

Chemistry analyzers (for low-volume laboratories)

Part 1 of 11	Abaxis Inc. Rick Betts rickbetts@abaxis.com 3240 Whipple Rd., Union City, CA 94587 800-822-2947 www.abaxis.com	Abbott Point of Care Glen Tinevez glen.tinevez@abbott.com 104 Windsor Center Dr., East Windsor, NJ 08520 800-827-7828 www.abbottpointofcare.com
Name of instrument/First year sold in U.S. List price/No. of analyzers sold in 2007 No. units in clinical use in U.S./Outside U.S. Country where designed/Manufactured/Where reagents mftd. Operational type/Reagent type Sample handling system/Model type Dimensions in inches (H x W x D)/Instrument footprint	Piccolo Xpress/2006 18,000/— 2,500/4,000 U.S./U.S./U.S. self-contained disk with multi-test reagent panel disk loaded directly into instrument/benchttop 12.75 x 6 x 8/1 sq ft	i-Stat 1 analyzer/2000 —/— 30,000+ worldwide U.S./U.S./Canada —/self-contained single-use cartridges packages-slides na/handheld 9.25 x 3.0 x 2.85/< 1 sq ft
Tests available on instrument in U.S.	ALP, ALT, AST, GGT, amylase, albumin, total protein, bilirubin total, BUN, creatinine, calcium, cholesterol, glucose, uric acid, sodium, creatine kinase, potassium, TC02, chloride, cholesterol, HDL ratio, HDL, LDL, triglycerides-VLDL, phosphorus, direct bilirubin, magnesium, LD, C reactive protein	tropinin I, CK-MB, lactate, BUN, creatinine, glucose, ionized calcium, sodium, potassium, chloride, hematocrit, pH, PCO2, PO2, TCO2, ACTc, ACTk, PT/INR; hemoglobin, HCO3, BEecf, SO2, anion gap, BNP
Tests cleared but not clinically released Tests not available in U.S. but submitted for FDA 510(k) clearance Tests not available in U.S. but available in other countries Research-use-only assays/Tests in development User-defined methods implemented for what analytes	— — none —/— none	— — — —/— —
Methods supported/Immunoassay methods No. of direct ion selective electrode channels • Must load separate reagent pack for each specimen/No. of diff. assays in pack • Separate reagent pack for each test run No. of different measured assays onboard simultaneously No. of different assays programmed, calibrated at once No. of user-definable (open) channels/No. active simultaneously No. of different analytes for which system accommodates reagent containers onboard at once/Tests per container set Shortest/Median onboard reagent stability/Refrigerated onboard Multiple reagent configurations supported Reagent container placed directly on system for use Instrument has same capabilities when 3rd-party reagent used Reagent only cost per reportable result for standard chemistries/ Therapeutic drugs/Special analytes Walkaway capacity in minutes/No. of specimens/No. of tests-assays System is liquid, dry, or reconstituted onboard Uses disposable cuvettes/Max. No. stored Uses washable cuvettes/Replacement frequency Minimum sample volume aspirated precisely at one time Supplied with UPS (backup power)/Requires floor drain Requires dedicated water system/Water consumption in L per hour Noise generated in decibels Dedicated pediatric sample cup/Dead volume Primary tube sampling/Pierces caps on primary tubes Sample bar-code reading capability/Autodiscrimination Reagent bar-code reading capability Bar-code placement per CLSI standard Auto2A Onboard test auto inventory (determines volume in container) Measures No. of tests remaining/Short sample detection/ Clot detection Automatic detection of adequate reagent for aspir. & analysis Hemolysis/Turbidity detection-quantitation Dilution of patient samples onboard/Automatic rerun capability Sample volume can be reduced to rerun out-of-linear-range high results/Increased to rerun out-of-linear-range low results Autocalibration or autocalibration alert Calibrants stored onboard/Multipoint calibration supported Typical calib. frequency for ISE/Metabolites/Ther. drugs/Drugs of abuse Automatic shutdown/Startup programmable	enzymatic/— — no, self-contained discs with multi-test reagent panel/up to 14 tests per disc with 13 available discs no CLIA waived CMP has 14 analytes 14 0/— self-contained reagent discs have from 2 to 14 tests per disc —/—/— yes yes — \$0.57/—/— approximately 12/1/14 reconstitutes onboard no/— no/— requires 80 to 100 µL of whole blood, serum, or plasma no/no no/— none no no/— yes/— yes yes — —/yes/yes yes yes/yes yes/no —/— yes yes/yes self-calibrated onboard/disk/—/— yes/yes	potentiometry, amperometric, conductometric/— 10 yes/up to 13 yes — 18 —/— —/unit use —/14 days/no no — — based on volume/—/based on volume 2/1/up to 18 — no/— no/— 16 µL no/no no/— none no/— no/no yes, shortly before sample is aspirated, by handheld scanner as tubes are loaded, at the bedside (2 of 5 interleaved, Codabar, codes 39 & 128)/yes yes yes — —/yes/yes yes no/no no/no no/no yes no/yes each test/each test/—/— yes/yes
Stat time to completion of all analytes, throughput per hr. for: • Sodium, potassium, chloride, TC02 • Sodium, potassium, chloride, TC02, glucose, urea, creatinine • Album., direct & total bili., AST, ALT, ALP Typical time delay from ordering stat test to aspir. of sample How often QC required/Onboard SW capability to review QC Onboard real-time QC/Support multiple QC lot Nos. per analyte QC results transferred automatically to LIS	10–12 min, 2–14 tests 10–12 min, 2–14 tests 10–12 min, 2–14 tests — automatic QC onboard/yes yes/yes yes	2 min, — 2 min, — — none shortest interval: 24 hr; longest interval: each new lot or reagent/yes yes/yes yes
Data mgmt. capability/Instrument vendor supplies LIS interface Lab information systems with which interfaces up and running in active user sites Bidirectional interface capability Test results transmitted to LIS as soon as chem. time complete LIS interface operates simultaneously with running assays Uses LOINC to transmit orders & results How labs get LOINC codes for reagent kits	onboard/no hundreds of LIS and EMR systems yes yes yes no —	optional add-on (<\$30,000, SW mfr: Abbott Point of Care)/yes (add'l cost) all systems yes (broadcast download & host query) yes yes yes customized on site
Lab can control analyzer remotely Interface avail. (or will be) to automated specimen handling system	no —	yes —
Modem servicing available/Can diagnose own malfunctions/ Determine malfunctioning component On-site time of svc. engineer/Onboard error codes for troubleshooting Mean time between failures/To repair failures Average time to complete maintenance by lab personnel Onboard maintenance records/Maint. training demo module Training provided with purchase/Advanced oper. training avail. Annual service contract cost (24 h/7 d)	no/yes/yes 24-hr loaner/yes 3 years/— daily: none; weekly: none; monthly: none —/yes yes/yes 1-year warranty, extended warranty—\$1,200	yes/yes/yes replacement within 24 hr/yes not determined/replacement within 24 hr daily: none; weekly: none; monthly: none —/— —/yes \$750
Distinguishing features (supplied by company)	provides comprehensive CLIA-waived menu of tests; 13 available discs (9 CLIA waived) represent most commonly ordered chemistry panels; works with three simple steps, as easy to operate as a CD player; provides lab-accurate results on site, in minutes, using 100 µL sample of whole blood, serum, or plasma; intranet connectivity helps labs extend their reach to the point-of-care, while maintaining centralized control of test data	handheld portable analyzer; unit use system can perform chemistry, blood gas, cardiac marker, and coagulation tests on two drops of whole blood or plasma

Chemistry analyzers (for low-volume laboratories)

