes yes (operator intervention required to order parts) yes no onboard/Cerner, Antrim, CCA, Chemware, Dawning Technologies, ADAC, Dynamic Healthcare, Antek, Siemens, McKesson, more yes (included in instrument price)/yes (host query) yes/< 24 hrs.
Mean time between failures Average scheduled maintenance time by lab personnel Maintenance records kept onboard for user/vendor Maintenance training demonstration module onboard Training included with purchase/Avg. time for basic user training Advanced operator training/Extra charge for follow-up or advanced training Warranty provided/Cost of annual service contract (24 h/7 d)	— (displays error codes for troubleshooting) — — — —/4 hrs. (at customer site) yes (at customer site)/no yes (1 year)/—	— (displays error codes for troubleshooting) daily: 8 hrs. no/no no yes (1 training slot)/4 days (at vendor site) yes (at vendor site)/yes yes (1 year from date of manufacture)/$6,000	1.4 down service calls per year (displays error codes for troubleshooting) daily: 7 min.; weekly: 12 min. no/no yes yes (2 training slots)/2 days (at vendor site) yes (at vendor site)/— yes (1 year)/—
Distinguishing features (supplied by company)	• handheld portable analyzer; unit use system can perform chemistry, blood gas, cardiac marker, and coagulation tests • CLIA-waived tests, including glucose and creatinine • uses 2–3 drops of whole blood or plasma	• vertical plate reading for biochemistries • reagent savings • 2-in-1 utility with the ability to run in ELISA mode or biochemistry mode	• offers the robustness of a reference laboratory immunoassay analyzer in convenient size of a benchtop system • standardization of results and reagents across all volume segments • reliable benchtop system providing the same high-quality results as the core lab

Note: a dash in lieu of an answer means company did not answer question or question is not applicable

Part 2 of 6

FOR POINT-OF-CARE AND LOW-VOLUME LABORATORIES

	Beckman Coulter Onyi Nacionales onacionales@beckman.com Brea, CA 800-526-3821 www.beckmancoulter.com	Diatron MI Frank Matuszak frank.matuszak@diatron.com Medley, FL 833-228-7931 www.diatron.com	Dynex Technologies Alex Azar aazar@dynex.com Chantilly, VA 800-288-2354 www.dynex.com
Name of instrument Type of instrument	AU480 chemistry	Pictus 500 (P500) chemistry	DS2 Automated ELISA System immunoassay
Operational type/Model type	continuous random access/floor standing	batch, random access, continuous random access, discrete/benchtop	batch/benchtop
List price/First year sold in U.S. Targeted hospital bed size/Targeted test volume	—/2009 —/annual: 50,000–250,000	$42,860/2016 20–100/daily: 500–2,500; monthly: 15,000–75,000; annual: 182,500–912,500	—/2007 —/daily: < 4 microplates (96-well microplates)
Company manufactures instrument Other models in this family of analyzers No. of units in clinical use in U.S./Outside U.S. (countries)	yes (also sold by McKesson, Henry Schein, Medline) DxC 700 AU, AU 5800 —	yes Pictus 700 (P700) > 40/≤ 200 (Europe, Latin America, Africa, Middle East, Asia)	yes DSX —/4,510 (worldwide)
Dimensions (H × W × D)/Instrument footprint Weight empty/Weight fully loaded No. of different measured assays onboard simultaneously No. of user-definable (open chemistry) channels Test throughput per hour/Assay run time	47.5 × 57 × 30 in./18.5 sq. ft. 926 lbs./— 63 (63 can be run and calibrated at one time) 18 (76 can be active simultaneously) 800 (400 photometric, 800 with ISE)/8.5 min.	24.4 × 35.4 × 26 in./6.4 sq. ft. 253 lbs./271 lbs. 72 (999 can be run and calibrated at one time) — 500/30–1,200 sec. (avg. 300 sec.)	26 × 21 × 27 in./3.7 sq. ft. 105 lbs./— up to 12 assays per microplate (up to 12 can be run) — (open system; up to 12 can be active simultaneously) assay dependent (up to 384 tests per run)/assay dependent
Chemistry: No. of direct ion-selective electrode channels Detection methods Stat time until completion/specimen throughput for: • Ion-selective electrode • Basic metabolic panel • Complete metabolic panel Typical time delay from ordering stat test until aspiration of sample	 3 photometry, potentiometry 4.5 min./400 specimens per hr. 12.5 min./133 specimens per hr. 14.5 min./72 specimens per hr. 60 sec.	 3 photometry, potentiometry 2 min./60 specimens per hr. 7.5 min./45 specimens per hr. 9 min./25 specimens per hr. 24 sec.	 — — — — — —
Immunoassay: Fully automated microplate immunoassay system Methodologies supported Separation methodologies Stat time until completion of a ß-hCG test • Typical time delay from test order to aspiration of sample Stat time until completion of a cTn test • Typical time delay from test order to aspiration of sample	 — — — — — — —	 — — — — — — —	 yes (up to 12 tests per unit; 96 wells per microplate) enzyme immunoassay coated microwell — — — —
Approximate No. of tests per reagent set/Reagent type Reagents refrigerated onboard/Reagents ready to use Reagent lot tracking/Reagent inventory Reagent form/Reagents barcoded Separate reagent pack for each specimen/for each test run Walkaway capability/Walkaway duration	200– >1,000 (varies by assay)/self-contained multiuse yes (4°–12°C)/yes yes/yes liquid chemistry (open reagent system)/yes no/no yes/80 specimens	50–200 per set, 400–1,800 per pack/self-contained multiuse, open reagent system yes (8°±2°C)/yes yes/yes liquid chemistry (open reagent system)/no no/no yes/180 min. or 95 specimens or 1,200 tests/assays	—/open reagent system no (23°±4°C)/— yes/yes liquid chemistry (open reagent system)/yes no/yes yes/up to 192 specimens or up to 192 tests/assays
