Laboratory automation systems and workcells

Part 1 of 13

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Name of system/First year installed/No. of 2010 contracts signed	Accelerator APS/2005/—	PathFinder 350S/2008/28
No. of live sites installed in N. America/Europe/Asia-Australia	20+/70+ (includes Europe, Middle East, Africa, and India)/5+	8 (North and South America)/6/6
Automation products that are available		
• Pre-analytical processor/Total laboratory automation	yes/yes	yes/no
• Automated functions: Accessioning/Track load/Centrifugation/Decapping	yes/yes/yes/yes	yes/yes/no/yes
• Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing	yes/no/no/yes	yes/yes/yes/yes
• Automated functions: Storage-retrieval/Intelligent sample routing	yes/yes	no/yes
• SW: Dedicated Process Control/Middleware control using LIS/Architecture	yes/yes/open	no/no/open
• Company has dedicated automation support team/Remote sys. monitoring	yes/yes	yes/yes
Software features/functionality		
• Patient demographics and insurance data/Rules-based architecture	automation SW feature/automation SW feature	—
• Supports data retrieval/Internet connectivity	automation SW feature/automation SW feature	—/automation SW feature
• Online real-time help system/QC/Stats and management reports	automation SW feature/automation SW feature/automation SW feature	—/—/automation SW feature
• Evaluates validity and releasability of results from automated analyzers	automation SW feature	LIS feature
• Specimen tracking/Priority processing/Random-access spec. movement	automation SW feature/automation SW feature/automation SW feature	automation SW feature/automation SW feature/—
• Supports accession number redundancy (duplicate specimen ID)	automation SW feature	automation SW feature
• Supports specimen carrier and level identification	automation SW feature	automation SW feature
• Unique bar-code number per container required	automation SW feature	—
• Specimen routing/Multistop routing (one tube to multiple workstations)	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Specimen scheduling/Instrument scheduling	automation SW feature/automation SW feature	—
• Routes test to workstation/Automatic reflex, repeat, dilutions	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Supports multiple HW configuration/Supports other proprietary transport. HW	automation SW feature/automation SW feature	automation SW feature/—
• Sample storage and retrieval SW/Supports approved CLSI standards	automation SW feature/automation SW feature	LIS feature/automation SW feature
LIS(s) and versions interfaced and live w/LAS/How LIS(s) are interfaced with your LAS	Cerner Classic, Cerner Millennium, Cortex, Delphic, Dianoema, GE Ultra, GLMIS by MIPS, Lab Track, Medisolution by Technidata, Meditech 5.4, Misys, Misys CPR (Cloverleaf Engine), Misys Smart, ModulabGold (Izasa), OSM, Roche Omega, SCS, Siemens, Soft/HL7, ASTM	Instrument Manager, Ultra, Apollo, Kestral, others/ASTM, CLSI-LIS2A
Transportation systems available	yes	no
• Model/Dimensions* (H × W × D)*/Conforms to CLSI Stand. Auto 1-5	APS track section/40.2 × variable × 17.0 in./yes	—
• Containers device accommodates/Average throughput in cm per second	16, 13 × 100; 16, 13 × 75, others, multiple types simultaneously/13	—
• Supports automatic rerouting for reflex-repeat-dilutions	yes	—
• Modular HW/Installed options/Device can operate in track and manual mode	yes/floor mounted/yes	—
• Required utilities/Required maintenance	compressed air, electricity, water/—	—
• Carrier type/Scalable system	single specimen container per carrier/yes	—
Automated centrifugation available	yes	no
• Model/Dimensions (H × W × D)/Conforms to CLSI Stand. Auto 1-5	Hettich/58.5 × 32 × 42 in./yes	—
• Maximum throughput/Containers device accommodates	up to 320/16, 13×100; 16, 13×75, others, multiple types simultaneously	—
• Can identify tube types for custom programmed rate and spin times per run	no	—
• More than one centrifuge can be connected to track system	yes	—
• For multi-unit centrifuge, each centrifuge operates independently for rate and time	no	—
• Maintenance required	weekly, monthly	—
Automated input/accessioning available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	input-output module/54.3 × 77.6 × 39.6 inches/yes/up to 600	PathFinder 350S/98 × 40 × 52 cm (39 × 16 × 21 inches)/yes/350 tubes per hour
• Containers device accommodates/Dedicated lanes for stat samples	16, 13 × 100; 16, 13 × 75, others, multiple types simultaneously/yes	16, 13 × 100; 16, 13 × 75/yes
• Maximum No. of samples that can be loaded/Maintenance required	744/weekly, monthly	flexible/annually
Automated decapping available	yes	no
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	decapper module/46.7 × 34.7 × 17 inches/yes/up to 600	—
• Containers device accommodates/Maintenance required	16, 13 × 100; 16, 13 × 75, others, multiple types simultaneously/daily, weekly	—
• Removes multiple size tube caps per run/Removes screw type sample caps	yes/yes	—
Automated sorting available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	input output module/54.3 × 77.6 × 39.6 inches/yes/up to 600	PathFinder 350S/98 × 40 × 52 cm (39 × 16 × 21 inches)/yes/350 tubes per hour
• Containers device accommodates/Software can sort by	16, 13 × 100; 16, 13 × 75, others, mult. types simult./specimen, method, ouput	16, 13 × 100; 16, 13 × 75/specimen, method, output
Specimen integrity monitor available	no	no
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	—	—
• Containers device accommodates/Maintenance required	—	—
Automated aliquotting available	no	no
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	—	—
• Containers device accommodates	—	—
• Inspects samples for bar code/Detects and reports clots in specimen	—	—
• Detects and reports quantity not sufficient specimens/Maintenance required	—	—
Instrument (analyzer) interfaces		
• Rules-based instrument interface control subsystem	yes	no
• Process control of instrument via control subsystem	yes	no
Physical/hardware (instrument/specimen) interface		
• Hematology/Chemistry/Coagulation	no/point-of-reference sampling/no	—
• Immunoassay/Urinalysis	point-of-reference sampling/no	—
Instruments to which your system or product is interfaced	Architect c8000, c16000, i2000SR, Ortho Fusion 5.1, Diasorin Liaison (ex-US only)	—
Other robotic products/components to which system or product is linked	—	—
Automated recapper or sealer available	sealer	no
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	resealer module/49.2 × 44.9 × 17 inches/yes/up to 600	—
• Recaps-seals multiple size tubes simult./Containers device accommodates	yes/16, 13 × 100; 16, 13 × 75, others	—
• Maintenance required	monthly	—
Automated storage and retrieval available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	tube storage module/95 × 89.2 × 70 inches/yes/up to 600	PathFinder 350S/52 × 98 × 40 cm/yes/350+
• Containers device accommodates/Connects to the track	16, 13 × 100; 16, 13 × 75, others, multiple types simultaneously/yes	16, 13 × 100; 16, 13 × 75/yes
• Room temperature/Minimum and maximum number of tubes stored per module	no/0 and 15,360	yes/250
• Multiple size tubes can be stored in the same module/Maintenance required	yes/daily, monthly	yes/weekly, six months
• Refrigerated storage and retrieval capability	yes	no
Longitudinal upgrade pathway or plan to protect users' investments	modular open architecture	ability to network multiple instruments
Average time to install/Who provides service, support/Hours support is available	depends on configuration/Abbott Diagnostics/business and extended hours	1 day/distributor/—
On-site biomedical engineer required/User group meets regularly	yes/yes	no/no
List price	varies by configuration	$A62,000
Individual list prices for components		
• Process control SW/Transportation systems/Auto. centrifugation	—	included/—/—
• Auto. input, accession/Auto. decap/Auto. sort/Auto. storage and retrieval	—	included/—/included/—
• Specimen integrity monitor/Automated aliquot	—	—
• Instrument (analyzer) interfaces/Automated recap	—	—
Distinguishing features (supplied by company)	flexibility: configurable, component-based design; functionality: refrigerated online storage and multiple tube types simultaneously, RFID, point-in-space sampling; support: Lean Six Sigma Black Belt consultants; configurable laboratory automation and middleware solutions	benchtop sorting at an affordable price; ability to change deck layout in one minute; flexible input and output positions