Part 2 of 11	Alfa Wassermann Diagnostic Technologies LLC Julie Famulare jfamulare@alfawassermannus.com 4 Henderson Dr., West Caldwell, NJ 07006 800-220-4488 www.alfawassermannus.com	Alfa Wassermann Diagnostic Technologies LLC Rick Peluso info@alfawassermannus.com 4 Henderson Dr., West Caldwell, NJ 07006 800-220-4488 www.alfawassermannus.com
Name of instrument/First year sold in U.S. List price/No. of analyzers sold in 2007 No. units in clinical use in U.S./Outside U.S. Country where designed/Manufactured/Where reagents mftd. Operational type/Reagent type	ACE/1993; ACE Alera Clinical Chemistry System/2004 \$69,995/— 1,200/700+ U.S./U.S./U.S. batch, random access, discrete, continuous random access/stat & closed reagent system with open reagent system channel ring with up to 5 segments (15 samples per segment)/benchtop ACE: 15.75 × 27.25 × 22.50; ACE Alera: 18 × 27.5 × 22.5/4.3 sq ft	Alfa S40/2008 \$32,500/200 0/400 Japan/Japan/Japan batch, random access, discrete, continuous random access/self-contained single-use cartridges-packages-slides single patient rack with multiple sample types/benchtop 17.6 × 21.1 × 23.4/3 sq ft
Tests available on instrument in U.S. Tests cleared but not clinically released Tests not available in U.S. but submitted for FDA 510(k) clearance Tests not available in U.S. but available in other countries Research-use-only assays/Tests in development User-defined methods implemented for what analytes	albumin, gamma GT, bilirubin direct & total, calcium, creatinine, glucose, inorganic phosphorus, total iron, magnesium, total protein, BUN, uric acid, amylase, AST (GOT), alkaline phosphatase, ALT (GPT), CK, LDH, cholesterol, HDL-C, LDL-C, triglycerides, sodium, potassium, chloride, CO ₂ , digoxin, T ₄ , T-uptake, HbA _{1c} , lipase, direct TIBC, ferritin, homocystein, Lp(a), microalbumin, apo A1, apo B, transferrin none none UIBC —/— open-channel bottles are available for user-derived or third-party reagents	ALP, ALB, ALT, amylase, AST, Tbili, BUN, Ca, chol, creat, GGT, GLU, HDL, IP, LDH, TRIG, TP, UA, CO ₂ — CK, CRP HbA _{1c} , LDL-C, DIG, THEO —/HbA _{1c} , LDL, digoxin, theophylline, magnesium —
Methods supported/Immunoassay methods No. of direct ion selective electrode channels • Must load separate reagent pack for each specimen/No. of diff. assays in pack • Separate reagent pack for each test run No. of different measured assays onboard simultaneously No. of different assays programmed, calibrated at once No. of user-definable (open) channels/No. active simultaneously No. of different analytes for which system accommodates reagent containers onboard at once/Tests per container set Shortest/Median onboard reagent stability/Refrigerated onboard Multiple reagent configurations supported Reagent container placed directly on system for use Instrument has same capabilities when 3rd-party reagent used Reagent only cost per reportable result for standard chemistries/ Therapeutic drugs/Special analytes Walkaway capacity in minutes/No. of specimens/No. of tests-assays System is liquid, dry, or reconstituted onboard Uses disposable cuvettes/Max. No. stored Uses washable cuvettes/Replacement frequency Minimum sample volume aspirated precisely at one time Supplied with UPS (backup power)/Requires floor drain Requires dedicated water system/Water consumption in L per hour Noise generated in decibels Dedicated pediatric sample cup/Dead volume Primary tube sampling/Pierces caps on primary tubes Sample bar-code reading capability/Autodiscrimination Reagent bar-code reading capability Bar-code placement per CLSI standard Auto2A Onboard test auto inventory (determines volume in container) Measures No. of tests remaining/Short sample detection/ Clot detection Automatic detection of adequate reagent for aspir. & analysis Hemolysis/Turbidity detection-quantitation Dilution of patient samples onboard/Automatic rerun capability Sample volume can be reduced to rerun out-of-linear-range high results/Increased to rerun out-of-linear-range low results Autocalibration or autocalibration alert Calibrants stored onboard/Multipoint calibration supported Typical calib. frequency for ISE/Metabolites/Ther. drugs/Drugs of abuse Automatic shutdown/Startup programmable	photometry, potentiometry (ion selective electrode), turbidimetric/homogeneous EIA 3 no/— no 40 200 15/15 40/30–250 tests per bottle 5 days/30 days/yes (10° to 14°C) yes yes yes \$0.16/\$3.50/\$3.50 75/75/248 liquid yes/248 no/— 3 µL yes/no no/— 55 no/— yes/yes yes, as sample is being aspirated (2 of 5 interleaved, UPC, Codabar, code 39, code 128 set B & C)/yes yes, proprietary dot coding no yes yes/yes/no yes —/— yes/yes yes/no yes no/yes 3 hr/30 days/45 days with 48 hr updates/— —/—	photometry 0 no/— yes 0 40 0/0 40/1 test per container set —/—/no no yes no \$0.95–\$3.50 (bundled instrument/reagent/maintenance cost per reportable result: \$1.05–\$3.60)/—/— 20/1/11 liquid yes/included in test cartridge no/— 3 µL no/no no/.4 25 yes/20 µL yes/no —/— yes no no —/yes/no yes no/no no/no —/— — —/yes —/reagent cartridges are factory calibrated/—/— no/no
Stat time to completion of all analytes, throughput per hr. for: • Sodium, potassium, chloride, TCO ₂ • Sodium, potassium, chloride, TCO ₂ , glucose, urea, creatinine • Albumin, direct & total bili., AST, ALT, ALP Typical time delay from ordering stat test to aspir. of sample How often QC required/Onboard SW capability to review QC Onboard real-time QC/Support multiple QC lot Nos. per analyte QC results transferred automatically to LIS	4 min, 35 specimens 7 min, 20 specimens 10 min, 12 specimens immediate response, as soon as 10 seconds daily/yes yes/yes yes	— — 15 min/4 specimens 30 seconds daily/no no/— yes
Data mgmt. capability/Instrument vendor supplies LIS interface Lab information systems with which interfaces up and running in active user sites Bidirectional interface capability Test results transmitted to LIS as soon as chem. time complete LIS interface operates simultaneously with running assays Uses LOINC to transmit orders & results How labs get LOINC codes for reagent kits	onboard/no Schuyler House, Antek, LabPak, Apex, others yes (broadcast download) yes, when requisition is done yes no —	optional add-on (various manufacturers)/no — no yes yes no —
Lab can control analyzer remotely Interface avail. (or will be) to automated specimen handling system	no no	no no
Modem servicing available/Can diagnose own malfunctions/ Determine malfunctioning component On-site time of svc. engineer/Onboard error codes for troubleshooting Mean time between failures/To repair failures Average time to complete maintenance by lab personnel Onboard maintenance records/Maint. training demo module Training provided with purchase/Advanced oper. training avail. Annual service contract cost (24 hr/7 d)	no/yes/yes 24 hr/yes 2 per yr/1 hr daily: 15 min; weekly: 30 min; monthly: 60 min yes/no 4.5 days at manufacturer's facility/yes varies, several programs available	no/no/no will use depot repair/yes less than one per year/<24 hrs daily: <5 min; weekly: <10 min; monthly: <10 min no/no 1 day on site/yes \$1,800 year
Distinguishing features (supplied by company)	easy-to-use, multitasking software; closed-tube sampling; stat interrupt capability; extensive test menu; onboard sample and reagent refrigeration; onboard reagent inventory management; liquid, ready-to-use reagents; integrated ISE module; dedicated field service organization; self-contained analyzer; no external water source or waste drainage	self-contained reagent cartridge/optical cuvette system with all test parameters encoded on 2D bar code; virtually unlimited test menu; true operator walk-away time

Chemistry analyzers (for low-volume laboratories)

