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CHEMISTRY AND IMMUNOASSAY ANALYZERS

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

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

Part 2 of 6 **Beckman Coulter** Diatron MI Dynex Technologies Onyi Nacionales onacionales@beckman.com Frank Matuszak frank.matuszak@diatron.com Alex Azar aazar@dynex.com FOR POINT-OF-CARE AND Medley, FL 833-228-7931 www.diatron.com Brea, CA Chantilly, VA LOW-VOLUME LABORATORIES 800-526-3821 www.beckmancoulter.com 800-288-2354 www.dynex.com Name of instrument AU480 Pictus 500 (P500) DS2 Automated ELISA System Type of instrument immunoassay chemistry chemistry Operational type/Model type continuous random access/floor standing batch. random access. continuous random access. discrete/ batch/benchtop benchton List price/First year sold in U.S. -/2009 \$42.860/2016 -/2007 Targeted hospital bed size/Targeted test volume ---/annual: 50,000-250,000 20–100/daily: 500–2,500; monthly: 15,000–75,000; annual: ---/daily: < 4 microplates (96-well microplates) 182,500-912,500 Company manufactures instrument yes (also sold by McKesson, Henry Schein, Medline) yes ves DxC 700 AU, AU 5800 Pictus 700 (P700) Other models in this family of analyzers DSX No. of units in clinical use in U.S./Outside U.S. (countries) $> 40/\leq 200$ (Europe, Latin America, Africa, Middle East, Asia) -/4,510 (worldwide) Dimensions (H \times W \times D)/Instrument footprint $24.4 \times 35.4 \times 26$ in./6.4 sq. ft. $47.5 \times 57 \times 30$ in./18.5 sq. ft. $26 \times 21 \times 27$ in./3.7 sq. ft. Weight empty/Weight fully loaded 926 lbs./--253 lbs./271 lbs. 105 lbs./-63 (63 can be run and calibrated at one time) No. of different measured assays onboard simultaneously 72 (999 can be run and calibrated at one time) up to 12 assays per microplate (up to 12 can be run) 18 (76 can be active simultaneously) No. of user-definable (open chemistry) channels (open system; up to 12 can be active simultaneously) Test throughput per hour/Assay run time 800 (400 photometric, 800 with ISE)/8.5 min. 500/30-1,200 sec. (avg. 300 sec.) assay dependent (up to 384 tests per run)/assay dependent Chemistry: No. of direct ion-selective electrode channels 3 3 Detection methods photometry, potentiometry photometry, potentiometry Stat time until completion/specimen throughput for: Ion-selective electrode 4.5 min./400 specimens per hr. 2 min./60 specimens per hr. 12.5 min./133 specimens per hr. 7.5 min./45 specimens per hr. Basic metabolic panel Complete metabolic panel 14.5 min./72 specimens per hr. 9 min./25 specimens per hr. Typical time delay from ordering stat test until aspiration of sample 60 sec. 24 sec. Immunoassay: Fully automated microplate immunoassay system ves (up to 12 tests per unit: 96 wells per microplate) _ Methodologies supported enzyme immunoassay Separation methodologies coated microwell Stat time until completion of a B-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 200->1,000 (varies by assay)/self-contained multiuse 50-200 per set, 400-1,800 per pack/self-contained -/open reagent system multiuse, open reagent system yes (4°-12°C)/yes Reagents refrigerated onboard/Reagents ready to use no (23°±4°C)/---ves (8°±2°C)/ves Reagent lot tracking/Reagent inventory ves/ves ves/ves ves/ves 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/no no/yes yes/180 min. or 95 specimens or 1,200 tests/assays Walkaway capability/Walkaway duration ves/up to 192 specimens or up to 192 tests/assays ves/80 specimens Design of sample-handling system rack rack rack Uses washable cuvettes/Uses disposable cuvettes ves/no yes/yes (can store up to 80 cuvettes) no/-Min.-max. sample volume that can be aspirated at one time 10–300 µL . 