** For basic bulding block unit*

*** Average throughput in specimen containers per hour per device*

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

Survey editor: Raymond D. Aller, MD

Laboratory automation systems and workcells

Part 2 of 13	**Aim Lab (formerly Ai Scientific)** **Ralph Donaldson** sales@aimlab.com **10-22 Hornibrook Esplanade, Clontarf, QL, Australia 4035** **+61 7 3105 5005** www.aimlab.com	**Beckman Coulter** **Mike Hoang** mbhoang@beckman.com **200 S. Kraemer Blvd., Brea, CA 92822** **714-961-6385** www.beckmancoulter.com
Name of system/First year installed/No. of 2010 contracts signed	**PathFinder 900/2008/7**	**AutoMate 800/2006/21**
No. of live sites installed in N. America/Europe/Asia-Australia	**0/9/7**	**21/95/10**
Automation products that are available		
• Pre-analytical processor/Total laboratory automation	yes/no	yes/no
• Automated functions: Accessioning/Track load/Centrifugation/Decapping	yes/yes/no/yes	yes/no/yes/yes
• Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing	yes/yes/yes/yes	yes/yes/yes/no
• Automated functions: Storage-retrieval/Intelligent sample routing	no/yes	yes/yes
• SW: Dedicated Process Control/Middleware control using LIS/Architecture	no/no/open	yes/no/open
• Company has dedicated automation support team/Remote sys. monitoring	yes/yes	yes/—
Software features/functionality		
• Patient demographics and insurance data/Rules-based architecture	—/LIS feature	LIS feature/automation SW feature
• Supports data retrieval/Internet connectivity	automation SW feature/automation SW feature	LIS feature/—
• Online real-time help system/QC/Stats and management reports	automation SW feature/—/automation SW feature	automation SW feature/LIS feature/automation SW feature
• Evaluates validity and releasability of results from automated analyzers	LIS feature	LIS feature
• Specimen tracking/Priority processing/Random-access spec. movement	automation SW feature/automation SW feature/automation SW feature	automation SW feature/automation SW feature/automation SW feature
• Supports accession number redundancy (duplicate specimen ID)	automation SW feature	automation SW feature
• Supports specimen carrier and level identification	automation SW feature	automation SW feature
• Unique bar-code number per container required	—	automation SW feature
• Specimen routing/Multistop routing (one tube to multiple workstations)	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Specimen scheduling/Instrument scheduling	LIS feature/LIS feature	automation SW feature/—
• Routes test to workstation/Automatic reflex, repeat, dilutions	LIS feature/LIS feature	automation SW feature/—
• Supports multiple HW configuration/Supports other proprietary transport. HW	automation SW feature/—	automation SW feature/—
• Sample storage and retrieval SW/Supports approved CLSI standards	LIS feature/automation SW feature	automation SW feature/automation SW feature
LIS(s) and versions interfaced and live w/LAS/How LIS(s) are interfaced with your LAS	**Instrument Manager, Ultra, Kestral, Apollo, others//ASTM, CLSI-LIS2A**	**SCC, Siemens, Philips/ASTM, Power Processor**
Transportation systems available	**no**	**no**
• Model/Dimensions* (H × W × D)*/Conforms to CLSI Stand. Auto 1-5	—	—
• Containers device accommodates/Average throughput in cm per second	—	—
• Supports automatic rerouting for reflex-repeat-dilutions	—	—
• Modular HW/Installed options/Device can operate in track and manual mode	—	—
• Required utilities/Required maintenance	—	—
• Carrier type/Scalable system	—	—
Automated centrifugation available	**no**	**yes**
• Model/Dimensions (H × W × D)/Conforms to CLSI Stand. Auto 1-5	—	AutoMate 800/—/yes
• Maximum throughput/Containers device accommodates	—	300/16, 13 × 100; 16, 13 × 75, Sarstedt, Greiner, BD pediatric tubes
• Can identify tube types for custom programmed rate and spin times per run	—	no
• More than one centrifuge can be connected to track system	—	no
• For multi-unit centrifuge, each centrifuge operates independently for rate and time	—	no
• Maintenance required	—	daily
Automated input/accessioning available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	PathFinder 900 module/1.7 × 2.5 × 1.4 m/yes/350 tubes per hour	AutoMate 800/—/yes/420
• Containers device accommodates/Dedicated lanes for stat samples	16, 13 × 100; 16, 13 × 75/yes	16, 13 × 100; 16, 13 × 75, Sarstedt, Greiner, BD pediatric tubes/yes
• Maximum No. of samples that can be loaded/Maintenance required	up to 250/quarterly	600/daily, monthly
Automated decapping available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	PathFinder 900 module/1.7 × 2.5 × 1.4 m/yes/>500 tubes per hour	AutoMate 800/—/yes/420
• Containers device accommodates/Maintenance required	16, 13 × 100; 16, 13 × 75/weekly, monthly, annually	16, 13 × 100; 16, 13 × 75, Sarstedt, Greiner, BD pediatric/daily, monthly
• Removes multiple size tube caps per run/Removes screw type sample caps	yes/yes	yes/yes
Automated sorting available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	PathFinder 900 module/1.7 × 2.5 × 1.4 m/yes/350 tubes per hour	AutoMate 800/—/yes/420
• Containers device accommodates/Software can sort by	16, 13 × 100; 16, 13 × 75/specimen, method, output	16, 13 × 100; 16, 13 × 75, Sarstedt, Greiner, BD pediatric/method, output
Specimen integrity monitor available	**no**	**no**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	—	—
• Containers device accommodates/Maintenance required	—	—
Automated aliquotting available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	PathFinder 900 module/1.7 × 2.5 × 1.4 m/yes/>500 tubes per hour	AutoMate 800/—/yes/420
• Containers device accommodates	16, 13 × 100; 16, 13 × 75	16, 13 × 100; 16, 13 × 75, Sarstedt
• Inspects samples for bar code/Detects and reports clots in specimen	yes/yes	yes/yes
• Detects and reports quantity not sufficient specimens/Maintenance required	yes/weekly, monthly, annually	yes/daily, monthly
Instrument (analyzer) interfaces		
• Rules-based instrument interface control subsystem	no	no
• Process control of instrument via control subsystem	no	no
Physical/hardware (instrument/specimen) interface		
• Hematology/Chemistry/Coagulation	no/no/no	—
• Immunoassay/Urinalysis	no/no	—
Instruments to which your system or product is interfaced	**none**	—
Other robotic products/components to which system or product is linked	—	—
Automated recapper or sealer available	**yes**	**no**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	PathFinder 900 module/1.7 × 2.5 × 1.4 m/yes/>600 tubes per hour	—
• Recaps-seals multiple size tubes simult./Containers device accommodates	no/16, 13 × 100; 16, 13 × 75	—
• Maintenance required	daily, monthly, annually	—
Automated storage and retrieval available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	PathFinder 900/1.7 × 2.5 × 1.4 m/yes/900+	AutoMate 800/—/yes/420
• Containers device accommodates/Connects to the track	16, 13 × 100; 16, 13 × 75/yes	16, 13 × 100; 16, 13 × 75, Sarstedt, Greiner, BD pediatric tubes/no
• Room temperature/Minimum and maximum number of tubes stored per module	no/1,000 in standard format	yes/1 and 400
• Multiple size tubes can be stored in the same module/Maintenance required	yes/weekly, monthly, annually	yes/daily, monthly
• Refrigerated storage and retrieval capability	no	no
Longitudinal upgrade pathway or plan to protect users' investments	**ability to network multiple PathFinders**	—
Average time to install/Who provides service, support/Hours support is available	**3 weeks/GST and distributor/24–7**	**7 days/Beckman Coulter/24–7**
On-site biomedical engineer required/User group meets regularly	**no/no**	**no/no**
List price	**$A420,000 (fully optioned system)**	—
Individual list prices for components		
• Process control SW/Transportation systems/Auto. centrifugation	included/included/—	—
• Auto. input, accession/Auto. decap/Auto. sort/Auto. storage and retrieval	included/included/included/—	—
• Specimen integrity monitor/Automated aliquot	—/included	—
• Instrument (analyzer) interfaces/Automated recap	—/included	—
Distinguishing features (supplied by company)	**ability to change deck layout in five minutes; ability to recap primary tubes with original cap to preserve tube-type identity; dual track for parallel processing of samples leading to high overall throughput (that is, output tubes)**	**automatic rack layout can be reconfigured with another rack style; intelligent aliquotting; sample storage routing by duration and temperature**

** For basic bulding block unit*
*** Average throughput in specimen containers per hour per device*
Note: a dash in lieu of an answer means company did not answer question or question is not applicable

Tabulation does not represent an endorsement by the College of American Pathologists.