Part 3 of 11	Beckman Coulter Inc. 200 South Kraemer Blvd., P.O. Box 8000 Brea, CA 92822-8000 800-526-3821 www.beckmancoulter.com	The Binding Site Maureen Zetlmeisl info@thebindingsite.com 5889 Oberlin Drive, Suite 101, San Diego, CA 92121 800-633-4484 www.thebindingsite.com
Name of instrument/First year sold in U.S. List price/No. of analyzers sold in 2007 No. units in clinical use in U.S./Outside U.S. Country where designed/Manufactured/Where reagents mftd. Operational type/Reagent type	Synchron CX5 Pro/2001 \$193,500/— —/— U.S./U.S./U.S. & Ireland continuous random access/open reagent system	SPA ^{PLUS} (Serum Protein Analyzer)/2007 \$57,000/— —/— Japan/Japan/United Kingdom batch, random access, discrete/self-contained single-use cartridges-packages-slides 2 sample carousels that can each hold 45 samples: 30 primary tubes, 10 non-bar-coded sample tubes/cups and 5 stat samples/benchtop 20.5 × 31.5 × 25.2/14 sq ft
Sample handling system/Model type	sectors, centrifugable/floor-standing	
Dimensions in inches (H × W × D)/Instrument footprint	69 × 61 × 30/12.7 sq ft	20.5 × 31.5 × 25.2/14 sq ft
Tests available on instrument in U.S.	alb, ALP, ALT, amylase, AST, BUN, calc., CO ₂ , chloride, cholest., CK-MB, creatinine, dir. bilirubin, GGT, glucose, HDL, iron/TIBC, lipase, LD, LDL, Mg, phosphorus, potassium, sodium, total protein, total bilirubin, triglyceride, triglyceride glycerol blanked, urea, uric acid; esoteric chemistries: ammonia, cholinesterase, hemoglobin A1c, lactate, microalbumin, prealbumin, salicylate; drugs of abuse testing; therapeutic drug monitoring; proteins: anti-streptolysin O, IgA, IgM, IgG, rheumatoid factor, transferrin; thyroids: thyroxine, T-up, P-amylase, C-reactive protein, creatine kinase	serum-free kappa, serum-free lambda, cystatin C, IgG, IgG1, IgG2, IgG3, IgG4
Tests cleared but not clinically released Tests not available in U.S. but submitted for FDA 510(k) clearance Tests not available in U.S. but available in other countries Research-use-only assays/Tests in development	— — — —/—	— IgA, IgM, Beta-2-Microglobulin — tetanus toxoid/IgD, B2M, IgA subclasses, IgA high sensitivity, hevylite IgG, hevylite IgA, hevylite IgM, hevylite IgD
User-defined methods implemented for what analytes	UIBC, cyclosporine, homocysteine, lithium, ecstasy, barbiturate serum tox, benzodiazepine serum tox, tricyclics serum tox, amikacin, quinidine	—
Methods supported/Immunoassay methods	photometry, potentiometry, turbidimetric/bidentate turbidimetric, direct turbidimetric, particle enhanced turbidimetric, enzyme immunoassay	turbidimetry/—
No. of direct ion selective electrode channels • Must load separate reagent pack for each specimen/No. of diff. assays in pack	5 (indirect) no/—	— —/—
• Separate reagent pack for each test run	no	no
No. of different measured assays onboard simultaneously	29	24
No. of different assays programmed, calibrated at once	50	—
No. of user-definable (open) channels/No. active simultaneously	100/29	—/77
No. of different analytes for which system accommodates reagent containers onboard at once/Tests per container set	29/2,900–69,600 (100–2,400 tests per container)	24/100
Shortest/Median onboard reagent stability/Refrigerated onboard	168 hr/30 days/yes (2° to 8°C)	30 days/assay dependent/yes (9° to 12°C)
Multiple reagent configurations supported	yes	yes
Reagent container placed directly on system for use	yes	yes
Instrument has same capabilities when 3rd-party reagent used	yes	no
Reagent only cost per reportable result for standard chemistries/Therapeutic drugs/Special analytes	assay dependent/—/—	—/—/—
Walkaway capacity in minutes/No. of specimens/No. of tests-assays	400/63/1,827	~60/45/2–3
System is liquid, dry, or reconstituted onboard	liquid	liquid
Uses disposable cuvettes/Max. No. stored	no/—	no/60
Uses washable cuvettes/Replacement frequency	yes/permanent–2-yr warranty (80 stored on instrument)	yes/once cuvettes reach OD threshold (0.33)
Minimum sample volume aspirated precisely at one time	3 µL	3 µL
Supplied with UPS (backup power)/Requires floor drain	yes/no	yes/no
Requires dedicated water system/Water consumption in L per hour	yes/7	no/3.5
Noise generated in decibels	70	—
Dedicated pediatric sample cup/Dead volume	yes/40 µL	no/—
Primary tube sampling/Pierces caps on primary tubes	yes/no	yes/no
Sample bar-code reading capability/Autodiscrimination	yes (2 of 5 interleaved, Codabar, codes 39 & 128)/yes	yes, on sample transport, shortly before sample is aspirated (codes 39 & 128)/—
Reagent bar-code reading capability	yes	yes
Bar-code placement per CLSI standard Auto2A	yes	yes
Onboard test auto inventory (determines volume in container)	yes	no
Measures No. of tests remaining/Short sample detection/Clot detection	yes/yes/yes	yes/yes/no
Automatic detection of adequate reagent for aspir. & analysis	yes	yes
Hemolysis/Turbidity detection-quantitation	yes/yes	no/no
Dilution of patient samples onboard/Automatic rerun capability	yes/no	yes/yes
Sample volume can be reduced to rerun out-of-linear-range high results/Increased to rerun out-of-linear-range low results	yes/no	yes/yes
Autocalibration or autocalibration alert	yes	yes
Calibrants stored onboard/Multipoint calibration supported	no/yes	no/yes
Typical calib. frequency for ISE/Metabolites/Ther. drugs/Drugs of abuse	24 hr/up to 90 days/60 days/14 days	—/—/—/—
Automatic shutdown/Startup programmable	none required/—	no/no
Stat time to completion of all analytes, throughput per hr. for: • Sodium, potassium, chloride, TCO ₂	52 sec, 75 specimens	—
• Sodium, potassium, chloride, TCO ₂ , glucose, urea, creatinine	8 min, 75 specimens	—
• Album., direct & total bili., AST, ALT, ALP	10 min, 32 specimens	—
Typical time delay from ordering stat test to aspir. of sample	45 sec	—
How often QC required/Onboard SW capability to review QC	24 hr/yes	—/yes
Onboard real-time QC/Support multiple QC lot Nos. per analyte	yes/yes	user defined/yes
QC results transferred automatically to LIS	yes	yes
Data mgmt. capability/Instrument vendor supplies LIS interface	onboard & optional add-on (SW mfr: Beckman Coulter DL2000)/yes (add'l cost)	no (optional add-on in Europe)/yes (additional)
Interfaces up and running in active user sites with Bidirectional interface capability	Cerner, Misys, Meditech, Citation, MedLab, CHC, Siemens, McKesson, others yes (broadcast download & host query)	CyberLab yes
Test results transmitted to LIS as soon as chem. time complete	yes	yes
LIS interface operates simultaneously with running assays	yes	yes
Uses LOINC to transmit orders & results	no	no
How labs get LOINC codes for reagent kits	—	—
Lab can control analyzer remotely	no	no
Interface avail. (or will be) to automated specimen handling system	yes	yes
Modem servicing available/Can diagnose own malfunctions/ Determine malfunctioning component	yes/yes/no	no/no/no
On-site time of svc. engineer/Onboard error codes for troubleshooting	metro: same day; rural: same or next day/yes	24 hrs/yes
Mean time between failures/To repair failures	—/—	—/24 hrs
Average time to complete maintenance by lab personnel	daily: 5 min; weekly: 15 min; monthly: 20 min	daily: 9 min; weekly: 20 min
Onboard maintenance records/Maint. training demo module	no/no	no/no
Training provided with purchase/Advanced oper. training avail.	1 day on site, 5 days at vendor offices/no	5 days, including installation and training
Annual service contract cost (24 h/7 d)	—	\$8,950
Distinguishing features (supplied by company)	serum indices; centrifugable sectors; clot detection; bar-coded calibrators and controls; host query; reagent load while running; ready-to-use liquid reagents; Peltier thermal ring; ISE system; pulsed xenon light source; polychromatic correction; semipermanent glass cuvettes	low maintenance, prozone detection, autodilution, the combination of air-mixing system, dual-compartment reaction cuvettes, and a hot water wash make it ideal for Binding Site latex assays

Chemistry analyzers (for low-volume laboratories)

Part 4 of 11	Carolina Liquid Chemistries Patricia A. Shugart contactsales@carolinachemistries.com 391 Technology Way, Suite 2, Winston Salem, NC 27101 877-722-8910 www.carolinachemistries.com	Horiba ABX Chuck Rebisz Chuck.Rebisz@horiba.com 34 Bunsen Dr., Irvine, CA 92618 888-903-5001 www.horiba-abx.com/us
Name of instrument/First year sold in U.S. List price/No. of analyzers sold in 2007 No. units in clinical use in U.S./Outside U.S. Country where designed/Manufactured/Where reagents mftd. Operational type/Reagent type	BioLis 24i/2008 \$45,000/0 10/3,000 Japan/Japan/USA batch, random access, continuous random access/open reagent system	ABX Pentra 400/2006 \$89,000/80 153/585 France/France/France & U.S. batch, random access, discrete, continuous random access/self-contained single-use cartridges-packages-slides, open reagent system rack/benchtop 25 × 40 × 28 in/7.7 sq ft
Sample handling system/Model type Dimensions in inches (H × W × D)/Instrument footprint	sample ring/benchtop 20 × 31 × 25/5 sq ft	— —
Tests available on instrument in U.S.	100	albumin, calcium, sodium, alk phos, ALT, carbon dioxide, glucose (PAP), lipase, total protein, chloride, glucose (hexokinase), magnesium, triglycerides, amylase, cholesterol, nitrogen, iron, myoglobin, uric acid, total bilirubin, creatinine, lactic acid, phosphorus, direct bilirubin, potassium, HDL, CK, CRP, GGT, LDH, LDL, urea nitrogen, micro Alb, urinary protein
Tests cleared but not clinically released Tests not available in U.S. but submitted for FDA 510(k) clearance Tests not available in U.S. but available in other countries	Lp-PLA2 vitamin D —	— — Alpha 1 antitrypsin, C3, C4, ceruloplasmin, orosomucoid, heparin, kappa chains, lambda chains
Research-use-only assays/Tests in development User-defined methods implemented for what analytes	—/vitamin D —	—/TDMs, DAUs alcohol, apolipoprotein A1, apolipoprotein B, beta 2, microglobulin, ferritin, fructosamine, glyco mark, haptoglobin, Hgb A1c, homocysteine, HS CRP, IgA, IgG, IgM, pre albumin, rheumatoid factor, TIBC, transferrin, UIBC
Methods supported/Immunoassay methods No. of direct ion selective electrode channels • Must load separate reagent pack for each specimen/No. of diff. assays in pack • Separate reagent pack for each test run No. of different measured assays onboard simultaneously No. of different assays programmed, calibrated at once No. of user-definable (open) channels/No. active simultaneously No. of different analytes for which system accommodates reagent containers onboard at once/Tests per container set Shortest/Median onboard reagent stability/Refrigerated onboard Multiple reagent configurations supported Reagent container placed directly on system for use Instrument has same capabilities when 3rd-party reagent used Reagent only cost per reportable result for standard chemistries/Therapeutic drugs/Special analytes Walkaway capacity in minutes/No. of specimens/No. of tests-assays System is liquid, dry, or reconstituted onboard Uses disposable cuvettes/Max. No. stored Uses washable cuvettes/Replacement frequency Minimum sample volume aspirated precisely at one time Supplied with UPS (backup power)/Requires floor drain Requires dedicated water system/Water consumption in L per hour Noise generated in decibels Dedicated pediatric sample cup/Dead volume Primary tube sampling/Pierces caps on primary tubes Sample bar-code reading capability/Autodiscrimination Reagent bar-code reading capability Bar-code placement per CLSI standard Auto2A Onboard test auto inventory (determines volume in container) Measures No. of tests remaining/Short sample detection/Clot detection Automatic detection of adequate reagent for aspir. & analysis Hemolysis/Turbidity detection-quantitation Dilution of patient samples onboard/Automatic rerun capability Sample volume can be reduced to rerun out-of-linear-range high results/Increased to rerun out-of-linear-range low results Autocalibration or autocalibration alert Calibrants stored onboard/Multipoint calibration supported Typical calib. frequency for ISE/Metabolites/Ther. drugs/Drugs of abuse Automatic shutdown/Startup programmable	photometry, potentiometry/— 3 no/— no 39 39 39/39 39/3 × 300 7 days/14 days/yes (2° to 8°C) yes yes yes —/—/— 4 hrs/40/39 liquid no/— yes/— — yes/no yes, water system provided with instrument/— — yes/30 µL yes/no yes (on sample transport, shortly before sample is aspirated, codes 39 & 128)/ yes yes yes yes/yes/yes yes yes/yes yes/yes yes/yes no yes/yes 24 hrs/14 days/14 days/14 days yes/yes	photometry, potentiometry (ion selective electrode), turbidimetric/— 3 no/— no 55 55 15/15 55/100 to 400 8 hours/30 days/yes (15° to 32°C) yes yes yes —/—/— 2 hrs/60/— liquid yes/432 no/— 2 µL no/no no/avg. 0.5 — — no/— yes/no yes/no yes yes yes yes/yes/yes yes yes/yes yes/yes yes/yes yes yes/yes 2 hrs/14 days/—/— no/yes
Stat time to completion of all analytes, throughput per hr. for: • Sodium, potassium, chloride, TCO2 • Sodium, potassium, chloride, TCO2, glucose, urea, creatinine • Album., direct & total bili., AST, ALT, ALP Typical time delay from ordering stat test to aspir. of sample How often QC required/Onboard SW capability to review QC Onboard real-time QC/Support multiple QC lot Nos. per analyte QC results transferred automatically to LIS	12 min, 160 specimens 1 hr, 60 specimens 14 min, 240 specimens 5 min 8–24 hrs/yes yes/yes yes	<5 min, — 7.5 min, 35 specimens <11 min, 23 specimens 1–2 min 8 hr/yes yes/yes yes
Data mgmt. capability/Instrument vendor supplies LIS interface Lab information systems with which interfaces up and running in active user sites Bidirectional interface capability Test results transmitted to LIS as soon as chem. time complete LIS interface operates simultaneously with running assays Uses LOINC to transmit orders & results How labs get LOINC codes for reagent kits	onboard/yes (additional cost) Fletcher Flora, Lab Track, and several other common systems yes (broadcast download, host query) yes yes — —	onboard/no Antek, Fletcher Flora, Mediatech, Orchard, Schuyler House, Sunquest, Technidata yes yes yes no —
Lab can control analyzer remotely Interface avail. (or will be) to automated specimen handling system	no no	no no
Modem servicing available/Can diagnose own malfunctions/ Determine malfunctioning component On-site time of svc. engineer/Onboard error codes for troubleshooting Mean time between failures/To repair failures Average time to complete maintenance by lab personnel Onboard maintenance records/Maint. training demo module Training provided with purchase/Advanced oper. training avail. Annual service contract cost (24 h/7 d)	no/yes/yes 24 hrs/yes —/— daily: visual; weekly: 20 min; monthly: visual inspections <5 min yes (includes audit trail)/no 5 days on site/yes —	yes/yes/yes <24 hrs/yes —/— daily: 5 min; weekly: 5 min; monthly: 15 min yes/yes 4 days at corporate office in California/yes —
Distinguishing features (supplied by company)	Use of a water system eliminates the need to purchase, ship, and store cubes of water; HbA1c can be performed directly onboard with results equivalent to HPLC, no need to purchase a separate HbA1c analyzer; small size and large menu, 39 onboard chemistries; can run general chemistries and special chemistries from CMPs to D-dimer, cystatin C, insulin, and more	benchtop design offers the flexibility to run more than 53 assays with room for 55 onboard tests operated by a user-friendly, color-coded touchscreen validation station; high throughput up to 420 tests/hr; clot level and crash protection; auto rerun, autocalibration, and autodilution; ability to run up to three reagents on a single assay; most reagents in plug-and-play cassettes