Design of sample-handling system Uses washable cuvettes/Uses disposable cuvettes Min.–max. sample volume that can be aspirated at one time Min. reaction volume/Min. specimen volume/Min. dead volume Dedicated pediatric sample cup Primary tube sampling Accommodates most standard tube sizes/Accepts nonstandard tube sizes Pierces caps on primary tubes Protects against probe collision Detects clots/liquid level/short sample Detection or quantitation for hemolysis, icterus, lipemia, clots Dilutes patient samples onboard/Susceptibility to carryover Automatic rerun capability Sample volume can be diluted to rerun out-of-linear-range high results Sample volume can be concentrated to rerun out-of-linear-range low results	rack yes/no 1–25 µL 90 µL/41 µL or 1 uL with 4 mm above gel barrier/50 µL yes (dead volume: 50 µL) yes yes/yes (primary, secondary tubes: 11.5–16 × 55–102 mm; nested micro cups) no yes yes/yes/yes detection and quantitation for hemolysis, icterus, lipemia, clots yes (can be programmed to perform sample dilutions prior to analysis)/0.001 parts per million yes yes yes	rack yes/yes (can store up to 80 cuvettes) 2–100 µL 180 µL/22 µL/100 µL yes (dead volume: 20 µL) yes yes/no yes yes yes/yes/yes detection for clots; hemolysis, icterus, lipemia not available yes (can be programmed to perform dilutions prior to analysis)/30 parts per million yes yes yes	rack no/— 10–300 µL 10 µL/—/— no yes yes/yes (17 × 100 mm) no no yes/yes/yes detection for clots; hemolysis, icterus, lipemia not available yes (can be programmed to perform dilutions prior to analysis)/0 parts per million no yes no
Analyzer requires dedicated water supply Autocalibration/Multipoint calibration supported Typical calibration frequency for ISE/therapeutic drugs/drugs of abuse/general chemistries/immunoassays Automatic programmable start/Automatic programmable shutdown Onboard real-time QC/Onboard software capability to review QC Supports multiple QC lot numbers per analyte Waste management	yes (20 L/hr. consumption during operation) yes (calibrants are not stored onboard)/yes (recommended avg. frequency: assay dependent) 1 day/14 days/14–20 days/30 days/— no/no yes/yes — direct to drain	no (2 L/hr. consumption during operation) yes (calibrants can be stored onboard)/yes (recommended avg. frequency: 7 days) 8 hrs./—/7 days/14 days/14 days no/no yes/yes yes manually by user, direct to drain	no no (calibrants are not stored onboard)/yes (recommended avg. frequency: assay dependent) —/assay dependent/assay dependent/—/assay dependent no/no yes/yes yes automated collection onboard instrument
Sample barcode-reading capability/Autodiscrimination Lab can control analyzer from remote computer Instrument can diagnose its own malfunctions System malfunctions can be diagnosed via remote monitoring UPS backup power supply Data-management capability/LIS or EHR systems interfaced LIS interface provided/Bidirectional interface capability Modem servicing provided/Service engineer on-site response time	yes (Interleaved 2 of 5, Codabar, Code 39, Code 128)/yes yes yes (operator intervention required to order parts) yes yes onboard/Cerner, Antrim, CCA, Chemware, Dawning Technologies, ADAC, Dynamic Healthcare, Antek, Siemens, McKesson, more yes (included in instrument price)/yes (broadcast download and host query) yes/< 24 hrs.	yes (Interleaved 2 of 5, UPC, Codabar, Code 39, Code 128)/no yes yes (operator intervention required to order parts) yes yes onboard/AP Vision, Medicus, Schuyler, LabTrack, CGM LabDaq, Medytox yes (additional cost)/yes (broadcast download and host query) no/48 hrs.	yes (UPC, Codabar, Code 39, Code 128, Code 93)/yes no yes (operator intervention required to order parts) yes yes onboard/Orchard, Cerner no/yes (host query) no/24 hrs.
Mean time between failures Average scheduled maintenance time by lab personnel Maintenance records kept onboard for user/vendor Maintenance training demonstration module onboard Training included with purchase/Avg. time for basic user training Advanced operator training/Extra charge for follow-up or advanced training Warranty provided/Cost of annual service contract (24 h/7 d)	1.2 down service calls per year (displays error codes for troubleshooting) daily: 6 min.; weekly: 10 min.; monthly: 45 min. yes/no yes yes (2 training slots)/3 days (at customer and vendor sites) yes (at vendor site)/— yes (1 year)/—	1 per year (displays error codes for troubleshooting) daily: 30 min.; weekly: 1 hr.; monthly: 2 hrs. no/no no yes (2 training slots)/3 days (at customer site) yes (at vendor or customer site)/yes yes (1 year)/ $5,500	250 days (displays error codes for troubleshooting) daily: 10 min.; weekly: 5 min. no/no no no/3 days (at customer site) yes (at customer site)/yes yes (1 year)/—
Distinguishing features (supplied by company)	• standardization across the AU family of chemistry analyzers • lower total cost of ownership due to fewer consumables and concentrated reagents • commonly replaced parts can be changed in 3 steps or less, in 60 seconds or less, without tools	• uninterrupted workflow • Windows-based, intuitive, user-friendly software • high-quality components for long stability and result reliability	• run any assay from any vendor–fully automated open system • reliable workload scheduling–more than 98 percent mean time between failures • saves space–less than 4 sq. ft. of linear counter space to process up to two 96-well microplates and 100 specimens

Note: a dash in lieu of an answer means company did not answer question or question is not applicable

Part 3 of 6	ELITechGroup	Gold Standard Diagnostics	HORIBA Medical
FOR POINT-OF-CARE AND LOW-VOLUME LABORATORIES	**Trish Worman** p.worman@elitechgroup.com **Logan, UT** **435-752-6011** www.elitechgroup.com	**Christina Brusca** cbrusca@gsdx.us **Davis, CA** **530-759-8000** www.gsdx.us	**Susan Behnke** medical-marketing.us@horiba.com **Irvine, CA** **888-903-5001** www.horiba.com/us/en/medical/
Name of instrument	Selectra Pro M	Bolt	Pentra C400
Type of instrument	chemistry	immunoassay	chemistry
Operational type/Model type	batch, random access, continuous random access, discrete/benchtop	batch/benchtop	batch, random access, continuous random access, discrete/benchtop
List price/First year sold in U.S.	$64,375/2012	—/2016	$100,000/2006
Targeted hospital bed size/Targeted test volume	—/daily: 10–40 patients; monthly: 3,333–8,333 tests; annual: 40,000–100,000 tests	—	≤ 250/daily: 1,200; monthly: 24,000; annual: 288,000
Company manufactures instrument	yes (also sold by McKesson, Medline, RedByrd)	yes (also sold by distribution partners)	yes (also sold by distribution partners)
Other models in this family of analyzers	Selectra Pro S	—	Pentra 400
No. of units in clinical use in U.S./Outside U.S. (countries)	35/7,000	—	650/1,900
Dimensions (H × W × D)/Instrument footprint	30 × 48 × 24.4 in./8.1 sq. ft.	22 × 19 × 21 in./8 sq. ft.	25 × 40 × 28 in./7.7 sq. ft.