1–25 μL 2–100 μL Min. reaction volume/Min. specimen volume/Min. dead volume 90 µL/41 µL or 1 uL with 4 mm above gel barrier/50 µL 180 µL/22 µL/100 µL 10 µL/—/-Dedicated pediatric sample cup yes (dead volume: 50 µL) yes (dead volume: 20 µL) no Primary tube sampling yes ves Accommodates most standard tube sizes/Accepts nonstandard ves/ves (primary, secondary tubes: $11.5-16 \times 55-102$ mm; ves/no ves/ves $(17 \times 100 \text{ mm})$ tube sizes nested micro cups) Pierces caps on primary tubes no yes no Protects against probe collision yes no yes Detects clots/liquid level/short sample ves/ves/ves ves/ves/ves ves/ves/ves detection and quantitation for hemolysis, icterus, lipemia, clots Detection or quantitation for hemolysis, icterus, lipemia, clots detection for clots; hemolysis, icterus, lipemia not available detection for clots; hemolysis, icterus, lipemia not available yes (can be programmed to perform dilutions prior to Dilutes patient samples onboard/Susceptibility to carryover yes (can be programmed to perform sample dilutions prior to yes (can be programmed to perform dilutions prior to analysis)/0.001 parts per million analysis)/30 parts per million analysis)/0 parts per million Automatic rerun capability Sample volume can be diluted to rerun out-of-linear-range high results ves ves no ves yes yes Sample volume can be concentrated to rerun out-of-linear-range no ves yes low results Analyzer requires dedicated water supply Autocalibration/Multipoint calibration supported yes (20 L/hr. consumption during operation) yes (calibrants are not stored onboard)/yes (recommended no (2 L/hr. consumption during operation) yes (calibrants can be stored onboard)/yes (recommended no no (calibrants are not stored onboard)/yes (recommended avg. frequency: assay dependent) avg. frequency: 7 days) avg. frequency: assay dependent) 8 hrs./-/7 days/14 days/14 days Typical calibration frequency for ISE/therapeutic drugs/ 1 day/14 days/14-20 days/30 days/-/assay dependent/assay dependent/—/assay dependent drugs of abuse/general chemistries/immunoassays Automatic programmable start/Automatic programmable shutdown no/no no/no no/no Onboard real-time QC/Onboard software capability to review QC ves/ves yes/yes yes/yes Supports multiple QC lot numbers per analyte yes ves manually by user, direct to drain Waste management direct to drain automated collection onboard instrument yes (Interleaved 2 of 5, UPC, Codabar, Code 39, Code 128)/no yes (UPC, Codabar, Code 39, Code 128, Code 93)/yes Sample barcode-reading capability/Autodiscrimination yes (Interleaved 2 of 5, Codabar, Code 39, Code 128)/yes Lab can control analyzer from remote computer ves no ves 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 Data-management capability/LIS or EHR systems interfaced yes yes onboard/AP Vision, Medicus, Schuyler, LabTrack, onboard/Cerner, Antrim, CCA, Chemware, Dawning Technologies, onboard/Orchard. Cerner ADAC, Dynamic Healthcare, Antek, Siemens, McKesson, more CGM LabDaq, Medytox LIS interface provided/Bidirectional interface capability yes (included in instrument price)/yes (broadcast download yes (additional cost)/yes (broadcast download and host query) no/yes (host query) and host query) Modem servicing provided/Service engineer on-site response time ves/< 24 hrs. no/48 hrs. no/24 hrs. Mean time between failures 1.2 down service calls per year (displays error codes for 1 per year (displays error codes for troubleshooting) 250 days (displays error codes for troubleshooting) troubleshooting) daily: 6 min.; weekly: 10 min.; monthly: 45 min. Average scheduled maintenance time by lab personnel daily: 30 min.; weekly: 1 hr.; monthly: 2 hrs. daily: 10 min.; weekly: 5 min. Maintenance records kept onboard for user/vendor yes/no no/no no/no Maintenance training demonstration module onboard ves no no Training included with purchase/Avg. time for basic user training yes (2 training slots)/3 days (at customer and vendor sites) yes (2 training slots)/3 days (at customer site) no/3 days (at customer site) Advanced operator training/Extra charge for follow-up yes (at vendor or customer site)/yes ves (at vendor site)/---ves (at customer site)/ves or advanced training Warranty provided/Cost of annual service contract (24 h/7 d) ves (1 year)/---yes (1 year)/ \$5,500 ves (1 year)/----Distinguishing features (supplied by company) • standardization across the AU family of chemistry analyzers uninterrupted workflow run anv assav from anv vendor-fully automated open system · lower total cost of ownership due to fewer consumables · Windows-based, intuitive, user-friendly software • reliable workload scheduling-more than 98 percent mean and concentrated reagents high-quality components for long stability and result time between failures commonly replaced parts can be changed in 3 steps or • saves space-less than 4 sq. ft. of linear counter space to reliability