Chemistry analyzers (for low-volume laboratories)

Part 5 of 11	Medica Corporation Charlene Soley csoley@medicacorp.com 5 Oak Park Drive, Bedford, MA 01730 781-275-7425 www.medicacorp.com	Nova Biomedical Corp. info@novabiomedical.com 200 Prospect St., Waltham, MA 02454-9141 800-458-5813 www.novabiomedical.com
Name of instrument/First year sold in U.S. List price/No. of analyzers sold in 2007 No. units in clinical use in U.S./Outside U.S. Country where designed/Manufactured/Where reagents mftd. Operational type/Reagent type	Easy RA/— —/— —/— U.S./U.S./U.S. batch, random access, discrete, continuous random access/self-contained multi-use cartridge-packages-slides	Stat Profile Critical Care Xpress/2002 \$25,000-\$59,000/— —/— U.S./U.S./U.S. discrete/self-contained multi-use cartridges
Sample handling system/Model type Dimensions in inches (H x W x D)/Instrument footprint	—/benchtop 15 x 40 x 26/7.2 sq ft	sample automatically drawn from syringe, capillary, or open tube/benchtop 17.2 x 17.3 x 22.3/2.7 sq ft
Tests available on instrument in U.S.	albumin, alk phos, alanine aminotransferase (ALT, SGPT), aspartate aminotransferase (AST, SGOT), calcium, chloride, cholesterol, CK, creatinine (serum & urine), GGT, glucose-trinder, HDL cholesterol, LDH, lithium, potassium, sodium, total protein	pH, PCO2, PO2, SO2%, hematocrit, hemoglobin, sodium, potassium, chloride, ionized calcium, ionized Mg, glucose, BUN, creatinine, lactate, bilirubin, deoxyhemoglobin, oxyhemoglobin, methemoglobin, carboxyhemoglobin
Tests cleared but not clinically released	none	none
Tests not available in U.S. but submitted for FDA 510(k) clearance	blood urea nitrogen, GLU-H, direct bilirubin, total bilirubin, triglycerides, uric acid, phosphorus, magnesium, CO2, CK, amylase, iron	none
Tests not available in U.S. but available in other countries	none	none
Research-use-only assays/Tests in development	—	none
User-defined methods implemented for what analytes	—	none
Methods supported/Immunoassay methods No. of direct ion selective electrode channels • Must load separate reagent pack for each specimen/No. of diff. assays in pack • Separate reagent pack for each test run No. of different measured assays onboard simultaneously No. of different assays programmed, calibrated at once No. of user-definable (open) channels/No. active simultaneously No. of different analytes for which system accommodates reagent containers onboard at once/Tests per container set Shortest/Median onboard reagent stability/Refrigerated onboard Multiple reagent configurations supported Reagent container placed directly on system for use Instrument has same capabilities when 3rd-party reagent used Reagent only cost per reportable result for standard chemistries/Therapeutic drugs/Special analytes Walkaway capacity in minutes/No. of specimens/No. of tests-assays System is liquid, dry, or reconstituted onboard Uses disposable cuvettes/Max. No. stored Uses washable cuvettes/Replacement frequency Minimum sample volume aspirated precisely at one time Supplied with UPS (backup power)/Requires floor drain Requires dedicated water system/Water consumption in L per hour Noise generated in decibels Dedicated pediatric sample cup/Dead volume Primary tube sampling/Pierces caps on primary tubes Sample bar-code reading capability/Autodiscrimination Reagent bar-code reading capability Bar-code placement per CLSI standard Auto2A Onboard test auto inventory (determines volume in container) Measures No. of tests remaining/Short sample detection/Clot detection Automatic detection of adequate reagent for aspir. & analysis Hemolysis/Turbidity detection-quantitation Dilution of patient samples onboard/Automatic rerun capability Sample volume can be reduced to rerun out-of-linear-range high results/Increased to rerun out-of-linear-range low results Autocalibration or autocalibration alert Calibrants stored onboard/Multipoint calibration supported Typical calib. frequency for ISE/Metabolites/Ther. drugs/Drugs of abuse Automatic shutdown/Startup programmable	photometry, potentiometry 4 no/— no 28 28 0/— 28/80 to 250 168 hrs/30 days/yes yes yes — \$0.16/—/— 36/24/28 liquid yes/72 no/— 2 µL no/no no/— minimal no/— yes/no yes —; RFID — yes yes/yes/no yes no/no yes/yes yes/no yes no/yes 8 hrs/30 days/—/— no/no	potentiometry (ISE), optical, reflectance/— 12 no/— no 20 20 0/— 20/200-500 samples (2,600-6,500 tests), depending on lab 45 days/45 days/no — requires operator prehandling, preparation — \$.06-\$.28 per test (cost varies with volume); bundled instr. reagent maint. cost per result \$.07-\$.31 per test (5-yr reagent rental)/—/— —/—/— ISE no/— no/— 60 µL no (optional)/no no/— minimal no/— yes/no yes (optional), by handheld scanner as tubes are loaded onto instrument (2 of 5 interleaved, UPC, Codabar, codes 39 & 128)/yes yes no yes yes/yes/yes yes yes (on co-oximeter module)/yes (on co-oximeter module) yes (on co-oximeter module)/no no/no yes yes/yes 30-120 min/30-120 min/—/— yes/yes
Stat time to completion of all analytes, throughput per hr. for: • Sodium, potassium, chloride, TCO2 • Sodium, potassium, chloride, TCO2, glucose, urea, creatinine • Albumin, direct & total bili., AST, ALT, ALP Typical time delay from ordering stat test to aspir. of sample How often QC required/Onboard SW capability to review QC Onboard real-time QC/Support multiple QC lot Nos. per analyte QC results transferred automatically to LIS	3 min, 200 specimens 8 min, 100 specimens 9 min, — <1 min CLIA minimum/yes no/yes yes	50 sec, 26-36, depending on use mode 123 sec, 21-24, depending on use mode —, — <2 sec 8 hr/yes yes/yes yes
Data mgmt. capability/Instrument vendor supplies LIS interface Lab information systems with which interfaces up and running in active user sites Bidirectional interface capability Test results transmitted to LIS as soon as chem. time complete LIS interface operates simultaneously with running assays Uses LOINC to transmit orders & results How labs get LOINC codes for reagent kits	onboard/yes — yes yes yes no —	onboard/no — yes yes yes no —
Lab can control analyzer remotely Interface avail. (or will be) to automated specimen handling system	no no	yes no
Modem servicing available/Can diagnose own malfunctions/ Determine malfunctioning component On-site time of svc. engineer/Onboard error codes for troubleshooting Mean time between failures/To repair failures Average time to complete maintenance by lab personnel Onboard maintenance records/Maint. training demo module Training provided with purchase/Advanced oper. training avail. Annual service contract cost (24 h/7 d)	no/yes/yes —/yes 1 year/— daily: 20 min; weekly: —; monthly: 30 min no/no —/— —	yes/yes/yes <8 business hr/yes —/— daily: none; weekly: <5 min; monthly: <15 min yes (includes audit trail of who replaced parts)/yes 1 day on site/yes \$3,750-\$7,685
Distinguishing features (supplied by company)	simplified user interface accessed through a touchscreen display; RFID-tagged reagents allow for reading and writing capability; all reagent parameters programmed on the wedge, no data entry; easy-to-replace components all located in a slide-out drawer; comprehensive inventories of all system components	comprehensive 20-test critical care profile, including ionized Mg, BUN, and creatinine; color touchscreen; integrated co-oximeter; open software architecture; onboard data management; automated onboard quality control; sealed waste system; auto-monitoring of QC and reagent packs; tankless gas calibration; automated maintenance