Weight empty/Weight fully loaded	210 lbs./—	60 lbs./110 lbs.	264 lbs./266 lbs.
No. of different measured assays onboard simultaneously	36 (96 can be run and calibrated at one time)	open EIA platform (up to 12 with limit of two washes, nine reagents and common incubation temperature, plate frame type)	55 (55 can be run and calibrated at one time)
No. of user-definable (open chemistry) channels	10 (10 can be active simultaneously)	—	40 (40 can be active simultaneously)
Test throughput per hour/Assay run time	180 (180 tests in throughput)/—	assay dependent (96 tests in throughput)/20 min.–4 hr. (avg. 2 hr.)	420 (4 tests in throughput)/1–10 min. (avg. 5 min.)
Chemistry:			
No. of direct ion-selective electrode channels	4	—	3
Detection methods	potentiometry	—	photometry, potentiometry, enzyme immunoassay immunoturbidimetry
Stat time until completion/specimen throughput for:			
• Ion-selective electrode	5 min./66 specimens per hr.	—	< 5 min./37 specimens per hr.
• Basic metabolic panel	—/27 specimens per hr.	—	7.5 min./35 specimens per hr.
• Complete metabolic panel	13 min., 35 sec./12 specimens per hr.	—	< 11 min./23 specimens per hr.
Typical time delay from ordering stat test until aspiration of sample	3 min.	—	< 1 min.
Immunoassay:			
Fully automated microplate immunoassay system	—	yes (96 tests per unit; 96 wells per microplate)	—
Methodologies supported	—	chemiluminescence, enzyme immunoassay	—
Separation methodologies	—	coated microwell	—
Stat time until completion of a ß-hCG test	—	—	—
• Typical time delay from test order to aspiration of sample	—	—	—
Stat time until completion of a cTn test	—	—	—
• Typical time delay from test order to aspiration of sample	—	—	—
Approximate No. of tests per reagent set/Reagent type	varies/self-contained multiuse	96/open reagent system	100–400/self-contained multiuse, open reagent system
Reagents refrigerated onboard/Reagents ready to use	yes (10°C)/yes	no (room temperature–40°C)/variable; reagent specific	yes (2°–8°C)/variable; reagent specific
Reagent lot tracking/Reagent inventory	yes/yes	yes/no	yes/yes
Reagent form/Reagents barcoded	liquid chemistry (open reagent system)/yes	liquid chemistry (open reagent system)/no	liquid chemistry (open reagent system)/yes
Separate reagent pack for each specimen/for each test run	no/no	no/yes	no/no
Walkaway capability/Walkaway duration	yes/240 min. or 62 specimens or 720 tests/assays	yes/avg. 120 min.	yes/180 min. or 60 specimens or > 800 tests/assays
Design of sample-handling system	ring	rack	rack
Uses washable cuvettes/Uses disposable cuvettes	yes/no (can store up to 48 cuvettes)	no/no	no/yes (can store up to 432 cuvettes)
Min.–max. sample volume that can be aspirated at one time	1–30 µL	1–300 µL	2–60 µL
Min. reaction volume/Min. specimen volume/Min. dead volume	220 µL/1 µL/250 µL	25 µL/151 µL/150 µL	180 µL/2 µL/100 µL
Dedicated pediatric sample cup	yes (dead volume: 100 µL)	no	yes (dead volume: 100 µL)
Primary tube sampling	yes	yes	yes
Accommodates most standard tube sizes/Accepts nonstandard tube sizes	yes/no	yes/no	yes/yes
Pierces caps on primary tubes	no	no	no
Protects against probe collision	yes	yes	yes
Detects clots/liquid level/short sample	no/yes/yes	no/yes/yes	yes/yes/yes
Detection or quantitation for hemolysis, icterus, lipemia, clots	hemolysis, icterus, lipemia, clots not available	hemolysis, icterus, lipemia, clots not available	detection for clots, hemolysis, icterus, lipemia
Dilutes patient samples onboard/Susceptibility to carryover	yes (can be programmed to perform dilutions prior to analysis)/—	yes (can be programmed to perform dilutions prior to analysis)/assay specific	yes (can be programmed to perform dilutions prior to analysis)/—
Automatic rerun capability	yes	no	yes
Sample volume can be diluted to rerun out-of-linear-range high results	yes	no	yes
Sample volume can be concentrated to rerun out-of-linear-range low results	no	no	yes
Analyzer requires dedicated water supply	no	no	no (average of 0.5 L/hr. consumption during operation)
Autocalibration/Multipoint calibration supported	no (calibrants are not stored onboard)/yes (recommended avg. frequency: 28 days)	no (calibrants are not stored onboard)/yes (recommended avg. frequency: per batch)	yes (calibrants can be stored onboard)/yes (recommended avg. frequency: 14 days)
Typical calibration frequency for ISE/therapeutic drugs/drugs of abuse/general chemistries/immunoassays	4–8 hrs./2 weeks min./when indicated (if QC fails)/28 days/—	—/—/—/—/per batch	2 hrs. (automatic)/—/—/avg. 14 days/—
Automatic programmable start/Automatic programmable shutdown	yes (15 min. start-up time)/yes	no (5 min. start-up time)/no	yes (5 min. start-up time)/no
Onboard real-time QC/Onboard software capability to review QC	yes/yes	yes/yes	yes/yes
Supports multiple QC lot numbers per analyte	yes	yes	no
Waste management	automated collection onboard instrument, direct to drain	manually by user	direct to drain or container if no drain available
Sample barcode-reading capability/Autodiscrimination	yes (Interleaved 2 of 5, Codabar, Code 39, Code 128)/yes	yes (unspecified)/no	yes (Interleaved 2 of 5, UPC, Codabar, Code 39, Code 128)/yes