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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 less, in 60 seconds or less, without tools

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handbard in an and bard in a set of the set	List price/First year sold in U.S. Targeted hospital bed size/Targeted test volume		—/2016 —	
Other middler in balance of endancesMode No Sol	Company manufactures instrument	annual: 40,000–100,000 tests	vac (also cold by distribution portpare)	use (slee cold by distribution portners)
District of the second secon	Other models in this family of analyzers	Selectra Pro S		Pentra 400
Both Target StatusBit DataBit Data<				
Here and the product of experiments	Weight empty/Weight fully loaded	210 lbs./—	60 lbs./110 lbs.	264 lbs./266 lbs.
Br. dist. Solution of the safe information of the safe informa	No. of different measured assays onboard simultaneously	36 (96 can be run and calibrated at one time)		55 (55 can be run and calibrated at one time)
Charter Control Control <t< td=""><td>No. of user-definable (open chemistry) channels</td><td></td><td>_</td><td></td></t<>	No. of user-definable (open chemistry) channels		_	
Josh dariJosh dari	Chemistry:			
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- Been and the set of	Stat time until completion/specimen throughput for: • Ion-selective electrode	5 min./66 specimens per hr.	_	< 5 min./37 specimens per hr.
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High and backed is instruction	• Complete metabolic panel Typical time delay from ordering stat test until aspiration of sample		_	
Detection grant or general segmed in a segmed in a segmed in an analysis of a large segmed in an analysis of large	Immunoassay: Fully automated microplate immunoassay system		ves (96 tests per unit: 96 wells per microplate)	
Statiss and conception of a Hoto Statism — — — — — Trippid model with order to advise of a Hoto Statism of a Hoto Hoto	Methodologies supported	_	chemiluminescence, enzyme immunoassay	_
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 To control biol of control biol contr	Typical time delay from test order to aspiration of sample	-	-	-
And a set of a set of a reader set of a	• Typical time delay from test order to aspiration of sample	Ξ	<u> </u>	Ξ
Bagent Subscriptions of the second se	Approximate No. of tests per reagent set/Reagent type			
ling af any set of any	Reagents refrigerated onboard/Reagents ready to use Reagent lot tracking/Reagent inventory			
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bedicate gradient carry is a constrained of the step/or gradient carry i	Uses washable cuvettes/Uses disposable cuvettes Min.–max. sample volume that can be aspirated at one time			
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be seed no no no no no Presses span probe collision no no no no no Presses span probe collision no	Primary tube sampling			
Pieces appring tubes Pieces appring tubes	Accommodates most standard tube sizes/Accepts nonstandard tube sizes	yes/no	yes/no	yes/yes
Didates clock Objes/se Nolves/se Nolves/se Nolves/se Didates clock Periods Hernolysis, interus, lipenia, dots	Pierces caps on primary tubes			
Dillets gather samples obbard/Susceptibility to carryour yes (an be programmed to perform dilutions prior to analysis)yes we analysis)yes in analysisyes we analysis in analysisyes in analysis	Detects against probe collision Detects clots/liquid level/short sample			
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Iow results Iow non-processing decided water supported non-pro-processing decided wat	Automatic rerun capability Sample volume can be diluted to rerun out-of-linear-range high results	-		
Analyzer requires deficited water supply no <	Sample volume can be concentrated to rerun out-of-linear-range	•		-