Chemistry analyzers (for low-volume laboratories)

Part 6 of 11	Nova Biomedical Corp. info@novabiomedical.com 200 Prospect St., Waltham, MA 02454-9141 800-458-5813 www.novabiomedical.com	Nova Biomedical Corp. info@novabiomedical.com 200 Prospect St., Waltham, MA 02454-9141 800-458-5813 www.novabiomedical.com
Name of instrument/First year sold in U.S. List price/No. of analyzers sold in 2007 No. units in clinical use in U.S./Outside U.S. Country where designed/Manufactured/Where reagents mftd. Operational type/Reagent type	Stat Profile pH0x series/1998 \$12,000-\$32,000/— —/— U.S./U.S./U.S. discrete/self-contained multi-use cartridges-packages-slides	Nova 16/1995 \$22,500-\$25,500/— —/— U.S./U.S./U.S. batch, random access/self-contained multiuse cartridges
Sample handling system/Model type Dimensions in inches (H x W x D)/Instrument footprint	sample automatically drawn from syringe, capillary, or open tube/benchtop 15 x 15 x 18/1.9 sq ft	40-position tray, stat sampling directly from sample container/benchtop 20.5 x 19.2 x 20.7/2.75 sq ft
Tests available on instrument in U.S.	pH, PCO ₂ , PO ₂ , SO ₂ %, hematocrit, hemoglobin, sodium, potassium, chloride, ionized calcium, glucose, lactate	sodium, potassium, chloride, total CO ₂ , glucose, BUN, creatinine, Hct
Tests cleared but not clinically released	none	none
Tests not available in U.S. but submitted for FDA 510(k) clearance	none	none
Tests not available in U.S. but available in other countries	none	none
Research-use-only assays/Tests in development	none	none/none
User-defined methods implemented for what analytes	none	none
Methods supported/Immunoassay methods No. of direct ion selective electrode channels • Must load separate reagent pack for each specimen/No. of diff. assays in pack • Separate reagent pack for each test run No. of different measured assays onboard simultaneously No. of different assays programmed, calibrated at once No. of user-definable (open) channels/No. active simultaneously No. of different analytes for which system accommodates reagent containers onboard at once/Tests per container set Shortest/Median onboard reagent stability/Refrigerated onboard Multiple reagent configurations supported Reagent container placed directly on system for use Instrument has same capabilities when 3rd-party reagent used Reagent only cost per reportable result for standard chemistries/ Therapeutic drugs/Special analytes Walkaway capacity in minutes/No. of specimens/No. of tests-assays System is liquid, dry, or reconstituted onboard Uses disposable cuvettes/Max. No. stored Uses washable cuvettes/Replacement frequency Minimum sample volume aspirated precisely at one time Supplied with UPS (backup power)/Requires floor drain Requires dedicated water system/Water consumption in L per hour Noise generated in decibels Dedicated pediatric sample cup/Dead volume Primary tube sampling/Pierces caps on primary tubes Sample bar-code reading capability/Autodiscrimination	potentiometry (ISE), optical, reflectance/— 5 no/— no 11 11 0/— 11/varies by analyzer and laboratory use pattern 45 days/45 days/no — requires operator prehandling, preparation — varies by model/—/— —/—/— ISE no/— no/— 45 µL no (optional)/no no/— minimal no/— yes/no yes, by handheld scanner as tubes are loaded onto instrument (2 of 5 interleaved, UPC, Codabar, codes 39 & 128)/yes	potentiometry/— 8 no/— no 8 8 0/— 8/(@ 8,000 tests/mo): 2,700 tests 21 days/21 days/no — no, requires prehandling (remove clip from sealed bag & mix) — standard chemistries: @25 sam/d: \$0.40 (8-test panel); bundled instr., reagent, maint. cost per result: \$0.92 (8-test panel)/—/— 60 per tray/40 per tray/280 per tray — no/— —/— 50 µL no/no no/— minimal — yes/no yes, by handheld scanner as tubes are loaded onto instrument (2 of 5 interleaved, UPC, Codabar, codes 39 & 128)/yes alternate method
Reagent bar-code reading capability Bar-code placement per CLSI standard Auto2A Onboard test auto inventory (determines volume in container) Measures No. of tests remaining/Short sample detection/Clot detection Automatic detection of adequate reagent for aspir. & analysis Hemolysis/Turbidity detection-quantitation Dilution of patient samples onboard/Automatic rerun capability Sample volume can be reduced to rerun out-of-linear-range high results/Increased to rerun out-of-linear-range low results Autocalibration or autocalibration alert Calibrants stored onboard/Multipoint calibration supported Typical calib. frequency for ISE/Metabolites/Ther. drugs/Drugs of abuse Automatic shutdown/Startup programmable	yes no yes yes/yes/yes yes yes*/yes* yes*/no no/no yes yes/yes 30-120 min/30-120 min/—/— yes/yes	— — yes no/yes/yes yes no/no yes/yes no/no yes yes/— 2 hr/2 hr/—/— —/—
Stat time to completion of all analytes, throughput per hr. for: • Sodium, potassium, chloride, TCO ₂ • Sodium, potassium, chloride, TCO ₂ , glucose, urea, creatinine • Albumin, direct & total bill., AST, ALT, ALP Typical time delay from ordering stat test to aspir. of sample How often QC required/Onboard SW capability to review QC Onboard real-time QC/Support multiple QC lot Nos. per analyte QC results transferred automatically to LIS	50 sec, 44 —, — —, — <2 sec 8 hr (CLIA)/yes yes/yes yes	52 sec, 69 specimens 85 sec, 45 specimens —, — 9 sec CLIA minimum/yes no/yes yes
Data mgmt. capability/Instrument vendor supplies LIS interface Lab information systems with which interfaces up and running in active user sites Bidirectional interface capability Test results transmitted to LIS as soon as chem. time complete LIS interface operates simultaneously with running assays Uses LOINC to transmit orders & results How labs get LOINC codes for reagent kits	no/no virtually all yes (broadcast download & host query) yes yes no —	onboard & optional add-on (\$9,225, SW mfr: Nova)/no most LIS vendors including Cerner, Misys, McKesson, Soft, others yes yes no no —
Lab can control analyzer remotely Interface avail. (or will be) to automated specimen handling system	yes no	yes no
Modem servicing available/Can diagnose own malfunctions/ Determine malfunctioning component On-site time of svc. engineer/Onboard error codes for troubleshooting Mean time between failures/To repair failures Average time to complete maintenance by lab personnel Onboard maintenance records/Maint. training demo module Training provided with purchase/Advanced oper. training avail. Annual service contract cost (24 h/7 d)	yes/yes/yes —/— <8 business hr/yes —/— daily: none; weekly: <5 min; monthly: <15 min yes/yes 1 day on site/yes varies by analyzer configuration & geographic location; discounts for multiple-year contract or 5-year reagent rental or lease	no/yes/yes —/— <8 business hr/yes —/— daily: <2 min; weekly: <5 min; monthly: <5 min no/no 2 days on site/yes call for pricing
Distinguishing features (supplied by company)	onboard quality control; liquid calibration eliminates gas tanks; remote control; remote review; space-saving design	whole blood analyzer for creatinine & TCO ₂ ; can analyze whole blood, serum, plasma, urine, CSF, and dialysate

*on co-oximeter module

Chemistry analyzers (for low-volume laboratories)