Laboratory automation systems and workcells

Part 3 of 13	**Beckman Coulter** **Petra Westerteicher** pwesterteicher@beckman.com **200 S. Kraemer Blvd., Brea, CA 92822** **714-961-6385** www.beckmancoulter.com	**Beckman Coulter** **Mike Hoang** mbhoang@beckman.com **200 S. Kraemer Blvd., Brea, CA 92822** **714-961-6385** www.beckmancoulter.com
Name of system/First year installed/No. of 2010 contracts signed	**AutoMate 2500 Family/2003/85**	**LH 1500 Hematology Automation Series/2002/6**
No. of live sites installed in N. America/Europe/Asia-Australia	**65/360/30**	**100/16/20**
Automation products that are available		
• Pre-analytical processor/Total laboratory automation	yes/no	yes/yes
• Automated functions: Accessioning/Track load/Centrifugation/Decapping	yes/no/no/yes	yes/yes/no/no
• Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing	yes/yes/yes/yes	yes/no/no/no
• Automated functions: Storage-retrieval/Intelligent sample routing	no/yes	yes/yes
• SW: Dedicated Process Control/Middleware control using LIS/Architecture	yes/yes/open	yes/yes/open
• Company has dedicated automation support team/Remote sys. monitoring	yes/yes	yes/yes
Software features/functionality		
• Patient demographics and insurance data/Rules-based architecture	LIS feature/automation SW feature	—
• Supports data retrieval/Internet connectivity	automation SW feature/—	automation SW feature/—
• Online real-time help system/QC/Stats and management reports	—/—/automation SW feature	automation SW feature/LIS feature/—
• Evaluates validity and releasability of results from automated analyzers	—	—
• Specimen tracking/Priority processing/Random-access spec. movement	automation SW feature/automation SW feature/automation SW feature	automation SW feature/automation SW feature/automation SW feature
• Supports accession number redundancy (duplicate specimen ID)	automation SW feature	—
• Supports specimen carrier and level identification	automation SW feature	—
• Unique bar-code number per container required	—	automation SW feature
• Specimen routing/Multistop routing (one tube to multiple workstations)	automation SW feature/automation SW feature	automation SW feature/ automation SW feature
• Specimen scheduling/Instrument scheduling	automation SW feature/—	automation SW feature/ automation SW feature
• Routes test to workstation/Automatic reflex, repeat, dilutions	—/—	automation SW feature/ automation SW feature
• Supports multiple HW configuration/Supports other proprietary transport. HW	automation SW feature/—	automation SW feature/—
• Sample storage and retrieval SW/Supports approved CLSI standards	automation SW feature/automation SW feature	automation SW feature/ automation SW feature
LIS(s) and versions interfaced and live w/LAS/How LIS(s) are interfaced with your LAS	**Cerner, Misys, Modulus, Data Innovations, SCC, Atlas, McKesson/HL7, ASTM**	**Cerner, Sunquest, SCC, Meditech, others/LH 1500**
Transportation systems available	**no**	**yes**
• Model/Dimensions* (H × W × D)*/Conforms to CLSI Stand. Auto 1-5	—	—/—/yes
• Containers device accommodates/Average throughput in cm per second	—	13 × 75/—
• Supports automatic rerouting for reflex-repeat-dilutions	—	yes
• Modular HW/Installed options/Device can operate in track and manual mode	—	yes/floor mounted/yes
• Required utilities/Required maintenance	—	compressed air, electricity/monthly
• Carrier type/Scalable system	—	single specimen container per carrier/yes
Automated centrifugation available	**no**	**no**
• Model/Dimensions (H × W × D)/Conforms to CLSI Stand. Auto 1-5	—	—
• Maximum throughput/Containers device accommodates	—	—
• Can identify tube types for custom programmed rate and spin times per run	—	—
• More than one centrifuge can be connected to track system	—	—
• For multi-unit centrifuge, each centrifuge operates independently for rate and time	—	—
• Maintenance required	—	—
Automated input/accessioning available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	AutoMate 2500 Family units/64 × 73 × 53 inches/yes/1,200	—
• Containers device accommodates/Dedicated lanes for stat samples	16, 13 × 100; 16, 13 × 75; diameter: 10.5–17.0 mm; length: 70–100 mm/yes	13 × 75/yes
• Maximum No. of samples that can be loaded/Maintenance required	300, continuously/—	200/monthly
Automated decapping available	**yes**	**no**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	AutoMate 2500 Family units/64 × 73 × 53 inches/yes/1,200	—
• Containers device accommodates/Maintenance required	16, 13 × 100; 16, 13 × 75; diameter: 10.5–17.0 mm; length: 70–100 mm/—	—
• Removes multiple size tube caps per run/Removes screw type sample caps	yes/yes	—
Automated sorting available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	AutoMate 2500 Family units/64 × 73 × 53 inches/yes/1,200	—/—/yes/425
• Containers device accommodates/Software can sort by	16, 13×100; 16, 13×75; others/specimen, method, output	13 × 75/method
Specimen integrity monitor available	**no**	**no**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	—	—
• Containers device accommodates/Maintenance required	—	—
Automated aliquotting available	**yes**	**no**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	AutoMate 1250, 2550/64 × 101 × 53 in/yes/600	—
• Containers device accommodates	16, 13 × 100; 16, 13 × 75, secondary tubes 13 × 75	—
• Inspects samples for bar code/Detects and reports clots in specimen	yes/yes	—
• Detects and reports quantity not sufficient specimens/Maintenance required	yes/daily	—
Instrument (analyzer) interfaces		
• Rules-based instrument interface control subsystem	no	no
• Process control of instrument via control subsystem	no	yes
Physical/hardware (instrument/specimen) interface		
• Hematology/Chemistry/Coagulation	no/no/no	robotic arm interface/—/—
• Immunoassay/Urinalysis	no/no	—
Instruments to which your system or product is interfaced	—	LH 750, 755 and LH 780, 785
Other robotic products/components to which system or product is linked	—	—
Automated recapper or sealer available	**sealer**	**no**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	all AutoMate 2500 Family units/—/yes/1,200	—
• Recaps-seals multiple size tubes simult./Containers device accommodates	yes/16, 13 × 100; 16, 13 × 75	—
• Maintenance required	daily	—
Automated storage and retrieval available	**—**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	—	—/—/yes/340
• Containers device accommodates/Connects to the track	—	13 × 75/yes
• Room temperature/Minimum and maximum number of tubes stored per module	—	yes/1,000
• Multiple size tubes can be stored in the same module/Maintenance required	—	no/weekly, monthly
• Refrigerated storage and retrieval capability	—	—
Longitudinal upgrade pathway or plan to protect users' investments	—	expandable, as the lab grows
Average time to install/Who provides service, support/Hours support is available	**1 week/Beckman Coulter/24–7**	**7–21 days/Beckman Coulter/24–7**
On-site biomedical engineer required/User group meets regularly	**no/no**	**no/yes**
List price	**$290,000–$460,000**	**varies by configuration**
Individual list prices for components		
• Process control SW/Transportation systems/Auto. centrifugation	—	—
• Auto. input, accession/Auto. decap/Auto. sort/Auto. storage and retrieval	—	—
• Specimen integrity monitor/Automated aliquot	—	—
• Instrument (analyzer) interfaces/Automated recap	—	—
Distinguishing features (supplied by company)	**high speed, cost efficient way to automate pre- and postanalytical steps; improves patient safety and lab efficiency through use of the tube inspection unit to ensure the correct label is on the sample and that enough sample volume is available; allows direct sorting to most analyzers' racks**	**automatic hands-off rerun and reflex test from the stockyard to the analyzers; sorting of pending samples for secondary tests by test; automatically loads analyzers and is expandable**

** For basic bulding block unit*
*** Average throughput in specimen containers per hour per device*
Note: a dash in lieu of an answer means company did not answer question or question is not applicable