Autocilization/Multipoint calibration supported acclificants are not stored onboard/yes (recommended au), fequency, res (aki) avg. fequency, res	Analyzer requires dedicated water supply		no	
Typical calibration frequency for ISE/threapeutic drugs/ drugs of base/spin=rank ensitive/spin=rankes stark/latomatic programmable stark/l	Autocalibration/Multipoint calibration supported			yes (calibrants can be stored onboard)/yes (recommended
Automatic programmable stut/during programmable stut/du	Typical calibration frequency for ISE/therapeutic drugs/	4-8 hrs./2 weeks min./when indicated (if QC fails)/		2 hrs. (automatic)/—//avg. 14 days/—
Othoodyes/yesyes/gesyes/gesonWaste managementautomated collection onboard instrument, direct to drainnanually by userdirect to drain or container if no drain availableSample barcode-reading capability/Autodiscriminationyes (interleaved 2 of 5, Codabar, Code 39, Code 128)/yesnononoSample barcode-reading capability/Autodiscriminationyes (interleaved 2 of 5, Codabar, Code 39, Code 128)/yesnononoIstrument can diagnose its own mathuctionsyes (operator intervention required to order parts)yes (operator intervention required to order parts)<	Automatic programmable start/Automatic programmable shutdown		no (5 min. start-up time)/no	yes (5 min. start-up time)/no
Waste managementutomated collection onboard instrument, direct to drainnanually by userdirect to drain or container if no drain availableSample barcode-reading capability/Autodiscrimination lab can contrib analyzer from remote computer instrument can diagnose ifs own maifunctions yes (operator intervention required to order parts) yes (on onboard/CGM LabDa, Schuyler House SchuyLab no/ves (troadcast downioad and host query) no/ves (troadcast downioad and host query) no/ves (troadcast downioad and host query)onboard/CGM LabDa, Ochard, Cerner, Sunquest, Meditech, Schuyler House Novies (troadcast downioad and host query)US interface provided/Edivice capability Modem servicing produced/Swite capability, uncys (troadcast downioad and host query) no/ves (troadcast downioad and host query)	Onboard real-time QC/Onboard software capability to review QC	yes/yes	yes/yes	yes/yes
Lab can control analyzer from remote computernonoinstrument can diagnose its own malfunctionsyes (operator intervention required to order parts)yes (operator intervention required to order parts)yesUPS backup power supplyyesnononoData-management capability/LIS or EHR systems interfacenoboard/CGM LabDaq, Schuyler House SchuyLab, no/ves (troatdactard downlad and host query)no/ves (troatdactardnoData-management capability/LIS or EHR systems interfacenoboard/CGM LabDaq, Schuyler House SchuyLab, no/ves (troatdactard downlad and host query)no/ves (troatdactardno/ves (troatdactardUS interface provided/Sidirectional interface capability Modem servicing provided/Service engineer on-site response timeno/ves (troatdactardno/ves (troatdactardno/ves (troatdactardWarerage scheduled maintenance time by lab personnel Maintenance treord's kept onboard for user/vendor raining demonstration module onboardnono/ves (troatdactardagu; S min, weekly: S min, monthy: S min, weekly: S min, monthy: S min, weekly: S min, monthy: S wee/some records (de tests and calibrations) ves/some records (de tests and calibrations) ves/some records (de tests and calibrations) ves (no actard training demonstration module onboardyes (a customer site) ves/some records (de tests and calibrations) ves (to actard training demonstration module onboardyes (a customer site) ves/some records (de tests and calibrations) ves (no actard training demonstration module onboardyes (a customer site) ves/some records (de tests and calibrations) ves (no actarder training demonstration module onboardyes (a vendor or customer site) ves/some records (de tests and calibr	Waste management	automated collection onboard instrument, direct to drain	·	direct to drain or container if no drain available
Instrument can diagnose its own mailfunctions we (operator intervention required to order parts) yes (operator interventio	Sample barcode-reading capability/Autodiscrimination			