Part 7 of 11	Ortho-Clinical Diagnostics Sales Support 1001 U.S. Highway 202, Raritan, NJ 08869 800-828-6316 www.orthoclinical.com	Polymedco, Inc. Marie Longo mlongo@polymedco.com 510 Furnace Dock Road, Cortlandt Manor, NY 10567 800-431-2123 www.polymedco.com
Name of instrument/First year sold in U.S. List price/No. of analyzers sold in 2007 No. units in clinical use in U.S./Outside U.S. Country where designed/Manufactured/Where reagents mftd. Operational type/Reagent type	Vitros DT 60 II Chemistry System (DT 60 II, DTE, DTSC)/1993 —/— 15,000 units worldwide U.S./U.S./U.S. batch, random access, discrete/self-contained single-use cartridges-packag- es-slides	Poly-Chem/2002 \$58,500/24 150/— Japan/Japan/U.S. batch, random access/open reagent system
Sample handling system/Model type Dimensions in inches (H × W × D)/Instrument footprint	—/benchtop 6.75 × 18.75 × 13.75/1.8 sq ft (DT 60 II)	rack/benchtop 30 × 24 × 22/—
Tests available on instrument in U.S.	ammonia, cholesterol, HDL chol., neonatal bilirubin, total protein, amylase, creatinine, lactate, phosphorus, triglycerides, BUN-urea, glucose, Mg, total bilirubin, uric acid, albumin, AST, CK, GGT, lipase, ALP, calcium, iron, lithium, ALT, cholinesterase, LDH, theophylline, CO2, sodium, potassium, chloride, urine creatinine, CK-MB	APOa1, APOb, Lp(a), HDL, LDL, NEFA, NA, K, CL, C3, C4, PREALB, IGA, IGM, IGG, RF, CRP, ASO, FRCRP, MALB, FRUC, HGA1C, ALB, AMY, ALP, ALT, AST, TBIL, DBIL, BUN, CAL, CHOL, CK, CO2, CREAT, GGT, GLUC, IRON, LDH, LIP, MG, PHOS, TP, TRIG, UA, FERR, TRANS, DTIBC
Tests cleared but not clinically released	none	—
Tests not available in U.S. but submitted for FDA 510(k) clearance	none	—
Tests not available in U.S. but available in other countries	none	—
Research-use-only assays/Tests in development	none/none	APOA11, APOE, APOC11, APOC111/—
User-defined methods implemented for what analytes	none	glutamine, glutamate, lactate, ammonia
Methods supported/Immunoassay methods	potentiometry, colorimetric, enzymatic/—	photometry, RISE
No. of direct ion selective electrode channels	4	3
• Must load separate reagent pack for each specimen/No. of diff. assays in pack	yes/1	no/—
• Separate reagent pack for each test run	yes	no
No. of different measured assays onboard simultaneously	one per module (DT 60 II, DTE II, DTSC II)	43
No. of different assays programmed, calibrated at once	1	43
No. of user-definable (open) channels/No. active simultaneously	none	60/60
No. of different analytes for which system accommodates reagent containers onboard at once/Tests per container set	—/—	40/200
Shortest/Median onboard reagent stability/Refrigerated onboard	—/—/no	4 hrs/28 days/yes (8°C)
Multiple reagent configurations supported	no	yes
Reagent container placed directly on system for use	no	yes
Instrument has same capabilities when 3rd-party reagent used	—	no
Reagent only cost per reportable result for standard chemistries/ Therapeutic drugs/Special analytes	—/—/—	—/—/—
Walkaway capacity in minutes/No. of specimens/No. of tests-assays	—/—/—	18 min to first result/40 specimens/1,000 tests
System is liquid, dry, or reconstituted onboard	dry	liquid
Uses disposable cuvettes/Max. No. stored	no/—	no/—
Uses washable cuvettes/Replacement frequency	no/—	yes/50,000 tests
Minimum sample volume aspirated precisely at one time	10 µL	—
Supplied with UPS (backup power)/Requires floor drain	no/no	yes/yes
Requires dedicated water system/Water consumption in L per hour	no/none	yes/7
Noise generated in decibels	—	60
Dedicated pediatric sample cup/Dead volume	—	yes/—
Primary tube sampling/Pierces caps on primary tubes	no/no	yes/no
Sample bar-code reading capability/Autodiscrimination	no/—	on sample transport, shortly before sample is aspirated (2 of 5 interleaved, UPC, Codabar, codes 39 & 128)/no
Reagent bar-code reading capability	yes	yes
Bar-code placement per CLSI standard Auto2A	—	yes
Onboard test auto inventory (determines volume in container)	—	yes
Measures No. of tests remaining/Short sample detection/Clot detection	—/—/—	yes/yes/no
Automatic detection of adequate reagent for aspir. & analysis	—	yes
Hemolysis/Turbidity detection-quantitation	no/no	no/no
Dilution of patient samples onboard/Automatic rerun capability	no/no	yes/yes
Sample volume can be reduced to rerun out-of-linear-range high results/Increased to rerun out-of-linear-range low results	no/no	yes/yes
Autocalibration or autocalibration alert	no	no
Calibrants stored onboard/Multipoint calibration supported	no/yes	no/yes
Typical calib. frequency for ISE/Metabolites/Ther. drugs/Drugs of abuse	reagent lot changes	daily/7–14 days/—/—
Automatic shutdown/Startup programmable	no/no	no/yes
Stat time to completion of all analytes, throughput per hr. for:		
• Sodium, potassium, chloride, TCO2	15 tests	2 min, 450 specimens
• Sodium, potassium, chloride, TCO2, glucose, urea, creatinine	75 tests	10 min, 180 specimens
• Albumin, direct & total bili., AST, ALT, ALP	20 tests	11 min, 180 specimens
Typical time delay from ordering stat test to aspir. of sample	none	—
How often QC required/Onboard SW capability to review QC	every 24 hr/no	per shift-daily/yes
Onboard real-time QC/Support multiple QC lot Nos. per analyte	no/no	yes/no
QC results transferred automatically to LIS	yes	yes
Data mgmt. capability/Instrument vendor supplies LIS interface	—/no	onboard/no
Lab information systems with which interfaces up and running in active user sites	—	LabDAQ, Data Innovations, Soft Computer, Misys
Bidirectional interface capability	no	broadcast download, host query
Test results transmitted to LIS as soon as chem. time complete	yes	yes
LIS interface operates simultaneously with running assays	yes	yes
Uses LOINC to transmit orders & results	—	no
How labs get LOINC codes for reagent kits	—	—
Lab can control analyzer remotely	no	no
Interface avail. (or will be) to automated specimen handling system	no	no
Modem servicing available/Can diagnose own malfunctions/ Determine malfunctioning component	no/yes/yes	no/no/no
On-site time of svc. engineer/Onboard error codes for troubleshooting	—/yes	24 hrs/yes
Mean time between failures/To repair failures	—/—	—/—
Average time to complete maintenance by lab personnel	daily: 5 min; weekly: 5 min; monthly: none	daily: 5 min; weekly: 10 min; monthly: 2.5 hrs
Onboard maintenance records/Maint. training demo module	no/no	no/no
Training provided with purchase/Advanced oper. training avail.	yes/—	3 days on site, 3 days at vendor office/yes
Annual service contract cost (24 h/7 d)	—	\$8,500 (M-F, 8 am–9 pm EST)
Distinguishing features (supplied by company)	disposable tips eliminate sample carryover; random access testing so chem- istries can be run in any order, with no reagent prep.; indiv. packaged test slides eliminate waste and facilitate rapid analysis; dry-slide technology minimizes the effects of interferences to provide accurate results	small benchtop analyzer ideal for POL, as primary system in small lab, or a back-up system in a large lab; onboard reusable cuvettes provide cost savings on disposables; large reagent menu

Chemistry analyzers (for low-volume laboratories)

Part 8 of 11	Polymedco, Inc. Marie Longo mlongo@polymedco.com 510 Furnace Dock Road, Cortlandt Manor, NY 10567 800-431-2123 www.polymedco.com	Randox Laboratories marketing@randox.com 4065 Oceanside Blvd., Ste. Q, Oceanside, CA 92056 760-639-1500 www.randox.com
Name of instrument/First year sold in U.S. List price/No. of analyzers sold in 2007 No. units in clinical use in U.S./Outside U.S. Country where designed/Manufactured/Where reagents mftd. Operational type/Reagent type Sample handling system/Model type Dimensions in inches (H x W x D)/Instrument footprint	SPOTCHEM EZ/2006 \$9,400/45 90/— Japan/Japan/U.S. discrete/self-contained single-use cartridges/packages/slides tray/benchtop 13.5 x 8 x 6.5/—	Rx Daytona/2005 —/— >800 units worldwide Japan/Japan/U.K. random access, discrete/self-contained multi-use cartridges-packages-slides removable ring/benchtop 30.2 x 24.8 x 20.2 sq ft/—
Tests available on instrument in U.S. Tests cleared but not clinically released Tests not available in U.S. but submitted for FDA 510(k) clearance Tests not available in U.S. but available in other countries Research-use-only assays/Tests in development User-defined methods implemented for what analytes	CHOL, TRIG, HDL, GLU, FRUC, ALT, AST, ALB, ALP, AMY, BUN, CAL, CK, CREAT, GGT, PHOS, LDH, MG, TBIL, TP, UA, PANEL 1(ALB, BUN, GLU, CRE, CAL), PANEL 2(ALP, TBIL, ALT, AST, TP), LIPID PANEL (CHOL, TRIG, HDL, CLDL) — — — —/LDL —	*acid phos., alb., aldolase, ALT, ammonia, alk. phos., AST (GOT), amylase, panc. amylase, bilirubin (direct/total), calcium, total CO ₂ , cholesterol, HDL-C, LDL-C, CK-NAC, CK-MB, complement C3/C4, copper, CRP, HS CRP, FR CRP, creatinine, ferritin, fructosamine, glucose, GGT, HbA1c, IgA, IgE, IgG, IgM, LDH, lipase, lithium, ASO, lipoprotein(a), ApoA1, ApoB, microalb., magnes., myoglobin, sodium, prealbumin, phosphorus, potas., RF, iron, phenobarbital, phenytoin, digoxin, digitoxin, theophylline, gentamicin, valp. acid, carbamazepine, transferrin, TIBC, total protein, triglycerides, uric acid, BUN/urea, urinary protein, zinc, ISE Na, others — — — *acetic acid, Apo E, Apo CIII, Apo CII, ApoAII, alpha-1-antitryp, alpha-1-acid glycoprotein, bile acids, butyryl choline., others/— acetaminophen, drugs of abuse, salicylate cyclosporine, alcohol, glycerol-3-phosphate, oxidase, phospholipids, maltose, T4, T-uptake
Methods supported/Immunoassay methods No. of direct ion selective electrode channels • Must load separate reagent pack for each specimen/No. of diff. assays in pack • Separate reagent pack for each test run No. of different measured assays onboard simultaneously No. of different assays programmed, calibrated at once No. of user-definable (open) channels/No. active simultaneously No. of different analytes for which system accommodates reagent containers onboard at once/Tests per container set Shortest/Median onboard reagent stability/Refrigerated onboard Multiple reagent configurations supported Reagent container placed directly on system for use Instrument has same capabilities when 3rd-party reagent used Reagent only cost per reportable result for standard chemistries/Therapeutic drugs/Special analytes Walkaway capacity in minutes/No. of specimens/No. of tests-assays System is liquid, dry, or reconstituted onboard Uses disposable cuvettes/Max. No. stored Uses washable cuvettes/Replacement frequency Minimum sample volume aspirated precisely at one time Supplied with UPS (backup power)/Requires floor drain Requires dedicated water system/Water consumption in L per hour Noise generated in decibels Dedicated pediatric sample cup/Dead volume Primary tube sampling/Pierces caps on primary tubes Sample bar-code reading capability/Autodiscrimination Reagent bar-code reading capability Bar-code placement per CLSI standard Auto2A Onboard test auto inventory (determines volume in container) Measures No. of tests remaining/Short sample detection/Clot detection Automatic detection of adequate reagent for aspir. & analysis Hemolysis/Turbidity detection-quantitation Dilution of patient samples onboard/Automatic rerun capability Sample volume can be reduced to rerun out-of-linear-range high results/Increased to rerun out-of-linear-range low results Autocalibration or autocalibration alert Calibrants stored onboard/Multipoint calibration supported Typical calib. frequency for ISE/Metabolites/Ther. drugs/Drugs of abuse Automatic shutdown/Startup programmable	optical measurement of reflection intensity of reagent color reaction — yes/single strips and panel strips available yes 9 card calibration —/— —/— —/—/— no yes no —/—/— up to 15/1/up to 9 dry no/— no/— 5 µL no/no no/— — no/— no/no no/no by handheld scanner as tubes are loaded onto instrument (2 of 5 interleaved, UPC, Codabar, codes 39 & 128)/yes yes no no no/yes/no no no/no no/no no no/no —/per box/—/— no/no	photometry, potentiometry (ISE), immunoturbidimetry, latex-enhanced immunoturbidimetry/— 3 Na+, K+, CL— no/50 to 2,205 no 30 60 —/60 27/71 to 1,053 8 hr/30 days/yes (8° to 15°C) yes yes yes —/—/— —/40/— liquid no/45 yes/5 years 2 µL no/no yes/7.5 daily 60 yes/40 µL yes/no yes, on sample transport, shortly before sample is aspirated (2 of 5 interleaved, UPC, Codabar, codes 39 & 128)/yes yes — yes yes/yes/no yes yes/yes yes/yes yes/yes yes no/yes daily/28 days/7 days/— no/yes
Stat time to completion of all analytes, throughput per hr. for: • Sodium, potassium, chloride, TCO ₂ • Sodium, potassium, chloride, TCO ₂ , glucose, urea, creatinine • Albumin, direct & total bili., AST, ALT, ALP Typical time delay from ordering stat test to aspir. of sample How often QC required/Onboard SW capability to review QC Onboard real-time QC/Support multiple QC lot Nos. per analyte QC results transferred automatically to LIS	— 9 min, 48 samples per hr 9 min, 48 samples per hr — daily/no no/no no	—, 270 specimens —, 315 specimens —, 180 specimens 60 sec shortest: daily; longest: at customer discretion/yes yes/yes yes
Data mgmt. capability/Instrument vendor supplies LIS interface Lab information systems with which interfaces up and running in active user sites Bidirectional interface capability Test results transmitted to LIS as soon as chem. time complete LIS interface operates simultaneously with running assays Uses LOINC to transmit orders & results How labs get LOINC codes for reagent kits	onboard/no — — yes yes no —	onboard/no — yes (host query) yes yes no —
Lab can control analyzer remotely Interface avail. (or will be) to automated specimen handling system	no no	— no
Modem servicing available/Can diagnose own malfunctions/ Determine malfunctioning component On-site time of svc. engineer/Onboard error codes for troubleshooting Mean time between failures/To repair failures Average time to complete maintenance by lab personnel Onboard maintenance records/Maint. training demo module Training provided with purchase/Advanced oper. training avail. Annual service contract cost (24 h/7 d)	no/no/no depot service/yes —/— daily: 1 min; monthly: 5 min no/no 1 day on site/no —	no/yes/yes within 24 hr/yes —/— daily: 5 min; weekly: 15 min no/no 3 days on site/yes —
Distinguishing features (supplied by company)	small analyzer ideal for stat labs, small POLs, ERs, and imaging centers; analyzer and reagent test strips are CLIA waived; dry chemistry strips, excellent stability, and shelf life; single test strips and panel strips available, customizable testing	comprehensive clinical and research test menu, benchtop, low water consumption, automatic start, multi-speed mixing, Windows software *Contact company for complete list