Laboratory automation systems and workcells

Part 4 of 13	**Beckman Coulter** **Mike Hoang** mbhoang@beckman.com **200 S. Kraemer Blvd., Brea, CA 92822** **714-961-6385** www.beckmancoulter.com	**Integrated Laboratory Automation Solutions** **William Neeley, MD** wneeleymd@lab-ilas.com **1237 Chicago Rd., Troy, MI 48083** **866-825-3477** www.lab-ilas.com
Name of system/First year installed/No. of 2010 contracts signed	**Power Processor/1998/38**	**The Efficiency Series/2003/1**
No. of live sites installed in N. America/Europe/Asia-Australia	**392/116/116**	**3/—/—**
Automation products that are available		
• Pre-analytical processor/Total laboratory automation	**yes/yes**	**yes/yes**
• Automated functions: Accessioning/Track load/Centrifugation/Decapping	**yes/yes/yes/yes**	**yes/yes/yes/yes**
• Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing	**yes/yes/yes/yes**	**yes/yes/yes/yes**
• Automated functions: Storage-retrieval/Intelligent sample routing	**yes/yes**	**yes/yes**
• SW: Dedicated Process Control/Middleware control using LIS/Architecture	**yes/yes/open**	**yes/yes/open**
• Company has dedicated automation support team/Remote sys. monitoring	**yes/yes**	**yes/yes**
Software features/functionality		
• Patient demographics and insurance data/Rules-based architecture	**LIS feature/auto SW feature**	**LIS feature/automation SW and LIS feature**
• Supports data retrieval/Internet connectivity	**automation SW feature/automation SW feature**	**automation SW feature/automation SW feature**
• Online real-time help system/QC/Stats and management reports	**automation SW feature/automation SW feature/automation SW feature**	**automation SW feature/LIS feature/automation SW feature**
• Evaluates validity and releasability of results from automated analyzers	**automation SW feature**	**automation SW feature**
• Specimen tracking/Priority processing/Random-access spec. movement	**automation SW feature/automation SW feature/automation SW feature**	**automation SW feature/automation SW feature/automation SW feature**
• Supports accession number redundancy (duplicate specimen ID)	**—**	**automation SW feature**
• Supports specimen carrier and level identification	**automation SW feature**	**automation SW feature**
• Unique bar-code number per container required	**automation SW feature**	**automation SW and LIS feature**
• Specimen routing/Multistop routing (one tube to multiple workstations)	**automation SW feature/automation SW feature**	**automation SW feature/automation SW feature**
• Specimen scheduling/Instrument scheduling	**automation SW feature/automation SW feature**	**automation SW feature/automation SW feature**
• Routes test to workstation/Automatic reflex, repeat, dilutions	**automation SW feature/automation SW feature**	**automation SW feature/automation SW feature**
• Supports multiple HW configuration/Supports other proprietary transport. HW	**automation SW feature/—**	**automation SW feature/automation SW feature**
• Sample storage and retrieval SW/Supports approved CLSI standards	**automation SW feature/automation SW feature**	**automation SW feature/automation SW feature**
LIS(s) and versions interfaced and live w/LAS/How LIS(s) are interfaced with your LAS	**SCC, Siemens, Philips, Misys, Cerner, McKesson, GE, Meditech, PerSe, Molis, MIPS, Vista, Swiss Lab/Power Processor, Direct, HL7**	**Misys (Smart)/direct LIS**
Transportation systems available	**yes**	**yes**
• Model/Dimensions* (H × W × D)*/Conforms to CLSI Stand. Auto 1-5	**Power Processor II/—/yes**	**The Efficiency Series/varies with instrument size/yes**
• Containers device accommodates/Average throughput in cm per second	**16, 13 × 100; 16, 13 × 75, Sarstedt/—**	**16, 13 × 100; 16, 13 × 75/2,300 tubes per hour with single loading module**
• Supports automatic rerouting for reflex-repeat-dilutions	**yes**	**yes**
• Modular HW/Installed options/Device can operate in track and manual mode	**yes/floor and subfloor mounted/yes**	**yes/floor mounted, overhead mounted, subfloor mounted/yes**
• Required utilities/Required maintenance	**compressed air, electricity/monthly**	**compressed air, electricity/bimonthly**
• Carrier type/Scalable system	**single specimen container per carrier/yes**	**single specimen container per carrier/yes**
Automated centrifugation available	**yes**	**yes**
• Model/Dimensions (H × W × D)/Conforms to CLSI Stand. Auto 1-5	**Power Processor II/—/yes**	**Hettich Robotic/84 × 50 × 63 inches/yes**
• Maximum throughput/Containers device accommodates	**300–450/16, 13 × 100; 16, 13 × 75, Sarstedt**	**280/16, 13 × 100; 16, 13 × 75**
• Can identify tube types for custom programmed rate and spin times per run	**no**	**yes**
• More than one centrifuge can be connected to track system	**yes**	**yes**
• For multi-unit centrifuge, each centrifuge operates independently for rate and time	**yes**	**yes**
• Maintenance required	**weekly**	**bimonthly**
Automated input/accessioning available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**Power Processor II/—/yes/900**	**The Efficiency Series/can be customized/yes/800 per hour**
• Containers device accommodates/Dedicated lanes for stat samples	**16, 13 × 100; 16, 13 × 75, Sarstedt/yes**	**16, 13 × 100; 16, 13 × 75/yes**
• Maximum No. of samples that can be loaded/Maintenance required	**200/monthly**	**2,300/bimonthly**
Automated decapping available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**Power Processor II/—/yes/600**	**The Efficiency Series/—/yes/750**
• Containers device accommodates/Maintenance required	**16, 13 × 100; 16, 13 × 75, Sarstedt/monthly**	**16, 13 × 100; 16, 13 × 75/bimonthly**
• Removes multiple size tube caps per run/Removes screw type sample caps	**yes/no**	**yes/yes**
Automated sorting available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**Power Processor II/—/yes/500**	**The Efficiency Series/can be customized/yes/2,300**
• Containers device accommodates/Software can sort by	**16, 13 × 100; 16, 13 × 75, Sarstedt/method, output**	**16, 13 × 100; 16, 13 × 75/specimen type, output priority**
Specimen integrity monitor available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**Power Processor II/—/yes/90**	**—**
• Containers device accommodates/Maintenance required	**16, 13 × 100; 16, 13 × 75, Sarstedt/monthly**	**—**
Automated aliquotting available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**Power Processor II/—/yes/140 primary samples**	**The Efficiency Series/—/yes**
• Containers device accommodates	**16, 13 × 100; 16, 13 × 75, Sarstedt**	**16, 13 × 100; 16, 13 × 75**
• Inspects samples for bar code/Detects and reports clots in specimen	**yes/yes**	**yes/yes**
• Detects and reports quantity not sufficient specimens/Maintenance required	**yes/daily, weekly**	**yes/bimonthly**
Instrument (analyzer) interfaces		
• Rules-based instrument interface control subsystem	**yes**	**yes**
• Process control of instrument via control subsystem	**yes**	**yes**
Physical/hardware (instrument/specimen) interface		
• Hematology/Chemistry/Coagulation	**robotic arm interface/point-of-reference sampling, robotic arm interface/point-of-reference sampling, robotic arm interface**	**robotic arm interface/point-of-reference sampling/robotic arm interface**
• Immunoassay/Urinalysis	**point-of-reference sampling, robotic arm interface/point-of-reference sampling**	**point-of-reference sampling/point-of-reference sampling**
Instruments to which your system or product is interfaced	**Abbott Architect, Axsym; Siemens Advia, Atlas; Beckman Coulter LX 20, DxC, DxI; Ortho 950, 250, Eci; Roche Modular; Stago Star**	**Ortho: Vitros 5,1, 950, and 250; Abbott: Architect i2000, Axsym; Olympus: DPC Immulite 2000; Roche Modular; Beckman Coulter: DXi 800, Stago Star, others**
Other robotic products/components to which system or product is linked	**—**	**iLAS Sorter (standalone), interface to any track system**
Automated recapper or sealer available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	**Power Processor III/—/yes/500**	**The Efficiency Series/—/yes/800**
• Recaps-seals multiple size tubes simult./Containers device accommodates	**no/13 × 100; 13 × 75, Sarstedt**	**yes/16, 13 × 100; 16, 13 × 75**
• Maintenance required	**weekly**	**bimonthly**
Automated storage and retrieval available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	**Power Processor III/—/yes/500**	**ExDec/—/yes/1,200**
• Containers device accommodates/Connects to the track	**13 × 100; 13 × 75, Sarstedt/yes**	**16, 13 × 100; 16, 13 × 75/yes**
• Room temperature/Minimum and maximum number of tubes stored per module	**yes/1 and 6,000**	**yes/up to 1,200**
• Multiple size tubes can be stored in the same module/Maintenance required	**no/weekly**	**no/—**
• Refrigerated storage and retrieval capability	**yes**	**no**
Longitudinal upgrade pathway or plan to protect users' investments	**Power Processor is expandable for upgrades as lab needs grow**	**easily extendable**
Average time to install/Who provides service, support/Hours support is available	**7–21 days/Beckman Coutler/24–7**	**1-2 weeks/Integrated Laboratory Automation Solutions/224–7**
On-site biomedical engineer required/User group meets regularly	**no/yes**	**no/no**
List price	**depends on configuration**	**depends on configuration and laboratory requirement**
Individual list prices for components		
• Process control SW/Transportation systems/Auto. centrifugation	**—**	**—**
• Auto. input, accession/Auto. decap/Auto. sort/Auto. storage and retrieval	**—**	**—**
• Specimen integrity monitor/Automated aliquot	**—**	**—**
• Instrument (analyzer) interfaces/Automated recap	**—**	**—**
Distinguishing features (supplied by company)	**refrigerated storage with recapping and auto rerun; totally open system; intelligent aliquotting; proven consistent TAT results**	**prioritizes stats; uses variety of tube sizes; provides smart sorting and delivery; totally flexible; interfaces with any track-ready instruments and wide range of LIS vendors; remote management; adaptable for all lab sizes**

** For basic bulding block unit*

*** Average throughput in specimen containers per hour per device*

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

Tabulation does not represent an endorsement by the College of American Pathologists.