Lab can control analyzer from remote computer	no	no	no
Instrument can diagnose its own malfunctions	yes (operator intervention required to order parts)	yes (operator intervention required to order parts)	yes (operator intervention required to order parts)
System malfunctions can be diagnosed via remote monitoring	yes	yes	yes
UPS backup power supply	yes	no	no
Data-management capability/LIS or EHR systems interfaced	onboard/CGM LabDaq, Schuyler House SchuyLab, McKesson Horizon Lab, Medicus Solutions, more	onboard/—	onboard/CGM LabDaq, Orchard, Cerner, Sunquest, Meditech, Schuyler House
LIS interface provided/Bidirectional interface capability	no/yes (broadcast download and host query)	no/yes (host query)	no/yes (broadcast download and host query)
Modem servicing provided/Service engineer on-site response time	no/24 business hrs.	yes/48 hrs.	no/< 24 hrs.
Mean time between failures	— (displays error codes for troubleshooting)	— (displays error codes for troubleshooting)	avg. 250 days (displays error codes for troubleshooting)
Average scheduled maintenance time by lab personnel	daily: 5 min.; weekly: 5 min.; monthly: 15 min.	daily: 5 min.; weekly: 15 min.; monthly: 20 min.	daily: < 5 min.; weekly: < 15 min.; monthly: < 30 min.
Maintenance records kept onboard for user/vendor	yes/no	yes/some records (dye tests and calibrations)	yes (includes audit trail of who replaced parts)/no
Maintenance training demonstration module onboard	no	no	no
Training included with purchase/Avg. time for basic user training	yes (2 training slots)/3 days (at customer site)	yes (No. of training slots client dependent)/4 hrs. (at customer or vendor site)	yes/2.5 days (at vendor or customer site)
Advanced operator training/Extra charge for follow-up or advanced training	yes (at customer site)/no	yes (at customer or vendor site)/yes (client dependent)	yes (at vendor site)/yes
Warranty provided/Cost of annual service contract (24 h/7 d)	yes (1 year)/$4,500 (M–F, 8 AM–7 PM)	yes (1 year)/—	yes (1 year)/—
Distinguishing features (supplied by company)	• cost-efficient benchtop chemistry system for small to mid-size labs • TouchPro software with smart icons guides operator through daily workflow, including configurable daily checklists • 4-parameter (Na+, K+, Cl–, CO2) dry electrodes reduce costs and maintenance time, increase reliability of results	• open architecture: program any EIA or CLIA protocol, fully customizable with flexible, intuitive software • space saving: high capacity (96 samples) in 2 ft. × 2 ft. footprint • cost saving: low instrument price point with no routine consumables required	• full menu of moderately complex drugs of abuse and general chemistry assays; can run up to 55 assays onboard with 420 results/hr. • no requirement for external water system, no drain or special electrical required; remote diagnostics available for real-time troubleshooting • flexible, open-channel system capable of running ≤ 40 third-party reagents onboard

Note: a dash in lieu of an answer means company did not answer question or question is not applicable

Part 4 of 6	HYCOR Biomedical	Nova Biomedical	Ortho Clinical Diagnostics
FOR POINT-OF-CARE AND LOW-VOLUME LABORATORIES	**Erik van Megen** marketingdept@hycorbiomedical.com **Garden Grove, CA** **800-382-2527** www.hycorbiomedical.com	info@novabio.com **Waltham, MA** **800-458-5813** www.novabiomedical.com	**Laura Osborne** laura.osborne@orthoclinicaldiagnostics.com **Raritan, NJ** **800-828-6316** www.orthoclinicaldiagnostics.com
Name of instrument Type of instrument	HYTEC 288 PLUS immunoassay	Stat Profile Prime Plus chemistry	VITROS XT 3400 Chemistry Systems chemistry
Operational type/Model type	batch/benchtop	random access/benchtop	batch, random access, continuous random access, discrete/floor standing
List price/First year sold in U.S. Targeted hospital bed size/Targeted test volume Company manufactures instrument Other models in this family of analyzers No. of units in clinical use in U.S./Outside U.S. (countries)	$55,000/1999 200/variable yes (also sold by distribution partners) — > 100/> 200 (Canada, Europe, Middle East, South America)	—/2018 yes (also sold by distribution partners) Stat Profile Prime CCS, Stat Profile Prime, Stat Profile Prime ES —	—/2019 —/annual: 50,000–4 million no (manufactured by JABIL; also sold by Cardinal, McKesson, more) VITROS 4600 Chemistry System, VITROS 350 Chemistry System > 140/> 140 (North, Central, and South Americas, more)
Dimensions (H × W × D)/Instrument footprint Weight empty/Weight fully loaded No. of different measured assays onboard simultaneously No. of user-definable (open chemistry) channels Test throughput per hour/Assay run time	29.5 × 42.5 × 27.5 in./8 sq. ft. 198 lbs./198 lbs. up to 288 (up to 288 can be run and calibrated at one time) 3 48 (288 tests in throughput)/6 hrs.	18 × 14 × 16 in./1.5 sq. ft. 35 lbs./42 lbs. 20 (20 can be run and calibrated at one time) 30 (30 can be active simultaneously) up to 38 (760 tests in throughput)/avg. 60 sec.	53 × 58 × 34 in./— 1,150 lbs./— 89 (89 can be run and calibrated at one time) — 1,130/2.5–9 min. (avg. 5 min.)