Chemistry analyzers (for low-volume laboratories)

Part 10 of 11	Roche Diagnostics Corp. Ken Dean kendea@roche.com 9115 Hague Rd., Indianapolis, IN 46256 317-521-7538 www.poc.roche.com	SDI Biomed Inc. Robert Silverberg rs@sdbiomed.com 23679 Calabasas Road, #241, Calabasas, CA, 91302 818-349-4464 www.sdbiomed.com
Name of instrument/First year sold in U.S. List price/No. of analyzers sold in 2007 No. units in clinical use in U.S./Outside U.S. Country where designed/Manufactured/Where reagents mftd. Operational type/Reagent type	cobas c111/2007 \$49,000/10 60/1,700 Switzerland/Switzerland/Germany random access/self-contained multi-use cartridges-packages-slides	SDI CA 480 Clinical Chemistry System/2004 \$85,000/— >50/>600 Europe/Europe/United States random access/self-contained single-use cartridges-packages-slides
Sample handling system/Model type Dimensions in inches (H × W × D)/Instrument footprint	rack/benchtop 18.9 × 28.4 × 21.7/4.3 sq ft	wheel, with 4 independent segments/benchtop 40.5 × 25.4 × 17.7/7.2 sq. ft.
Tests available on instrument in U.S. Tests cleared but not clinically released Tests not available in U.S. but submitted for FDA 510(k) clearance Tests not available in U.S. but available in other countries Research-use-only assays/Tests in development	albumin, ALT, ALP, ammonia, amylase (pancreatic), AST, bicarbonate, D-bilirubin, T-bilirubin, bun, calcium chloride, cholesterol, CK, CK-MB, creatinine Jaffe, creatinine plus, CRP, GGT, glucose HbA1c, HDL cholesterol, lucitate, LDH, LDL cholesterol, lipase, magnesium, microalbumin, phosphate, potassium, sodium, total protein, triglycerides, uric acid — CRP HHS, ethanol, homocysteine — —/cystatin-C, D-dimer	albumin, alkaline phosphatase, ALT, amylase, AST, CO2, direct bilirubin, total bilirubin, calcium, cholesterol, CK, creatinine, Gamma-GT, glucose-HK, D-HDL, iron, phosphorus, LDH-L, magnesium, total protein, triglycerides, urea nitrogen, uric acid, D-LDL, UCRP WR, fructosamine, ferritin, HbA1c none none na none/drugs of abuse
User-defined methods implemented for what analytes	—	none
Methods supported/Immunoassay methods No. of direct ion selective electrode channels • Must load separate reagent pack for each specimen/No. of diff. assays in pack • Separate reagent pack for each test run No. of different measured assays onboard simultaneously No. of different assays programmed, calibrated at once No. of user-definable (open) channels/No. active simultaneously No. of different analytes for which system accommodates reagent containers onboard at once/Tests per container set Shortest/Median onboard reagent stability/Refrigerated onboard Multiple reagent configurations supported Reagent container placed directly on system for use Instrument has same capabilities when 3rd-party reagent used Reagent only cost per reportable result for standard chemistries/ Therapeutic drugs/Special analytes Walkaway capacity in minutes/No. of specimens/No. of tests-assays System is liquid, dry, or reconstituted onboard Uses disposable cuvettes/Max. No. stored Uses washable cuvettes/Replacement frequency Minimum sample volume aspirated precisely at one time Supplied with UPS (backup power)/Requires floor drain Requires dedicated water system/Water consumption in L per hour Noise generated in decibels Dedicated pediatric sample cup/Dead volume Primary tube sampling/Pierces caps on primary tubes Sample bar-code reading capability/Autodiscrimination	photometry, potentiometry 3 no no 17 112 0/— 17/50–200 120 hrs/28 days/yes yes yes no —/—/— 4.5/8/60 liquid yes/60 no/— 2–15 µL no/no no/.3 standby: 44.4, running: 51.2 no/— yes/no yes, by handheld scanner as tubes are loaded onto instrument (2 of 5 interleaved, UPC, Codabar, codes 39 & 128)/yes	photometry, potentiometry/selected methodologies 3 no/— no 33 33 0/available on request 30/150 per container 14 days/30 days/yes (14°C) yes yes yes —/—/— 165/40/33 liquid no yes/analyzer uses permanent quartz cuvettes 3 µL yes/no no/1 — no/— yes/no yes/yes
Reagent bar-code reading capability Bar-code placement per CLSI standard Auto2A Onboard test auto inventory (determines volume in container) Measures No. of tests remaining/Short sample detection/Clot detection Automatic detection of adequate reagent for aspir. & analysis Hemolysis/Turbidity detection-quantitation Dilution of patient samples onboard/Automatic rerun capability Sample volume can be reduced to rerun out-of-linear-range high results/Increased to rerun out-of-linear-range low results Autocalibration or autocalibration alert Calibrants stored onboard/Multipoint calibration supported Typical calib. frequency for ISE/Metabolites/Ther. drugs/Drugs of abuse Automatic shutdown/Startup programmable	yes — yes yes/yes/no (ISE only) yes no/no yes/no yes/yes yes no/yes 24 hrs (main calibration)/lot/—/— no/no	yes yes yes yes/yes/no yes no/no yes/yes yes/no yes yes/yes 30 minutes/once per week/once per week/once per week no/no
Stat time to completion of all analytes, throughput per hr. for: • Sodium, potassium, chloride, TCO2 • Sodium, potassium, chloride, TCO2, glucose, urea, creatinine • Albumin, direct & total bili., AST, ALT, ALP Typical time delay from ordering stat test to aspir. of sample How often QC required/Onboard SW capability to review QC Onboard real-time QC/Support multiple QC lot Nos. per analyte QC results transferred automatically to LIS	7 min, 100 specimens 11 min, 100 specimens 13 min, 100 specimens immediately upon completion of currently running test daily/yes no/yes yes	1.5 min., 60 6 min. 48 sec, 60 7 min. 12 sec, 50 3 min. 8 hrs/yes yes/yes yes
Data mgmt. capability/Instrument vendor supplies LIS interface Lab information systems with which interfaces up and running in active user sites Bidirectional interface capability Test results transmitted to LIS as soon as chem. time complete LIS interface operates simultaneously with running assays Uses LOINC to transmit orders & results How labs get LOINC codes for reagent kits	onboard/no — yes (broadcast download, host query) yes yes no —	onboard/— Schylab, LabDaq, Fletcher Flora, Medcom yes yes yes no —
Lab can control analyzer remotely Interface avail. (or will be) to automated specimen handling system	no no	no no
Modem servicing available/Can diagnose own malfunctions/ Determine malfunctioning component On-site time of svc. engineer/Onboard error codes for troubleshooting Mean time between failures/To repair failures Average time to complete maintenance by lab personnel Onboard maintenance records/Maint. training demo module Training provided with purchase/Advanced oper. training avail. Annual service contract cost (24 h/7 d)	no/yes/no —/yes 216 days/1.5 hrs daily: 15 min; weekly: 1 min; monthly: 10 min no/no yes (5 days on site)/no \$4,500	yes/yes/yes yes, guaranteed within 24 hours/yes 10,000 hours/2 hours daily: 5 min.; weekly: 15 min.; monthly: 15 min. yes/no 4 days on site or 4 days at vendor offices/yes \$7,500
Distinguishing features (supplied by company)	compact size, truly automated, consistent results with larger cobas analyzers	permanent cuvettes, onboard jet wash/dry system, six minutes to first result, notebook-like operator interface, small footprint