Laboratory automation systems and workcells

Part 5 of 13	**LABOTIX Automation** **Peter J. Manes** peter.manes@labotix.com **2323 S. 171st Street, Omaha, NE 68130** **402-398-2274** www.labotix.com	**m-u-t America** **Karsten Wittmann** kwittmann@mut-group.com **3931 Deep Rock Road, Henrico, VA 23233** **804-620-4029** www.mut-group.com
Name of system/First year installed/No. of 2010 contracts signed	**RRUSH/1994/—**	**HCTS2000 MK3 racking device/2008/—**
No. of live sites installed in N. America/Europe/Asia-Australia	**11/4/0**	**—**
Automation products that are available		
• Pre-analytical processor/Total laboratory automation	**yes/yes**	**yes/no**
• Automated functions: Accessioning/Track load/Centrifugation/Decapping	**yes/yes/yes/yes**	**yes/no/no/no**
• Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing	**yes/yes/yes/yes**	**yes/no/no/no**
• Automated functions: Storage-retrieval/Intelligent sample routing	**yes/yes**	**no/yes**
• SW: Dedicated Process Control/Middleware control using LIS/Architecture	**yes/yes/open**	**yes/yes/closed**
• Company has dedicated automation support team/Remote sys. monitoring	**yes/yes**	**yes/yes**
Software features/functionality		
• Patient demographics and insurance data/Rules-based architecture	**—/automation SW feature**	**LIS feature/automation SW feature**
• Supports data retrieval/Internet connectivity	**automation SW feature/—**	**—**
• Online real-time help system/QC/Stats and management reports	**automation SW feature/automation SW feature/automation SW feature**	**automation SW feature/—/—**
• Evaluates validity and releasability of results from automated analyzers	**LIS feature**	**—**
• Specimen tracking/Priority processing/Random-access spec. movement	**automation SW feature/automation SW feature/automation SW feature**	**automation SW feature/automation SW feature/—**
• Supports accession number redundancy (duplicate specimen ID)	**LIS feature**	**automation SW feature**
• Supports specimen carrier and level identification	**—**	**—**
• Unique bar-code number per container required	**automation SW feature**	**—**
• Specimen routing/Multistop routing (one tube to multiple workstations)	**automation SW feature/automation SW feature**	**automation SW feature/automation SW feature**
• Specimen scheduling/Instrument scheduling	**automation SW feature/LIS feature**	**—**
• Routes test to workstation/Automatic reflex, repeat, dilutions	**automation SW feature/LIS feature**	**—**
• Supports multiple HW configuration/Supports other proprietary transport. HW	**automation SW feature/—**	**automation SW feature/—**
• Sample storage and retrieval SW/Supports approved CLSI standards	**automation SW feature/automation SW feature**	**—/automation SW feature**
LIS(s) and versions interfaced and live w/LAS/How LIS(s) are interfaced with your LAS	**Cerner, PGP, Triple G, Sunquest, Rubicon/HL7 or ASTM**	**Mysis, Soft, DI, VA, DHCP/ASTM**
Transportation systems available	**yes**	**no**
• Model/Dimensions* (H × W × D)*/Conforms to CLSI Stand. Auto 1-5	**Flexlink/custom by site/yes**	**—**
• Containers device accommodates/Average throughput in cm per second	**16, 13 × 100; 16, 13 × 75/variable**	**—**
• Supports automatic rerouting for reflex-repeat-dilutions	**yes**	**—**
• Modular HW/Installed options/Device can operate in track and manual mode	**yes/floor mounted, overhead mounted/—**	**—**
• Required utilities/Required maintenance	**electricity/quarterly**	**—**
• Carrier type/Scalable system	**single specimen container per carrier/yes**	**—**
Automated centrifugation available	**yes**	**no**
• Model/Dimensions (H × W × D)/Conforms to CLSI Stand. Auto 1-5	**Hettich/74 × 34 × 36 inches/yes**	**—**
• Maximum throughput/Containers device accommodates	**350/16, 13 × 100; 16, 13 × 75**	**—**
• Can identify tube types for custom programmed rate and spin times per run	**no**	**—**
• More than one centrifuge can be connected to track system	**yes**	**—**
• For multi-unit centrifuge, each centrifuge operates independently for rate and time	**yes**	**—**
• Maintenance required	**quarterly**	**—**
Automated input/accessioning available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**Labotix/74 × 34 × 36 inches/yes/1,200**	**HCTS2000 MK3/61 × 98 × 53 inches/yes/800–2,000**
• Containers device accommodates/Dedicated lanes for stat samples	**16, 13 × 100; 16, 13 × 75/yes**	**16, 13 × 100; 16, 13 × 75, 8–19 mm diameter × 75–120 mm height/no**
• Maximum No. of samples that can be loaded/Maintenance required	**400/quarterly**	**550/daily, monthly**
Automated decapping available	**yes**	**no**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**Labotix/20 × 9 × 12 inches/yes/400**	**—**
• Containers device accommodates/Maintenance required	**16, 13 × 100; 16, 13 × 75/quarterly**	**—**
• Removes multiple size tube caps per run/Removes screw type sample caps	**yes/no**	**—**
Automated sorting available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**Labotix/74 × 34 × 36 inches/yes/400**	**HCTS2000 MK3/61 × 98 × 53 inches/yes/800–2,000**
• Containers device accommodates/Software can sort by	**16, 13 × 100; 16, 13 × 75/specimen, method, output**	**16, 13 × 100; 16, 13 × 75, 8–19 mm diameter × 75–120 mm height/specimen, method, output**
Specimen integrity monitor available	**no**	**no**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**—**	**—**
• Containers device accommodates/Maintenance required	**—**	**—**
Automated aliquotting available	**yes**	**no**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**Labotix/60 × 57 × 25 inches/yes/300**	**—**
• Containers device accommodates	**16, 13 × 100; 16, 13 × 75**	**—**
• Inspects samples for bar code/Detects and reports clots in specimen	**yes/yes**	**—**
• Detects and reports quantity not sufficient specimens/Maintenance required	**yes/quarterly**	**—**
Instrument (analyzer) interfaces		
• Rules-based instrument interface control subsystem	**yes**	**no**
• Process control of instrument via control subsystem	**—**	**no**
Physical/hardware (instrument/specimen) interface		
• Hematology/Chemistry/Coagulation	**point-of-ref., robotic rack/point-of-ref., robotic rack/point-of-ref., robotic rack**	**no/no/no**
• Immunoassay/Urinalysis	**point-of-reference, robotic rack/point-of-reference, robotic rack**	**no/no**
Instruments to which your system or product is interfaced	**Beckman Coulter DXi 800, Stago STAR Evolution, Olympus 2700 and 5400, Siemens Advia Centaur, Sysmex HST with SMS, Ortho-Clinical Vitros, and more**	**—**
Other robotic products/components to which system or product is linked	**—**	**—**
Automated recapper or sealer available	**recapper**	**no**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	**Labotix/60 × 13 × 23 inches/yes/750**	**—**
• Recaps-seals multiple size tubes simult./Containers device accommodates	**yes/16, 13 × 100; 16, 13 × 75**	**—**
• Maintenance required	**quarterly**	**—**
Automated storage and retrieval available	**yes**	**no**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	**Labotix/90 × 47 × 56 inches/yes/750**	**—**
• Containers device accommodates/Connects to the track	**16, 13 × 100; 16, 13 × 75/yes**	**—**
• Room temperature/Minimum and maximum number of tubes stored per module	**no/5,700**	**—**
• Multiple size tubes can be stored in the same module/Maintenance required	**yes/quarterly**	**—**
• Refrigerated storage and retrieval capability	**yes**	**—**
Longitudinal upgrade pathway or plan to protect users' investments	**open system allows changing analyzers and vendors at any time; expands and changes physical shape of track at any time**	**independent of analyzer company; module can be upgraded with options**
Average time to install/Who provides service, support/Hours support is available	**30 days/Labotix/24–7–365 days per year**	**<2 days/m-u-t America/24-7**
On-site biomedical engineer required/User group meets regularly	**—/no**	**no/no**
List price	**varies by size**	**$161,600**
Individual list prices for components		
• Process control SW/Transportation systems/Auto. centrifugation	**—**	**included/—/—**
• Auto. input, accession/Auto. decap/Auto. sort/Auto. storage and retrieval	**—**	**—/—/included/—**
• Specimen integrity monitor/Automated aliquot	**—**	**—**
• Instrument (analyzer) interfaces/Automated recap	**—**	**—**
Distinguishing features (supplied by company)	**open system sorts and delivers all specimens to all vendors' analyzers anywhere in lab; users can change vendors without changing automation; scalable system allows customers to expand and reconfigure automation at any time**	**bulk loading of tubes; tubes are placed into analyzer racks; sorting to output bins and analyzer racks**

** For basic bulding block unit*

*** Average throughput in specimen containers per hour per device*

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

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Laboratory automation systems and workcells