Chemistry: No. of direct ion-selective electrode channels Detection methods	 — —	 7 photometry, potentiometry, Severinghaus, amperometry, conductivity, enzyme	 3 photometry, potentiometry, turbidimetry
Stat time until completion/specimen throughput for: • Ion-selective electrode • Basic metabolic panel • Complete metabolic panel Typical time delay from ordering stat test until aspiration of sample	 — — — —	 1 min./60 specimens per hr. 1 min./60 specimens per hr. 1 min./60 specimens per hr. 3 sec.	 5 min./126 specimens per hr. 6 min./95 specimens per hr. 7.5 min./74 specimens per hr. 1 min.
Immunoassay: Fully automated microplate immunoassay system Methodologies supported Separation methodologies Stat time until completion of a ß-hCG test • Typical time delay from test order to aspiration of sample Stat time until completion of a cTn test • Typical time delay from test order to aspiration of sample	 no enzyme immunoassay — — — — —	 — — — — — — —	 — — — — — — —
Approximate No. of tests per reagent set/Reagent type Reagents refrigerated onboard/Reagents ready to use Reagent lot tracking/Reagent inventory Reagent form/Reagents barcoded Separate reagent pack for each specimen/for each test run Walkaway capability/Walkaway duration	20 or 10/self-contained multiuse no/yes yes/no liquid chemistry (open reagent system)/no no/yes yes/288 tests/assays	100, 200, 300, 400, or 500/self-contained multiuse no/yes yes/yes liquid chemistry (closed reagent system)/yes no/no yes/1 min. or 1 specimen or 20 tests/assays	18–120/self-contained single use yes (10°C)/yes yes/yes dry chemistry (closed reagent system)/yes no/no yes/—
Design of sample-handling system	rack	probe	universal sample tray, continuous load and unload, circular routine sample center
Uses washable cuvettes/Uses disposable cuvettes Min.–max. sample volume that can be aspirated at one time Min. reaction volume/Min. specimen volume/Min. dead volume Dedicated pediatric sample cup Primary tube sampling Accommodates most standard tube sizes/Accepts nonstandard tube sizes	no/yes (can store up to 288 cuvettes) 50 µL maximum 10 µL/50 µL/100 µL no no yes/no	no/yes 135 µL 135 µL/135 µL/— no yes yes/yes	no/no 2–200 µL —/2.5 µL/35 µL yes (dead volume: 35 µL) yes yes/yes (micro sample cups, micro collection containers, 10.25 × 45 mm, 12 × 75 mm, 12 × 100 mm, 13 × 75 mm, more)
Pierces caps on primary tubes Protects against probe collision Detects clots/liquid level/short sample Detection or quantitation for hemolysis, icterus, lipemia, clots	no no no/no/yes hemolysis, icterus, lipemia, clots not available	no yes yes/yes/yes detection for hemolysis, icterus, lipemia, clots	no yes yes/yes/yes detection for clots; detection and quantitation for hemolysis, icterus, lipemia
Dilutes patient samples onboard/Susceptibility to carryover	yes (can be programmed to perform dilutions prior to analysis)/< 1 part per 10,000	no/—	yes/0
Automatic rerun capability Sample volume can be diluted to rerun out-of-linear-range high results Sample volume can be concentrated to rerun out-of-linear-range low results	no no no	no no no	yes yes yes
Analyzer requires dedicated water supply Autocalibration/Multipoint calibration supported	no yes (calibrants are not stored onboard)/yes (recommended avg. frequency: monthly)	no yes (calibrants can be stored onboard)/yes	no no (calibrants are not stored onboard)/yes (recommended avg. frequency: 6 months or lot change)
Typical calibration frequency for ISE/therapeutic drugs/drugs of abuse/general chemistries/immunoassays Automatic programmable start/Automatic programmable shutdown Onboard real-time QC/Onboard software capability to review QC Supports multiple QC lot numbers per analyte Waste management	—/—/—/—/monthly no/yes yes/no yes manually by user	— yes (5 min. avg. start-up time)/yes yes/yes yes automated collection onboard instrument	6 months/6 months/6 months/6 months or lot change for most chemistry assays/— no/no yes/yes yes manually by user
Sample barcode-reading capability/Autodiscrimination	yes (Codabar, Code 39)/—	yes (Interleaved 2 of 5, UPC, Codabar, Code 39, Code 128)/yes	yes (Interleaved 2 of 5, UPC, Codabar, Code 39, Code 128, ISBT 128)/yes
Lab can control analyzer from remote computer Instrument can diagnose its own malfunctions System malfunctions can be diagnosed via remote monitoring UPS backup power supply Data-management capability/LIS or EHR systems interfaced LIS interface provided/Bidirectional interface capability	yes yes (operator intervention required to order parts) no yes onboard/— yes (additional cost)/yes (host query)	yes yes (operator intervention required to order parts) yes no onboard, optional add-on (NovaNet, more)/— yes (included in instrument price)/yes (broadcast download and host query)	no yes (operator intervention required to order parts) yes yes onboard/— yes (included in instrument price)/yes (broadcast download and host query)
Modem servicing provided/Service engineer on-site response time	no/within 48 hrs.	no/within 8 hrs.	yes/4 hrs.