UPS backup power supplyyesnonoData-management capability/LS or EHR systems interfaceonboard/CGM LabDaq, Schuyler House SchuyLab, McKesson Horizon Lab, Medicus Solutions, more no/yes (broadcast download and host query)no/yes (host query)no/yes (host query)no/yes (host query)US interface provided/Service engineer on-site response time Modem servicing provided/Service engineer on-site response time no/24 burinses hrs	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)
Mckesson Horizon Lab, Medicus Solutions, more nolyes (broadcast download and host query) nolyes (broadcast download and host query) howek	System malfunctions can be diagnosed via remote monitoring UPS backup power supply	•	-	-
LLS interface provided/Bidirectional interface capability Modem servicing provided/Service engineer on-site response time no/24 business hrs.no/yes (broadcast download and host query) yes/88 hrs.no/yes (broadcast download and host query) no/24 business hrs.Modem servicing provided/Service engineer on-site response time Mean time between failures— (displays error codes for troubleshooting) daily: 5 min.; moethly: 15 min.; moeth	Data-management capability/LIS or EHR systems interfaced	onboard/CGM LabDaq, Schuyler House SchuyLab,		
Mean time between failures— (displays error codes for troubleshooting) daily: 5 min.; weekly: 5 min.; monthly: 15 min. yes/no no— (displays error codes for troubleshooting) daily: 5 min.; weekly: 5 min.; monthly: 20 min. yes/no no yes (2 training slots)/3 days (at customer site) yes (at customer site)/no yes (at customer site)/no yes (at customer site)/no yes (1 year)/—— (displays error codes for troubleshooting) daily: 5 min.; weekly: 15 min.; monthly: 20 min. yes/no mo yes (2 training slots)/3 days (at customer site) yes (at customer site)/no yes (at customer site)/no yes (1 year)/4— (displays error codes for troubleshooting) daily: 5 min.; weekly: 15 min.; monthly: 20 min. yes/no mo yes (No. of training slots client dependent)/4 hrs. (at customer or vendor site) yes (at customer or vendor site)/yes (client dependent) yes (at customer or vendor site)/yes (client dependent) yes (1 year)/—aug. 250 days (displays error codes for troubleshooting) daily: < 5 min.; monthly: < 30 min. yes (no customer site) no yes (2 training slots)/3 days (at customer site) yes (at customer or vendor site) yes (at customer or vendor site)/yes (client dependent) yes (at customer or vendor site)/yes (client dependent) yes (1 year)/—aug. 250 days (displays error codes for troubleshooting) daily: < 5 min.; monthly: < 30 min. yes (no customer or vendor site)/yes (client dependent) yes (at customer or vendor site)/yes (client dependent)aug. 250 days (displays error codes for troubleshooting) daily: < 5 min.; monthly: < 30 min. yes (no customer or vendor site)/yes (client dependent)Distinguishing features (supplied by company). (cast-efficient benchtop chemistry system for small to mid- size labs • TouchPro software with smart icons guides operator through daily workflow, incl	LIS interface provided/Bidirectional interface capability	no/yes (broadcast download and host query)		no/yes (broadcast download and host query)
Average scheduled maintenance time by lab personnel daily: 5 min.; weekly: 15 min.; monthly: 15 min. daily: 5 min.; weekly: 15 min.; monthly: 20 min. daily: 5 min.; weekly: 5 min.; monthly: 30 min. Maintenance records kept onboard for user/vendor monthly: 20 min. yes/no no Maintenance training demonstration module onboard monthly: 15 min.; monthly: 15 min. daily: 5 min.; weekly: 15 min.; monthly: 20 min. yes (includes audit trail of who replaced parts)/no Advanced operator training/Extra charge for follow-up yes (at customer site)/no yes (at customer site)/no yes (1 year)/\$4,500 (M-F, 8 Am-7 PM) yes (1 year)/\$4,000 (M-				
Maintenance training demonstration module onboard no no no Training included with purchase/Avg. time for basic user training no yes (2 training slots)/3 days (at customer site) no yes (No. of training slots client dependent)/4 hrs. (at customer or vendor site) yes (2.5 days (at vendor or customer site) yes (1.5 days (at vendor or customer site) yes (1.5 days (at vendor or customer site) yes (1.5 days (at vendor or custom	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.