Part 6 of 13	m-u-t America **Karsten Wittmann** kwittmann@mut-group.com 3931 Deep Rock Road, Henrico, VA 23233 804-620-4029 www.mut-group.com	Ortho-Clinical Diagnostics **Mark Steelman** msteelma@its.jnj.com 1001 US Route 202, Raritan, NJ 08869 585-453-3420 www.orthoclinical.com
Name of system/First year installed/No. of 2010 contracts signed	HCTS2000 MK2 automated sorter/2007/—	enGen Laboratory Automation System/2001/13
No. of live sites installed in N. America/Europe/Asia-Australia	—	18/74/2
Automation products that are available		
• Pre-analytical processor/Total laboratory automation	yes/no	yes/yes
• Automated functions: Accessioning/Track load/Centrifugation/Decapping	yes/no/no/no	yes/yes/yes/yes
• Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing	yes/no/no/no	yes/yes/no/—
• Automated functions: Storage-retrieval/Intelligent sample routing	no/yes	in development/yes
• SW: Dedicated Process Control/Middleware control using LIS/Architecture	yes/yes/closed	yes/yes/open
• Company has dedicated automation support team/Remote sys. monitoring	yes/yes	yes/yes
Software features/functionality		
• Patient demographics and insurance data/Rules-based architecture	LIS feature/automation SW feature	automation SW feature/automation SW feature
• Supports data retrieval/Internet connectivity	—	automation SW feature/automation SW feature
• Online real-time help system/QC/Stats and management reports	automation SW feature/—/—	—/automation SW feature/automation SW feature
• Evaluates validity and releasability of results from automated analyzers	—	automation SW feature
• Specimen tracking/Priority processing/Random-access spec. movement	automation SW feature/automation SW feature/—	automation SW feature/automation SW feature/automation SW feature
• Supports accession number redundancy (duplicate specimen ID)	automation SW feature	—
• Supports specimen carrier and level identification	—	automation SW feature
• Unique bar-code number per container required	—	automation SW feature
• Specimen routing/Multistop routing (one tube to multiple workstations)	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Specimen scheduling/Instrument scheduling	—	automation SW feature/automation SW feature
• Routes test to workstation/Automatic reflex, repeat, dilutions	—	automation SW feature/automation SW feature
• Supports multiple HW configuration/Supports other proprietary transport. HW	automation SW feature/—	automation SW feature/automation SW feature
• Sample storage and retrieval SW/Supports approved CLSI standards	—/automation SW feature	automation SW feature/—
LIS(s) and versions interfaced and live w/LAS/How LIS(s) are interfaced with your LAS	Mysis, Soft, DI, VA, DHCP/ASTM	enGen interfaces with many LIS programs via Data Innovations MW: Cerner, Misys, SCC, several others/HL7, ASTM
Transportation systems available	no	yes
• Model/Dimensions* (H × W × D)*/Conforms to CLSI Stand. Auto 1-5	—	Covered Conveyor/600 to 2,400 mm sections/yes
• Containers device accommodates/Average throughput in cm per second	—	16, 13 × 100; 16, 13 × 75/10
• Supports automatic rerouting for reflex-repeat-dilutions	—	yes
• Modular HW/Installed options/Device can operate in track and manual mode	—	yes/floor mounted/yes
• Required utilities/Required maintenance	—	compressed air, electricity/annually
• Carrier type/Scalable system	—	single specimen container per carrier/yes
Automated centrifugation available	no	yes
• Model/Dimensions (H × W × D)/Conforms to CLSI Stand. Auto 1-5	—	centrifuge module/1,900 × 1,200 × 1,375 mm/yes
• Maximum throughput/Containers device accommodates	—	400; 96-tube capacity/13 × 100; 13 × 75
• Can identify tube types for custom programmed rate and spin times per run	—	yes
• More than one centrifuge can be connected to track system	—	yes
• For multi-unit centrifuge, each centrifuge operates independently for rate and time	—	yes
• Maintenance required	—	quarterly
Automated input/accessioning available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	HTS2000 MK2/48 × 56 × 31 inches/yes/2,000	rack entry-exit module/1,900 × 1,200 × 965 mm/yes/500
• Containers device accommodates/Dedicated lanes for stat samples	16, 13 × 100; 16, 13 × 75, 8–19 mm diameter × 75–120 mm height/no	16, 13 × 100; 16, 13 × 75/yes
• Maximum No. of samples that can be loaded/Maintenance required	550/daily, monthly	600/annually
Automated decapping available	no	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	—	decapper module/1,600 × 600 × 965 mm/yes/600
• Containers device accommodates/Maintenance required	—	16, 13 × 100; 16, 13 × 75/annually
• Removes multiple size tube caps per run/Removes screw type sample caps	—	yes/yes
Automated sorting available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	HCTS2000 MK2/48 × 56 × 31 inches/yes/2,000	rack exit-entry module/1,900 × 1,200 × 965 mm/yes/500
• Containers device accommodates/Software can sort by	16, 13×100; 16, 1 ×75, others/specimen type, bar code, cap color, method, others	16, 13 × 100; 16, 13 × 75/specimen, method, output
Specimen integrity monitor available	no	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	—	via Vitros 5,1 FS 3600, 5600/—/—/—
• Containers device accommodates/Maintenance required	—	16, 13 × 100; 16, 13 × 75/weekly, monthly, annually
Automated aliquotting available	no	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	—	aliquoter and labeler module/1,900 × 1,500 × 965 mm/yes/200
• Containers device accommodates	—	16, 13 × 100; 16, 13 × 75
• Inspects samples for bar code/Detects and reports clots in specimen	—	yes/yes
• Detects and reports quantity not sufficient specimens/Maintenance required	—	yes/quarterly
Instrument (analyzer) interfaces		
• Rules-based instrument interface control subsystem	no	yes
• Process control of instrument via control subsystem	no	—
Physical/hardware (instrument/specimen) interface		
• Hematology/Chemistry/Coagulation	no/no/no	robotic arm interface/point-of-reference sampling/robotic arm interface
• Immunoassay/Urinalysis	no/no	point-of-reference sampling/—
Instruments to which your system or product is interfaced	—	Vitros 5600, 4600, 3600, 5,1 FS systems; enGen interfaces with coagulation and hematology systems
Other robotic products/components to which system or product is linked	—	—
Automated recapper or sealer available	no	recapper
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	—	recapper module/1,600 × 600 × 965 mm/yes/500
• Recaps-seals multiple size tubes simult./Containers device accommodates	—	yes/16, 13 × 100; 16, 13 × 75
• Maintenance required	—	annually
Automated storage and retrieval available	no	yes, in development
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	—	—
• Containers device accommodates/Connects to the track	—	—
• Room temperature/Minimum and maximum number of tubes stored per module	—	—
• Multiple size tubes can be stored in the same module/Maintenance required	—	—
• Refrigerated storage and retrieval capability	—	—
Longitudinal upgrade pathway or plan to protect users' investments	independent of analyzer company; module can be upgraded with options	customized automation offering, enGen can be reconfigured or upgraded as needs change; SW configuration updates available periodically
Average time to install/Who provides service, support/Hours support is available	<2 days/m-u-t America/24–7	depends on config. customizations/depends on service contract with Ortho
On-site biomedical engineer required/User group meets regularly	no/no	no/no
List price	$116,000	depends on configuration
Individual list prices for components		
• Process control SW/Transportation systems/Auto. centrifugation	included—/—	—
• Auto. input, accession/Auto. decap/Auto. sort/Auto. storage and retrieval	—/—/included/—	—
• Specimen integrity monitor/Automated aliquot	—	—
• Instrument (analyzer) interfaces/Automated recap	—	—
Distinguishing features (supplied by company)	no robotic arms used, yields high throughput and reliability with ease of operation and installation; users can pour sample tubes into hopper, eliminating shuffling of tubes in and out of racks in lab reception areas; simplicity and flexibility of sorting rules and methods	customizable: systems designed to fit in existing floor space while providing Lean workflow; configurable: systems designed to interface with several lab analyzers; systems grow with the lab

** For basic bulding block unit*

*** Average throughput in specimen containers per hour per device*

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

Tabulation does not represent an endorsement by the College of American Pathologists.