Mean time between failures Average scheduled maintenance time by lab personnel Maintenance records kept onboard for user/vendor	210 days (displays error codes for troubleshooting) daily: 10–15 min.; weekly: 20–25 min.; monthly: 20–25 min. yes/no	— (displays error codes for troubleshooting) weekly: 5 min.; daily: 30 min. yes (includes audit trail of who replaced parts)/yes (includes audit trail of who replaced parts)	— (displays error codes for troubleshooting) daily: ~7 min. (incl. automated); weekly: ~10 min.; monthly: ~10 min. yes (includes audit trail of who replaced parts)/yes (includes audit trail of who replaced parts)
Maintenance training demonstration module onboard Training included with purchase/Avg. time for basic user training Advanced operator training/Extra charge for follow-up or advanced training	no yes (2 training slots)/2 days (at customer site) no/—	yes yes/30 min. (at customer site) yes/no	no yes (1 training slot)/4 days (at both vendor and customer sites) yes (at both vendor and customer sites)/yes
Warranty provided/Cost of annual service contract (24 h/7 d)	yes (1 year)/—	yes (5 years)/—	yes (1 year)/—
Distinguishing features (supplied by company)	• menu • ease of use • quality of results	• maintenance-free MicroSensor Card and disposable cartridge technology for sensors and reagents • broad menu including iMg, BUN, creatinine, CO-oximetry, estimated plasma volume • automated, liquid QC and supplemental quality monitoring for EP23A compliance and real-time verification of all analytical components during calibration, sample analysis, QC analysis	• incorporates digital reflectometry to process two unique chemistry tests simultaneously on one XT Microslide • waterless system with single-use disposable tips for sample and reagent metering eliminates sample and reagent carryover • MicroSensor technology detects HIL and turbidity without using reagents or additional sample and time

Note: a dash in lieu of an answer means company did not answer question or question is not applicable

Part 5 of 6 **FOR POINT-OF-CARE AND LOW-VOLUME LABORATORIES**	**Roche Diagnostics** **Mark Sprunger** mark.sprunger@roche.com **Indianapolis, IN** 800-428-5074 diagnostics.roche.com/us/en/home.html	**Roche Diagnostics** **Mark Sprunger** mark.sprunger@roche.com **Indianapolis, IN** 800-428-5074 diagnostics.roche.com/us/en/home.html	**Thermo Fisher Scientific/BRAHMS** info.brahms@thermofisher.com **Hennigsdorf, Germany** +49(0)33028830 www.thermoscientific.com/kryptor
Name of instrument Type of instrument	cobas c 311 chemistry	cobas e 411 immunoassay	B·R·A·H·M·S KRYPTOR compact PLUS immunoassay
Operational type/Model type	random access, continuous random access/floor standing	random access, continuous random access/benchtop	batch, random access, continuous random access/benchtop
List price/First year sold in U.S. Targeted hospital bed size/Targeted test volume Company manufactures instrument Other models in this family of analyzers No. of units in clinical use in U.S./Outside U.S. (countries)	—/2009 < 100/daily: < 200; monthly: < 40,000; annual: < 500,000 no (manufactured by Hitachi High-Technologies) — > 300/> 2,500 (> 50 countries)	—/2008 < 100/daily: < 200; monthly: < 40,000; annual: < 500,000 no (manufactured by Hitachi High-Technologies) — > 800/> 10,000 (> 50 countries)	—/2015 —/daily: 450; monthly: 9,000; annual: 125,000 yes (also sold by distribution partners) B·R·A·H·M·S KRYPTOR GOLD —/> 900 (worldwide)
Dimensions (H × W × D)/Instrument footprint Weight empty/Weight fully loaded No. of different measured assays onboard simultaneously No. of user-definable (open chemistry) channels Test throughput per hour/Assay run time	50 × 52 × 34 in./8.5 sq. ft. 551 lbs./625 lbs. 42 photometrics, 3 ISEs (up to 90 can be run and calibrated at one time) 10 (10 can be active simultaneously) up to 300 (300 tests in throughput)/3–10 min. (avg. 7 min.)	disk: 31.4 × 47.2 × 28.7 in./9.4 sq. ft.; rack: 31.4 × 67 × 37.4 in./17.4 sq. ft. disk: 397 lbs./397 lbs.; rack: 551 lbs./551 lbs. 18 (18 can be run and calibrated at one time) 0 86 (86 tests in throughput)/9–27 min. (avg. 18 min.)	24 × 29 × 29 in./4.59 sq. ft. 119 lbs./— 8 (8 can be run and calibrated at one time) — up to 60 (up to 60 tests in throughput)/9–59 min.