Advanced operator training/Extra charge for follow-up or advanced trainingyes (at customer site)/noyes (at customer or vendor site)yes (at customer or vendor site)yes (at vendor site)/yesWarranty 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 cost saving: low instrument price point with no routine televible, open-channel system capable of running ≤ 40 third-party re	Maintenance training demonstration module onboard	•	no	, , , , , , , , , , , , , , , , , , , ,
Advanced operator training/Extra charge for follow-up or advanced trainingyes (at customer site)/noyes (at customer site)/noyes (at customer site)/yes (client dependent)yes (at vendor site)/yesWarranty 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• 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• full menu of moderately complex drugs of abuse and general chemistry assays; can run up to 55 assays onboard with 420 results/hr.Note: a dash in lieu of an answer means company- arameter (Na+, K+, CI-, CO2) dry electrodes reduce costs and maintenance time, increase reliability of results- ost saving: low instrument price point with no routine consumables required- 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-nat/reagents onboard	Training included with purchase/Avg. time for basic user training	yes (2 training slots)/3 days (at customer site)	, , , , , , , , , , , , , , , , , , ,	yes/2.5 days (at vendor or customer site)
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 • open architecture: program any EIA or CLIA protocol, fully customizable with flexible, intuitive software • full menu of moderately complex drugs of abuse and general chemistry assays; can run up to 55 assays onboard • TouchPro software with smart icons guides operator through daily workflow, including configurable daily checklists • open architecture: program any EIA or CLIA protocol, fully customizable with flexible, intuitive software • no requirement for external water system, no drain or special electrical required; remote diagnostics available for real-time troubleshooting Note: a dash in lieu of an answer means company • other a cash in lieu of an answer means company • full means of truning ≤ 40	Advanced operator training/Extra charge for follow-up	yes (at customer site)/no		yes (at vendor site)/yes
 Distinguishing features (supplied by company) cost-efficient benchtop chemistry system for small to mid- size labs open architecture: program any EIA or CLIA protocol, fully customizable with flexible, intuitive software open architecture: program any EIA or CLIA protocol, fully customizable with flexible, intuitive software open architecture: program any EIA or CLIA protocol, fully customizable with flexible, intuitive software open architecture: program any EIA or CLIA protocol, fully customizable with flexible, intuitive software 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 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 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 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 ost saving: low instrument price point with no routine consumables required oth 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-nactv reagents compared 	or advanced training Warranty provided/Cost of annual service contract (24 h/7 d)	ves (1 vear)/\$4.500 (М-F. 8 ам-7 рм)	ves (1 vear)/	ves (1 year)/—
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 <i>Note: a dash in lieu of an answer means company</i>	Distinguishing features (supplied by company)			
daily workflow, including configurable daily checklistsfootprint• no requirement for external water system, no drain or special electrical required; remote diagnostics available for consumables requiredNote: a dash in lieu of an answer means company• Note: a dash in lieu of an answer means company• no requirement for external water system, no drain or special electrical required; remote diagnostics available for real-time troubleshooting		size labs	customizable with flexible, intuitive software	