Laboratory automation systems and workcells

Part 7 of 13

Roche Diagnostics
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Name of system/First year installed/No. of 2010 contracts signed No. of live sites installed in N. America/Europe/Asia-Australia	Aliquoting System RSA Pro/2002/15 38/159/57	Workstation RSA Pro and RSD Pro connected to EC1 or EC2/2003/5 5/25/3
Automation products that are available		
• Pre-analytical processor/Total laboratory automation	yes/yes	yes/yes
• Automated functions: Accessioning/Track load/Centrifugation/Decapping	yes/yes (as option)/yes/yes	yes/yes/yes/yes
• Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing	yes/yes/yes/yes	yes/yes/yes/yes
• Automated functions: Storage-retrieval/Intelligent sample routing	yes/yes	yes/yes
• SW: Dedicated Process Control/Middleware control using LIS/Architecture	yes/yes/closed	yes/yes/closed
• Company has dedicated automation support team/Remote sys. monitoring	yes/yes	yes/yes
Software features/functionality		
• Patient demographics and insurance data/Rules-based architecture	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Supports data retrieval/Internet connectivity	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Online real-time help system/QC/Stats and management reports	automation SW feature/automation SW feature/automation SW feature	automation SW feature/automation SW feature/automation SW feature
• Evaluates validity and releasability of results from automated analyzers	—	—
• Specimen tracking/Priority processing/Random-access spec. movement	automation SW feature/automation SW feature/automation SW feature	automation SW feature/automation SW feature/automation SW feature
• Supports accession number redundancy (duplicate specimen ID)	automation SW feature	automation SW feature
• Supports specimen carrier and level identification	automation SW feature	automation SW feature
• Unique bar-code number per container required	—	—
• Specimen routing/Multistop routing (one tube to multiple workstations)	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Specimen scheduling/Instrument scheduling	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Routes test to workstation/Automatic reflex, repeat, dilutions	automation SW feature/—	automation SW feature/—
• Supports multiple HW configuration/Supports other proprietary transport. HW	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Sample storage and retrieval SW/Supports approved CLSI standards	automation SW feature/automation SW feature	automation SW feature/automation SW feature
LIS(s) and versions interfaced and live w/LAS/How LIS(s) are interfaced with your LAS	Cerner, MCS, Medat, Systek, MIPS, Providens, Bayer, Molis, Omega, Misys, Vertex, Zanacore, DI, Cirrus, SCC Soft, Nyantech, MCS Promed, Swisslab, Melos, IDAA, Syscomp, OSM, Star LIMS, others/ASTM and system-specific dynamic interface	Cerner, MCS, Medat, Systek, MIPS, Providens, Bayer, Molis, Omega, Misys, Vertex, Zanacore, DI, Cirrus, SCC Soft, Nyantech, MCS Promed, Swisslab, Melos, IDAA, Syscomp, OSM, Star LIMS, others/ASTM and system-specific dynamic interface
Transportation systems available	yes	yes
• Model/Dimensions* (H × W × D)*/Conforms to CLSI Stand. Auto 1-5	transport built into the instrument/—/yes	transport built into the instrument/—/yes
• Containers device accommodates/Average throughput in cm per second	16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 mm up to 15.5 × 108 mm/—	16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 mm up to 15.5 × 108 mm/—
• Supports automatic rerouting for reflex-repeat-dilutions	no	no
• Modular HW/Installed options/Device can operate in track and manual mode	yes/—/yes	yes/floor mounted/yes
• Required utilities/Required maintenance	electricity/daily, quarterly	compressed air, electricity/daily, quarterly
• Carrier type/Scalable system	single specimen container per carrier/yes	single and multiple (5) specimen container per carrier/yes
Automated centrifugation available	yes	yes
• Model/Dimensions (H × W × D)/Conforms to CLSI Stand. Auto 1-5	single (EC1) or double (EC2)/EC1: 61.4 × 78.3 × 83.6 inches; EC2: 85.8 × 79.3 × 78.7 inches/yes	single (EC1) or double (EC2)/EC1: 61.4 × 78.3 × 83.6 inches; EC2: 85.8 × 79.3 × 78.7 inches/yes
• Maximum throughput/Containers device accommodates	EC1: 380 tubes and EC2: 635 tubes per hour/16, 13 × 100; 16, 13 × 75, others	EC1: 380 tubes and EC2: 635 tubes per hour/16, 13 × 100; 16, 13 × 75, others
• Can identify tube types for custom programmed rate and spin times per run	yes	yes
• More than one centrifuge can be connected to track system	yes	yes
• For multi-unit centrifuge, each centrifuge operates independently for rate and time	yes	yes
• Maintenance required	daily, quarterly	daily, quarterly
Automated input/accessioning available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	input unit as part of system/78.74 × 33.47 × 69.29 inches/yes/up to 1,200	input unit as part of instrument/78.74 × 33.47 × 69.29 inches/yes/up to 1,200
• Containers device accommodates/Dedicated lanes for stat samples	16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 mm up to 15.5 × 108 mm/yes	16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 mm up to 15.5 × 108 mm/yes
• Maximum No. of samples that can be loaded/Maintenance required	600/daily, quarterly	EC1: 150 tubes; EC2: 300 tubes/daily, quarterly
Automated decapping available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	decapping module as part of system/14.96 × 12.60 × 5.90 inches/yes/up to 1,200	decapping module as part of instrument/14.96 × 12.60 × 5.90 in./yes/up to 1,200
• Containers device accommodates/Maintenance required	16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 to 15.5 × 108 mm/daily, quarterly	16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 to 15.5 × 108 mm/daily, quarterly
• Removes multiple size tube caps per run/Removes screw type sample caps	yes/yes	yes/yes
Automated sorting available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	output sorter as part of system/71.65 × 55.90 × 55.11 inches/yes/up to 1,200	part of Aliquoting System RSA Pro or Sorting System RSD Pro/—/yes/up to 1,200
• Containers device accommodates/Software can sort by	16, 13×100; 16, 13×75; 11.5×65.5 to 15.5×108 mm/specimen, method, output	16, 13×100; 16, 13×75; 11.5×65.5 to 15.5×108 mm/specimen, method, output
Specimen integrity monitor available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	Quality Check Unit QS I/11.4 × 19.7 × 14.0 inches/yes/850	Quality Check Unit QS I/11.4 × 19.7 × 14.0 inches/yes/850
• Containers device accommodates/Maintenance required	16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 to 15.5 × 108 mm/daily, quarterly	16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 to 15.5 × 108 mm/daily, quarterly
Automated aliquotting available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	aliquoting unit as part of system/125 × 73.2 × 78.7 inches/yes/655	aliquoting unit as part of Aliquoting System RSA Pro/125 × 73.2 × 78.7 in./yes/655
• Containers device accommodates	16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 to 15.5 × 108 mm	16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 to 15.5 × 108 mm
• Inspects samples for bar code/Detects and reports clots in specimen	yes/yes	yes/yes
• Detects and reports quantity not sufficient specimens/Maintenance required	yes/daily, quarterly	yes/daily, quarterly
Instrument (analyzer) interfaces		
• Rules-based instrument interface control subsystem	yes	yes
• Process control of instrument via control subsystem	no	no
Physical/hardware (instrument/specimen) interface		
• Hematology/Chemistry/Coagulation	no/no/no	no/no/no
• Immunoassay/Urinalysis	no/no	no/no
Instruments to which your system or product is interfaced	—	—
Other robotic products/components to which system or product is linked	—	—
Automated recapper or sealer available	sealer	sealer
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	recapping module as part of system/13.39 × 12.20 × 8.66 inches/yes/up to 1,200	recapping module/13.39 × 12.20 × 8.66 inches/yes/up to 1,200
• Recaps-seals multiple size tubes simult./Containers device accommodates	yes/16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 to 15.5 × 108 mm	yes/16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 to 15.5 × 108 mm
• Maintenance required	daily, quarterly	daily, quarterly
Automated storage and retrieval available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	as part of system (output sorter), up to 41 workplaces/—/yes/up to 1,200	implemented into system, up to 41 workplaces/—/yes/up to 1,200
• Containers device accommodates/Connects to the track	16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 to 15.5 × 108 mm/yes	16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 to 15.5 × 108 mm/no
• Room temperature/Minimum and maximum number of tubes stored per module	no/1,200	no/1,200
• Multiple size tubes can be stored in the same module/Maintenance required	yes/daily, quarterly	yes/—
• Refrigerated storage and retrieval capability	no	no
Longitudinal upgrade pathway or plan to protect users' investments	independent of any analyzer company, Roche/PVT modules can be up-graded	independent of any analyzer company, Roche/PVT modules can be upgraded
Average time to install/Who provides service, support/Hours support is available	~1–2 weeks/Roche Diagnostics/daily 8 AM–5 PM (EST) and 24–7 upon request	~1–2 weeks/Roche Diagnostics/daily 8 AM–5 PM (EST) and 24–7 upon request
On-site biomedical engineer required/User group meets regularly	no/no	no/no
List price	—	—
Individual list prices for components		
• Process control SW/Transportation systems/Auto. centrifugation	—/included/—/included	—/included/included/included
• Auto. input, accession/Auto. decap/Auto. sort/Auto. storage and retrieval	included/included/included/—	included/included/included/—
• Specimen integrity monitor/Automated aliquot	—/included	—/included as part of Aliquoting System RSA Pro
• Instrument (analyzer) interfaces/Automated recap	—	—
Distinguishing features (supplied by company)	basic platform can be configured for each customer routine workflow using many vendor sample carriers for input and output sorting and archiving; recursive workflow allows samples to be processed multiple times	basic platform can be configured for each customer routine workflow using many vendor sample carriers for input and output sorting and archiving; recursive workflow allows samples to be processed multiple times

** For basic bulding block unit*
*** Average throughput in specimen containers per hour per device*

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Laboratory automation systems and workcells