Chemistry: No. of direct ion-selective electrode channels Detection methods Stat time until completion/specimen throughput for: • Ion-selective electrode • Basic metabolic panel • Complete metabolic panel Typical time delay from ordering stat test until aspiration of sample	 3 photometry, potentiometry 5 min./150 specimens per hr. 8 min./60 specimens per hr. 11 min./27 specimens per hr. < 1 min.	 — — — — — —	 — — — — — —
Immunoassay: Fully automated microplate immunoassay system Methodologies supported Separation methodologies Stat time until completion of a ß-hCG test • Typical time delay from test order to aspiration of sample Stat time until completion of a cTn test • Typical time delay from test order to aspiration of sample	 — — — — — — —	 no electrochemiluminescence magnetic particle ~10 min. < 1 min. ~10 min. < 1 min.	 no fluorescence, enzyme immunoassay none necessary 14 min. 2 min. — —
Approximate No. of tests per reagent set/Reagent type Reagents refrigerated onboard/Reagents ready to use Reagent lot tracking/Reagent inventory Reagent form/Reagents barcoded Separate reagent pack for each specimen/for each test run Walkaway capability/Walkaway duration	50–800/self-contained multiuse yes (5°–15°C)/yes yes/yes liquid chemistry (open reagent system)/yes no/no yes/60–180 min. or 108 specimens or 45 tests/assays	100–200/self-contained multiuse no (20° ±3°C)/yes yes/yes liquid chemistry (closed reagent system)/yes no/no yes/30–60 min. or 30 specimens (disk), 75 specimens (rack) or 2,000–3,000 tests/assays	50–100/self-contained single use yes (2°–8°C)/yes yes/yes liquid chemistry (closed reagent system)/yes no/no yes/max. 220 min. (assay dependent) or up to 64 specimens or up to 96 tests
Design of sample-handling system Uses washable cuvettes/Uses disposable cuvettes Min.–max. sample volume that can be aspirated at one time Min. reaction volume/Min. specimen volume/Min. dead volume Dedicated pediatric sample cup Primary tube sampling Accommodates most standard tube sizes/Accepts nonstandard tube sizes Pierces caps on primary tubes Protects against probe collision Detects clots/liquid level/short sample Detection or quantitation for hemolysis, icterus, lipemia, clots Dilutes patient samples onboard/Susceptibility to carryover Automatic rerun capability Sample volume can be diluted to rerun out-of-linear-range high results Sample volume can be concentrated to rerun out-of-linear-range low results	ring yes/yes (can store up to 66 cuvettes) 1–35 µL 6 µL/51 µL/50 µL yes (dead volume: 50 µL) yes yes/yes (12 × 100 mm) no yes yes/yes/yes detection for clots; quantitation for hemolysis, icterus, lipemia yes (can be programmed to perform sample dilutions prior to analysis)/< 1 part per million yes yes yes	disk: ring; rack: rack no/yes (can store up to 360 assay tips, 180 assay cups) 10–50 µL 100 µL/10 µL/100 µL yes (dead volume: 50 µL) yes yes/yes (12 × 100 mm) no yes yes/yes/yes detection for clots; hemolysis, icterus, lipemia not available yes (can be programmed to perform sample dilutions prior to analysis)/0 (uses disposable tips) yes yes yes	sample cassette placed in sample carousel no/no 8–70 µL 150 µL/sample tube and assay dependent/150 µL (sample tube dependent) yes (dead volume: 75 µL) yes yes/yes (11–17 × 60–120 mm) no no yes/yes/yes detection for hemolysis, icterus, lipemia, clots yes (can be programmed to perform dilutions prior to analysis)/≤ 2 parts per million (no contamination) yes yes yes
Analyzer requires dedicated water supply Autocalibration/Multipoint calibration supported Typical calibration frequency for ISE/therapeutic drugs/ drugs of abuse/general chemistries/immunoassays Automatic programmable start/Automatic programmable shutdown Onboard real-time QC/Onboard software capability to review QC Supports multiple QC lot numbers per analyte Waste management	yes (12 L/hr. consumption during operation) yes (calibrants are not stored onboard)/yes (recommended avg. frequency: 24 hrs. [ISE]; once per lot [chemistry]) 24 hrs./per lot/per lot/per lot/— no (5 min. start-up time)/yes yes/yes yes direct to drain	no (3 L consumption for 250 tests) yes (calibrants are not stored onboard)//yes (recommended avg. frequency: 28 days) —/—/—/—/28 days yes (4 min. avg. start-up time)/yes yes/yes yes automated collection onboard instrument	no yes (calibrants are not stored onboard)/no —/—/—/—/5–15 days no/no yes/yes yes manually by user, automated collection onboard instrument
Sample barcode-reading capability/Autodiscrimination Lab can control analyzer from remote computer Instrument can diagnose its own malfunctions System malfunctions can be diagnosed via remote monitoring UPS backup power supply Data-management capability/LIS or EHR systems interfaced LIS interface provided/Bidirectional interface capability Modem servicing provided/Service engineer on-site response time	yes (Interleaved 2 of 5, Codabar, Code 39, Code 128)/yes yes yes (operator intervention required to order parts) yes yes onboard/SCC Soft Computer, Meditech, Cerner, Epic, Sunquest, more yes (included in instrument price)/yes (broadcast download and host query) yes/< 24 hrs.	yes (Interleaved 2 of 5, Codabar, Code 39, Code 128, PDF417)/yes no yes (operator intervention required to order parts) yes yes onboard/SCC Soft Computer, Meditech, Cerner, Epic, Sunquest, more yes (included in instrument price)/yes (broadcast download and host query) yes/< 24 hrs.	yes (Interleaved 2 of 5, UPC, Codabar, Code 39, Code 128)/yes no yes (operator intervention required to order parts) yes yes onboard/— yes (additional cost)/yes (broadcast download and host query) yes/Mon.–Fri.: 26 hrs. at total breakdown, 72 hrs. at workaround
Mean time between failures Average scheduled maintenance time by lab personnel Maintenance records kept onboard for user/vendor Maintenance training demonstration module onboard Training included with purchase/Avg. time for basic user training Advanced operator training/Extra charge for follow-up or advanced training Warranty provided/Cost of annual service contract (24 h/7 d)	279 days (displays error codes for troubleshooting) daily: 5 min.; weekly: 18 min.; monthly: 38 min. yes (includes audit trail of who replaced parts)/yes (includes audit trail of who replaced parts) yes yes (1 training slot)/1 week (at both vendor and customer sites) yes (at vendor site)/yes yes (1 year)/configuration dependent	368 days (displays error codes for troubleshooting) daily: 5 min.; weekly: 6 min.; monthly: 11 min. some records/some records yes yes (1 training slot)/1 week (at both vendor and customer sites) yes (at vendor site)/yes yes (1 year)/configuration dependent	— (displays error codes for troubleshooting) daily: 3 min.; weekly: 3 min.; monthly: 5 min. yes (includes audit trail of who replaced parts)/yes (includes audit trail of who replaced parts) no yes (1 training slot)/1.5–2 days (at customer site) yes (at vendor site)/yes yes (1 year)/contract dependent
Distinguishing features (supplied by company) *Note: a dash in lieu of an answer means company did not answer question or question is not applicable*	• drives lab efficiency with standardized instrumentation, reference ranges, consumables, and usage • minimizes downtime with industry-leading service; 213-day mean time between repair visits (average) • speeds up turnaround time for high-volume stat assays	• drives lab efficiency with standardized instrumentation, reference ranges, consumables, and usage • minimizes downtime with industry-leading engineering and service; 325-day mean time between repair visits (average) • speeds up turnaround time for high-volume stat assays	• fully automated random-access immunoanalyzer with unique Nobel Prize–winning TRACE technology • automated timely onboard dilution in less than 5 minutes with integrated self-determining dilution factor • no biotin interferences of the assays

Part 6 of 6	Tosoh Bioscience **Karen Wrona** karen.wrona@tosoh.com **South San Francisco, CA** **800-248-6764** www.diagnostics.us.tosohbioscience.com
FOR POINT-OF-CARE AND LOW-VOLUME LABORATORIES	
Name of instrument	AIA-360
Type of instrument	immunoassay
Operational type/Model type	continuous random access/benchtop
List price/First year sold in U.S.	—/2004
Targeted hospital bed size/Targeted test volume	—/monthly: < 500
Company manufactures instrument	yes
Other models in this family of analyzers	AIA-900, AIA-2000
No. of units in clinical use in U.S./Outside U.S. (countries)	~600/> 7,000 (worldwide)
Dimensions (H × W × D)/Instrument footprint	21 × 16 × 16 in./2.1 sq. ft.