Chemistry analyzers (for low-volume laboratories)

Part 11 of 11	Siemens Healthcare Diagnostics 1717 Deerfield Rd., Deerfield, IL 60015 800-242-3233 www.siemens.com	Vital Diagnostics USsales@vitaldiagnostics.com 27 Wellington Road, Lincoln, RI 02865 800-345-2822 www.vitaldiagnostics.com
Name of instrument/First year sold in U.S. List price/No. of analyzers sold in 2007 No. units in clinical use in U.S./Outside U.S. Country where designed/Manufactured/Where reagents mftd. Operational type/Reagent type Sample handling system/Model type Dimensions in inches (H x W x D)/Instrument footprint	Dimension Xpand Plus Integrated Chemistry System/2004 —/— —/— U.S./U.S./U.S. continuous random access/self-contained single-use & multi-use cartridges racks/floor-standing 45 x 51 x 31 (without monitor)/10.6 sq ft	Envoy 500 Chemistry Analyzer/2005 \$75,000/60 120/— Italy/Italy/U.S. random access/self-contained multi-use cartridges-packages-slides rotor/benchtop 27 x 40 x 23/10 sq ft
Tests available on instrument in U.S.	ser. acetamino., acid phos., alb., alk. phos., ALT, ammonia, amylase, AST, automated HDL & LDL, C3 compl., C4, calc., carbamaz., CO2, chlor., cholesterol, CRP, creat. kin., creatinine, CK-MB isoenzyme, digitoxin, digoxin, ethyl alcohol, gentamicin, GGT, glucose, HbA1c, IgA/G/M, iron, lactic acid, LDH, lidoc., lipase, lith., magnes., microalb., n-acetylprocain., NT-pro BNP, phenobart., pheny., phosphorus, potas., prealbum., procainam., pseudocholinest., ser. salicyl., sod., ser. TCA, theophyl., thyronine uptake, TIBC, tobramycin, tot. protein, tPSA, tot. T4/thyroxine, transferrin, triglycerides, urea nitrog., uric acid, urine amphet. Screen, urine barbitura. screen, benzodiazep., cannabinoids, cocaine metabolite, methadone, opiates, phencyclidine, TBIL, DBIL, cyclosporine, ferritin, fPSA, free T4/thyroxine, hCG, myoglobin, TSH, triiodothyronine, trop. I, others	general chemistry, albumin, bilirubin, direct, bilirubin, total, calcium, creatinine, glucose, iron, total, magnesium, phosphorus, protein, total, urea nitrogen (BUN), uric acid, enzyme, alanine aminoTransferase (ALT), alkaline phosphatase, amylase, aspartate transaminase (AST), creatine phosphokinase (CPK), gamma glutamyl transferase (GGT), lactate dehydrogenase (LDH), lipid, direct LDL, triglycerides, direct HDL, cholesterol, electrolyte, carbon dioxide, chloride, potassium, sodium, special chemistries, hemoglobin A1c
Tests cleared but not clinically released Tests not available in U.S. but submitted for FDA 510(k) clearance Tests not available in U.S. but available in other countries Research-use-only assays/Tests in development	— — — —/sirolimus, myeloperox., mycophenolic acid	— — — —/C3, C4, CRP wide range, CRP high sensitivity, digoxin, ferritin, fructosamine, hemoglobin A1c, lipase, microalbumin, phenobarbital, phenytoin, theophylline, UIBC, glycoMark, cystatin C
User-defined methods implemented for what analytes	—	—
Methods supported/Immunoassay methods	photometry, potentiometry, turbidimetric assays/Integrated Multisensor Technology, heterogenous EIA using HM, Emit, latex turbidimetric	photometry, potentiometry
No. of direct ion selective electrode channels • Must load separate reagent pack for each specimen/No. of diff. assays in pack • Separate reagent pack for each test run No. of different measured assays onboard simultaneously No. of different assays programmed, calibrated at once No. of user-definable (open) channels/No. active simultaneously No. of different analytes for which system accommodates reagent containers onboard at once/Tests per container set Shortest/Median onboard reagent stability/Refrigerated onboard Multiple reagent configurations supported Reagent container placed directly on system for use Instrument has same capabilities when 3rd-party reagent used Reagent only cost per reportable result for standard chemistries/ Therapeutic drugs/Special analytes	3 no/— no 47 190 10/10 47/15-360 72 hr/30 days/yes (2° to 8°C) yes yes yes —/—/—	4 no/— no 40 40 500/40 40/150 7 hrs/21 days/yes (12° to 15°C) yes yes no —/—/—
Walkaway capacity in minutes/No. of specimens/No. of tests-assays System is liquid, dry, or reconstituted onboard Uses disposable cuvettes/Max. No. stored Uses washable cuvettes/Replacement frequency Minimum sample volume aspirated precisely at one time Supplied with UPS (backup power)/Requires floor drain Requires dedicated water system/Water consumption in L per hour Noise generated in decibels Dedicated pediatric sample cup/Dead volume Primary tube sampling/Pierces caps on primary tubes Sample bar-code reading capability/Autodiscrimination	can be hrs/60/>1,000 liquid, no reagent prep required by operator yes/12,000 no/— 2 µL yes/no yes/up to 4 to 4.5 µL <70 no/20 µL yes/no yes (2 of 5 interleaved, Codabar, codes 39 & 128)/yes	240 min/52 specimens/150 tests liquid no yes/never 1 µL yes/no no/2 >60 no/— yes/no sample loaded on the analyzer by internal barcode scanner (2 of 5 interleaved, UPC, Codabar, codes 39 & 128)/no
Reagent bar-code reading capability Bar-code placement per CLSI standard Auto2A Onboard test auto inventory (determines volume in container) Measures No. of tests remaining/Short sample detection/Clot detection Automatic detection of adequate reagent for aspir. & analysis Hemolysis/Turbidity detection-quantitation Dilution of patient samples onboard/Automatic rerun capability Sample volume can be reduced to rerun out-of-linear-range high results/Increased to rerun out-of-linear-range low results Autocalibration or autocalibration alert Calibrants stored onboard/Multipoint calibration supported Typical calib. frequency for ISE/Metabolites/Ther. drugs/Drugs of abuse Automatic shutdown/Startup programmable	yes yes yes yes/yes/no yes yes/yes yes/yes yes yes yes(Na, K, Cl)/yes every 2 hrs, autocalibrate/—/60-90 days/30 days not required/—	yes no yes yes/yes/no yes no/no yes/yes yes/yes yes no/yes 4 min/21 days/—/— yes/yes
Stat time to completion of all analytes, throughput per hr. for: • Sodium, potassium, chloride, TCO2 • Sodium, potassium, chloride, TCO2, glucose, urea, creatinine • Album., direct & total bili., AST, ALT, ALP Typical time delay from ordering stat test to aspir. of sample How often QC required/Onboard SW capability to review QC Onboard real-time QC/Support multiple QC lot Nos. per analyte QC results transferred automatically to LIS	2 min, 62 specimens 4 min, 62 specimens 8 min, 62 specimens 60 sec steady state, 2 min from standby daily/yes yes/yes yes	3:45 min, 37 specimens 6:10 min, 45 specimens 9:26 min, 26 specimens >1 min 4-24 hrs yes/yes yes
Data mgmt. capability/Instrument vendor supplies LIS interface Lab information systems with which interfaces up and running in active user sites Bidirectional interface capability Test results transmitted to LIS as soon as chem. time complete LIS interface operates simultaneously with running assays Uses LOINC to transmit orders & results How labs get LOINC codes for reagent kits	optional add-on/yes (additional cost) interfaces available for all major LIS vendors yes (broadcast download & host query) yes yes no —	optional add-on (Vital Diagnostics) Antek, Fletcher-Flora, Orchard, Skyler Lab, Data Innovations, Sunquest broadcast download yes yes no —
Lab can control analyzer remotely Interface avail. (or will be) to automated specimen handling system	no no	no no
Modem servicing available/Can diagnose own malfunctions/ Determine malfunctioning component On-site time of svc. engineer/Onboard error codes for troubleshooting Mean time between failures/To repair failures Average time to complete maintenance by lab personnel Onboard maintenance records/Maint. training demo module Training provided with purchase/Advanced oper. training avail. Annual service contract cost (24 h/7 d)	yes/yes/yes 2-8 hr/yes —/— daily: 5 min; weekly: 10 min; monthly: 15 min no/no 5 days on site, 4 days at vendor offices/no multiple types	yes/yes/yes within 24 hrs/yes —/— daily: 5 min; weekly: 15 min; monthly: 5 min yes/no 5 days on site/yes \$8,995 (M-F, 8 am-8 pm)
Distinguishing features (supplied by company)	consolidated low-volume workstation integrates immunoassays onboard with other chemistries; allows single platform to meet more than 95 percent of testing needs; eliminates sample splitting, aliquotting	C02 performed as an electrolyte; four-parameter onboard dry ISE; 570 tests per hour