• 4-parameter (Na+, K+, Cl-, CO2) dry electrodes reduce costs and maintenance time, increase reliability of results <i>Note: a dash in lieu of an answer means company</i>		daily workflow, including configurable daily checklists	footprint	 no requirement for external water system, no drain or
Note: a dash in lieu of an answer means company		 4-parameter (Na+, K+, Cl-, CO2) dry electrodes reduce costs 		real-time troubleshooting
	Note: a dash in lieu of an answer means company			• flexible, open-channel system capable of running ≤ 40
	did not answer question or question is not applicable			

CHEMISTRY AND IMMUNOASSAY ANALYZERS

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			JUNE 2022 TOAT TODAT JI
Part 4 of 6	HYCOR Biomedical Erik van Megen marketingdept@hycorbiomedical.com	Nova Biomedical info@novabio.com	Ortho Clinical Diagnostics Laura Osborne laura.osborne@orthoclinicaldiagnostics.com
FOR POINT-OF-CARE AND LOW-VOLUME LABORATORIES	Garden Grove, CA 800-382-2527 www.hycorbiomedical.com	Waltham, MA 800-458-5813 www.novabiomedical.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 List price/First year sold in U.S.	batch/benchtop \$55,000/1999	random access/benchtop —/2018	batch, random access, continuous random access, discrete/ floor standing —/2019
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)	200/variable yes (also sold by distribution partners) > 100/> 200 (Canada, Europe, Middle East, South America)	— yes (also sold by distribution partners) Stat Profile Prime CCS, Stat Profile Prime, Stat Profile Prime ES —	—/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 ($H \times W \times D$)/Instrument footprint Weight empty/Weight fully loaded No. of different measured assays onboard simultaneously No. of user-definable (open chemistry) channels	$29.5 \times 42.5 \times 27.5$ in./8 sq. ft. 198 lbs./198 lbs. up to 288 (up to 288 can be run and calibrated at one time) 3	$18 \times 14 \times 16$ 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)	$53 \times 58 \times 34$ in./ 1,150 lbs./ 89 (89 can be run and calibrated at one time)
Test throughput per hour/Assay run time Chemistry: No. of direct ion-selective electrode channels	48 (288 tests in throughput)/6 hrs.	up to 38 (760 tests in throughput)/avg. 60 sec.	1,130/2.5–9 min. (avg. 5 min.) 3
Detection methods	_	, photometry, potentiometry, Severinghaus, amperometry, conductivity, enzyme	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	no		
Methodologies supported Separation methodologies	enzyme immunoassay	_	_
Stat time until completion of a B-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 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	20 or 10/self-contained multiuse no/yes yes/no liquid chemistry (open reagent system)/no no/yes	100, 200, 300, 400, or 500/self-contained multiuse no/yes yes/yes liquid chemistry (closed reagent system)/yes no/no	18–120/self-contained single use yes (10°C)/yes yes/yes dry chemistry (closed reagent system)/yes no/no
Walkaway capability/Walkaway duration Design of sample-handling system	yes/288 tests/assays rack	yes/1 min. or 1 specimen or 20 tests/assays probe	yes/— universal sample tray, continuous load and unload, circular
Uses washable cuvettes/Uses disposable cuvettes Minmax. sample volume that can be aspirated at one time Min. reaction volume/Min. specimen volume/Min. dead volume Dedicated pediatric sample cup	no/yes (can store up to 288 cuvettes) 50 μL maximum 10 μL/50 μL/100 μL no	no/yes 135 μL 135 μL/135 μL/ no	routine sample center no/no 2–200 μL /2.5 μL/35 μL yes (dead volume: 35 μL)
Primary tube sampling Accommodates most standard tube sizes/Accepts nonstandard tube sizes Pierces caps on primary tubes	no yes/no no	yes yes/yes no	yes yes/yes (micro sample cups, micro collection containers, 10.25×45 mm, 12×75 mm, 12×100 mm, 13×75 mm, more) no
Protects against probe collision Detects clots/liquid level/short sample Detection or quantitation for hemolysis, icterus, lipemia, clots	no no/no/yes hemolysis, icterus, lipemia, clots not available	yes yes/yes/yes detection for hemolysis, icterus, lipemia, clots	yes yes/yes/yes detection for clots; detection and quantitation for hemolysis, icterus, lipemia