Weight empty/Weight fully loaded	61 lbs./—
No. of different measured assays onboard simultaneously	25 (25 can be run and calibrated at one time)
No. of user-definable (open chemistry) channels	—
Test throughput per hour/Assay run time	36/10 min.
Chemistry:	
No. of direct ion-selective electrode channels	—
Detection methods	—
Stat time until completion/specimen throughput for:	
• Ion-selective electrode	—
• Basic metabolic panel	—
• Complete metabolic panel	—
Typical time delay from ordering stat test until aspiration of sample	—
Immunoassay:	
Fully automated microplate immunoassay system	—
Methodologies supported	fluorescence
Separation methodologies	—
Stat time until completion of a ß-hCG test	20 min.
• Typical time delay from test order to aspiration of sample	—
Stat time until completion of a cTn test	20 min.
• Typical time delay from test order to aspiration of sample	—
Approximate No. of tests per reagent set/Reagent type	100 (20 tests per tray)/unit dose test cup
Reagents refrigerated onboard/Reagents ready to use	no/yes
Reagent lot tracking/Reagent inventory	yes/no
Reagent form/Reagents barcoded	dry chemistry (closed reagent system)/yes
Separate reagent pack for each specimen/for each test run	yes/—
Walkaway capability/Walkaway duration	yes/58 min. or 25 specimens or 25 tests/assays
Design of sample-handling system	carousel
Uses washable cuvettes/Uses disposable cuvettes	no/no
Min.–max. sample volume that can be aspirated at one time	10–100 µL
Min. reaction volume/Min. specimen volume/Min. dead volume	10 µL/110 µL/100 µL
Dedicated pediatric sample cup	no
Primary tube sampling	yes
Accommodates most standard tube sizes/Accepts nonstandard tube sizes	yes/—
Pierces caps on primary tubes	no
Protects against probe collision	—
Detects clots/liquid level/short sample	yes/yes/yes
Detection or quantitation for hemolysis, icterus, lipemia, clots	—
Dilutes patient samples onboard/Susceptibility to carryover	no/none
Automatic rerun capability	no
Sample volume can be diluted to rerun out-of-linear-range high results	no
Sample volume can be concentrated to rerun out-of-linear-range low results	no
Analyzer requires dedicated water supply	no
Autocalibration/Multipoint calibration supported	no (calibrants are not stored onboard)/yes
Typical calibration frequency for ISE/therapeutic drugs/ drugs of abuse/general chemistries/immunoassays	—/—/—/—/90 days most assays
Automatic programmable start/Automatic programmable shutdown	no (5 min. start-up time)/no
Onboard real-time QC/Onboard software capability to review QC	no/no
Supports multiple QC lot numbers per analyte	—
Waste management	automated collection onboard instrument
Sample barcode-reading capability/Autodiscrimination	yes (Interleaved 2 of 5, Codabar, Code 39, Code 128)/yes
Lab can control analyzer from remote computer	no
Instrument can diagnose its own malfunctions	no
System malfunctions can be diagnosed via remote monitoring	—
UPS backup power supply	yes
Data-management capability/LIS or EHR systems interfaced	Tosoh 501RP+/—
LIS interface provided/Bidirectional interface capability	no/no
Modem servicing provided/Service engineer on-site response time	—
Mean time between failures	888 days (displays error codes for troubleshooting)
Average scheduled maintenance time by lab personnel	daily: 5 min.
Maintenance records kept onboard for user/vendor	no/no
Maintenance training demonstration module onboard	no
Training included with purchase/Avg. time for basic user training	yes/2 days (at customer site)
Advanced operator training/Extra charge for follow-up or advanced training	—
Warranty provided/Cost of annual service contract (24 h/7 d)	yes (1 year)/—
Distinguishing features (supplied by company)	• unit dose test cup; dry reagent, no premixing or reagent preparation • immunoassay method free from biotin interference; compact size, broad menu with fast results • 90-day calibration stability for most assays

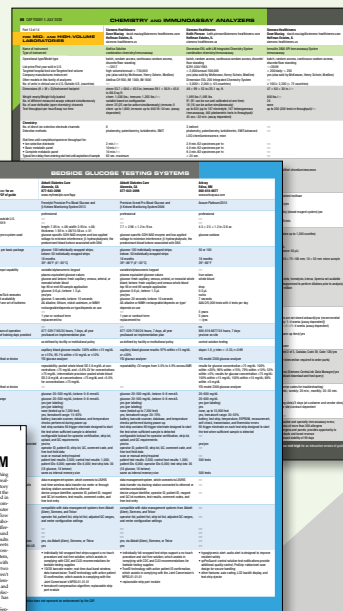*Note: a dash in lieu of an answer means company did not answer question or question is not applicable*