Dilutes patient samples onboard/Susceptibility to carryover Automatic rerun capability	yes (can be programmed to perform dilutions prior to analysis)/< 1 part per 10,000 no	no/	yes/0 yes
Sample volume can be concentrated to rerun out-of-linear-range low results	no no	no no	yes yes
Analyzer requires dedicated water supply Autocalibration/Multipoint calibration supported Typical calibration frequency for ISE/therapeutic drugs/	no yes (calibrants are not stored onboard)/yes (recommended avg. frequency: monthly) —/—/—/—/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) 6 months/6 months/6 months/6 months or lot change for
drugs of abuse/general chemistries/immunoassays Automatic programmable start/Automatic programmable shutdown Onboard real-time QC/Onboard software capability to review QC	no/yes yes/no	yes (5 min. avg. start-up time)/yes yes/yes	most chemistry assays/ no/no yes/yes
Supports multiple QC lot numbers per analyte Waste management	yes manually by user	yes automated collection onboard instrument	yes manually by user
Sample barcode-reading capability/Autodiscrimination Lab can control analyzer from remote computer	yes (Codabar, Code 39)/ yes	yes (Interleaved 2 of 5, UPC, Codabar, Code 39, Code 128)/yes yes	yes (Interleaved 2 of 5, UPC, Codabar, Code 39, Code 128, ISBT 128)/yes no
Instrument can diagnose its own malfunctions System malfunctions can be diagnosed via remote monitoring UPS backup power supply	yes (operator intervention required to order parts) no yes	yes (operator intervention required to order parts) yes no	yes (operator intervention required to order parts) yes yes
Data-management capability/LIS or EHR systems interfaced LIS interface provided/Bidirectional interface capability	onboard/— yes (additional cost)/yes (host query)	onboard, optional add-on (NovaNet, more)/— yes (included in instrument price)/yes (broadcast download and host query)	onboard/— yes (included in instrument price)/yes (broadcast download and host query)
Modem servicing provided/Service engineer on-site response time Mean time between failures Average scheduled maintenance time by lab personnel Maintenance records kept onboard for user/vendor	no/within 48 hrs. 210 days (displays error codes for troubleshooting) daily: 10–15 min.; weekly: 20–25 min.; monthly: 20–25 min. yes/no	no/within 8 hrs. — (displays error codes for troubleshooting) weekly: 5 min.; monthly: 30 min. yes (includes audit trail of who replaced parts)/yes (includes audit trail of who replaced parts)	yes/4 hrs. — (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) Distinguishing features (supplied by company)	• menu	 yes (5 years)/— maintenance-free MicroSensor Card and disposable cartridge 	 ves (1 year)/— incorporates digital reflectometry to process two unique
Note: a dash in lieu of an answer means company did not answer question or question is not applicable	ease of usequality of results	 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 	 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
		components during calibration, sample analysis, QC analysis	

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CHEMISTRY AND IMMUNOASSAY ANALYZERS

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

CHEMISTRY AND IMMUNOASSAY ANALYZERS

Part of biological and provide the		Tosoh Bioscience
Dev/VOLUME LABORATORIES 990-24-8754 www.idegnotics.us.toorbiocolnot.com Name of instrument MA-260 Immunoassey MA-260 Immunoassey Operational type Model type MA-260 Immunoassey Common Immunoassey Departional type Model type MA-260 Immunoassey Common Immunoassey Common Immunoassey Departional type Model type Immunoasse Order Transport Tope of Immunoasse I		Karen Wrona karen.wrona@tosoh.com
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		compact size, broad menu with fast results

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

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