Part 8 of 13	Roche Diagnostics **Ed Duning** ed.duning@roche.com **9115 Hauge Dr., Indianapolis, IN 46250** **317-521-4710** www.roche-diagnostics.us	Roche Diagnostics **Ed Duning** ed.duning@roche.com **9115 Hauge Dr., Indianapolis, IN 46250** **317-521-4710** www.roche-diagnostics.us
Name of system/First year installed/No. of 2010 contracts signed **No. of live sites installed in N. America/Europe/Asia-Australia**	**Sorting System RSD Pro/2001/23** **28/112/20**	**Modular Pre-Analytics EVO/2000/72** **172/353/265**
Automation products that are available		
• Pre-analytical processor/Total laboratory automation	yes/yes	yes/yes
• Automated functions: Accessioning/Track load/Centrifugation/Decapping	yes/yes/yes/yes	yes/yes/yes/yes
• Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing	yes/no/no/yes	yes/yes/yes/yes
• Automated functions: Storage-retrieval/Intelligent sample routing	yes/yes	yes/yes
• SW: Dedicated Process Control/Middleware control using LIS/Architecture	yes/yes/closed	yes/yes/open and closed
• Company has dedicated automation support team/Remote sys. monitoring	yes/yes	yes/yes
Software features/functionality		
• Patient demographics and insurance data/Rules-based architecture	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Supports data retrieval/Internet connectivity	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Online real-time help system/QC/Stats and management reports	automation SW feature/automation SW feature/automation SW feature	automation SW feature/automation SW feature/automation SW feature
• Evaluates validity and releasability of results from automated analyzers	—	automation SW feature
• Specimen tracking/Priority processing/Random-access spec. movement	automation SW feature/automation SW feature/automation SW feature	automation SW feature/automation SW feature/automation SW feature
• Supports accession number redundancy (duplicate specimen ID)	automation SW feature	automation SW feature
• Supports specimen carrier and level identification	automation SW feature	automation SW feature
• Unique bar-code number per container required	—	automation SW feature
• Specimen routing/Multistop routing (one tube to multiple workstations)	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Specimen scheduling/Instrument scheduling	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Routes test to workstation/Automatic reflex, repeat, dilutions	automation SW feature/—	automation SW feature/—
• Supports multiple HW configuration/Supports other proprietary transport. HW	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Sample storage and retrieval SW/Supports approved CLSI standards	automation SW feature/automation SW feature	automation SW feature/automation SW feature
LIS(s) and versions interfaced and live w/LAS/How LIS(s) are interfaced with your LAS	Cerner, MCS, Medat, Systek, MIPS, Providens, Bayer, Molis, Omega, Misys, Vertex, Zanacore, DI, Cirrus, SCC Soft, Nyantech, MCS Promed, Swisslab, Melos, IDAA, Syscomp, OSM, Star LIMS, others/ASTM and system-specific dynamic interface	Cerner, MCS, Medat, Systek, MIPS, Providens, Bayer, Molis, Omega, Misys, Vertex, Zanacore, DI, Cirrus, SCC Soft, Nyantech, MCS Promed, Swisslab, Melos, IDAA, Syscomp, OSM, Star LIMS, others/LIS to LAS, HL7, ASTM
Transportation systems available	yes	yes
• Model/Dimensions* (H × W × D)*/Conforms to CLSI Stand. Auto 1-5	transport built into the instrument/—/yes	MPA (A, B, C)/A: 4.6 × 15 × 3.5 ft.; B: 4.6 × 18 × 3.5 ft.; C: 4.6 × 9 × 3.5 feet/yes
• Containers device accommodates/Average throughput in cm per second	16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 to 15.5 × 108 mm/—	16, 13 × 100; 16, 13 × 75; 13 × 92, Greiner FBT, others/400 tubes per hour
• Supports automatic rerouting for reflex-repeat-dilutions	no	no
• Modular HW/Installed options/Device can operate in track and manual mode	yes/—/yes	yes/floor mounted/yes
• Required utilities/Required maintenance	electricity/daily, quarterly	electricity/daily, quarterly
• Carrier type/Scalable system	single specimen container per carrier/yes	multiple specimen (5) container per carrier/yes
Automated centrifugation available	yes	yes
• Model/Dimensions (H × W × D)/Conforms to CLSI Stand. Auto 1-5	single (EC1), double (EC2)/EC1: 61.4×78.3×83.6 inches; EC2: 85.8×79.3×78.7 in./yes	standard centrifuge/3 × 2.5 × 3.5 feet/yes
• Maximum throughput/Containers device accommodates	EC1: 380 tubes and EC2: 635 tubes per hour/16, 13 × 100; 16, 13 × 75, others	250/16, 13 × 100; 16, 13 × 75
• Can identify tube types for custom programmed rate and spin times per run	yes	yes
• More than one centrifuge can be connected to track system	yes	yes
• For multi-unit centrifuge, each centrifuge operates independently for rate and time	yes	no
• Maintenance required	daily, quarterly	daily, quarterly
Automated input/accessioning available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	input unit as part of system/78.74 × 33.47 × 69.29 inches/yes/up to 1,200	standard input buffer/42 × 38 × 41 inches/yes/160 racks
• Containers device accommodates/Dedicated lanes for stat samples	16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 mm up to 15.5 × 108 mm/yes	16, 13 × 100; 16, 13 × 75/yes
• Maximum No. of samples that can be loaded/Maintenance required	600/daily, quarterly	300/daily, quarterly
Automated decapping available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	decapping module as part of system/14.96 × 12.60 × 5.90 inches/yes/up to 1,200	standard decapper/49 × 18 × 41 inches/yes/80 racks
• Containers device accommodates/Maintenance required	16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 to 15.5 × 108 mm/daily, quarterly	16, 13×100; 16, 13×75; rubber, hemogard, twist-off/daily, quarterly
• Removes multiple size tube caps per run/Removes screw type sample caps	yes/yes	yes/yes
Automated sorting available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	output sorter as part of system/71.65 × 55.90 × 55.11 inches/yes/up to 1,200	standard sorter/36.6 × 11.8 × 41 inches/yes/80 racks
• Containers device accommodates/Software can sort by	16, 13×100; 16, 13×75; 11.5×65.5 to 15.5×108 mm/specimen, method, output	16, 13 × 100; 16, 13 × 75; 13×92, Greiner FBT, others/specimen, method, output
Specimen integrity monitor available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	Quality Check Unit QS I/11.4 × 19.7 × 14.0 inches/yes/850	standard aliquoter/53 × 42 × 41 inches/yes/80 racks
• Containers device accommodates/Maintenance required	16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 to 15.5 × 108 mm/daily, quarterly	16, 13 × 100; 16, 13 × 75; 13×92, Greiner FBT, Greiver, others/daily, quarterly
Automated aliquotting available	no	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	—	standard aliquoter/53 × 42 × 41 in.ches/yes/80 racks
• Containers device accommodates	—	16, 13 × 100; 16, 13 × 75; 13×92, Greiner FBT, others
• Inspects samples for bar code/Detects and reports clots in specimen	—	yes/yes
• Detects and reports quantity not sufficient specimens/Maintenance required	—	yes/daily, quarterly
Instrument (analyzer) interfaces		
• Rules-based instrument interface control subsystem	yes	yes
• Process control of instrument via control subsystem	no	yes
Physical/hardware (instrument/specimen) interface		
• Hematology/Chemistry/Coagulation	no/no/no	no/point-of-reference sampling/no
• Immunoassay/Urinalysis	no/no	point-of-reference sampling/point-of-reference sampling
Instruments to which your system or product is interfaced	—	Hitachi, Stago
Other robotic products/components to which system or product is linked	—	Hitachi, Stago
Automated recapper or sealer available	sealer	recapper
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	recapping module as part of system/13.39 × 12.20 × 8.66 inches/yes/up to 1,200	standard recapper/50 × 17.5 × 41 inches/yes/80 racks
• Recaps-seals multiple size tubes simult./Containers device accommodates	yes/16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 to 15.5 × 108 mm	yes/16, 13 × 100; 16, 13 × 75, 13 × 92, Greiner FBT, Greiver, others
• Maintenance required	daily, quarterly	daily, quarterly
Automated storage and retrieval available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	archiving included as part of system (output sorter), up to 41 workplaces/—/yes/up to 1,200	p501, p701/p501: 5.3 ft. × 14 feet; p701: 5.3 feet × 17.6 feet/yes/80 racks
• Containers device accommodates/Connects to the track	16, 13 × 100; 16, 13 × 75; 11.5 × 65.5 mm up to 15.5 × 108 mm/yes	16, 13 × 100; 16, 13 × 75, 13 × 92, Greiner FBT, Greiver pour off tube, others/yes
• Room temperature/Minimum and maximum number of tubes stored per module	no/up to 1,200	no/p501: 13,500; p701: 27,000
• Multiple size tubes can be stored in the same module/Maintenance required	yes/daily, quarterly	yes/daily, quarterly
• Refrigerated storage and retrieval capability	no	yes
Longitudinal upgrade pathway or plan to protect users' investments	independent of any analyzer company, Roche/PVT modules can be upgraded	support for a minimum of 10 years after production
Average time to install/Who provides service, support/Hours support is available	~1 week/Roche Diagnostics/daily 8 AM–5 PM (EST); 24–7 upon request	up to 2 weeks/Roche Diagnostics phone and engineering field support/24-7
On-site biomedical engineer required/User group meets regularly	no/no	no/no
List price	—	—
Individual list prices for components		
• Process control SW/Transportation systems/Auto. centrifugation	—/included/—/included	included/included/included
• Auto. input, accession/Auto. decap/Auto. sort/Auto. storage and retrieval	included/included/included/—	included/included/included/included
• Specimen integrity monitor/Automated aliquot	—	included/included
• Instrument (analyzer) interfaces/Automated recap	—	included/included
Distinguishing features (supplied by company)	basic platform can be configured for each customer routine workflow using many vendor sample carriers for input and output sorting and archiving; recursive workflow allows samples to be processed multiple times; quality module QS I for monitoring specimen integrity and measuring volume	completely scalable and flexible to fit customer needs and facility space requirements; programmed and personalized to any customer workflow requirements; three models can be configured in 100+ standard layouts, connecting up to 12 chemistry/immunochemistry modules

** For basic bulding block unit*

*** Average throughput in specimen containers per hour per device*

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

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Laboratory automation systems and workcells

Part 9 of 13	**Roche Diagnostics** **Ed Duning** ed.duning@roche.com **9115 Hauge Dr., Indianapolis, IN 46250** **317-521-4710** www.roche-diagnostics.us	**Roche Diagnostics** **Ed Duning** ed.duning@roche.com **9115 Hauge Dr., Indianapolis, IN 46250** **317-521-4710** www.roche-diagnostics.us
Name of system/First year installed/No. of 2010 contracts signed	**cobas p501 (storage and retrieval)/2009/3**	**cobas p701 (storage and retrieval)/2009/4**
No. of live sites installed in N. America/Europe/Asia-Australia	**1/11/2**	**3/4/2**
Automation products that are available		
• Pre-analytical processor/Total laboratory automation	**no/no**	**no/no**
• Automated functions: Accessioning/Track load/Centrifugation/Decapping	**no/no/no/yes**	**no/no/no/yes**
• Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing	**no/no/no/yes**	**no/no/no/yes**
• Automated functions: Storage-retrieval/Intelligent sample routing	**yes/no**	**yes/no**
• SW: Dedicated Process Control/Middleware control using LIS/Architecture	**yes/yes/closed**	**yes/yes/closed**
• Company has dedicated automation support team/Remote sys. monitoring	**yes/yes**	**yes/yes**
Software features/functionality		
• Patient demographics and insurance data/Rules-based architecture	**—/automation SW feature**	**—/automation SW feature**
• Supports data retrieval/Internet connectivity	**automation SW feature/automation SW feature**	**automation SW feature/automation SW feature**
• Online real-time help system/QC/Stats and management reports	**automation SW feature/automation SW feature/automation SW feature**	**automation SW feature/automation SW feature/automation SW feature**
• Evaluates validity and releasability of results from automated analyzers	**—**	**—**
• Specimen tracking/Priority processing/Random-access spec. movement	**automation SW feature/automation SW feature/—**	**automation SW feature/automation SW feature/—**
• Supports accession number redundancy (duplicate specimen ID)	**automation SW feature**	**automation SW feature**
• Supports specimen carrier and level identification	**—**	**—**
• Unique bar-code number per container required	**automation SW feature**	**automation SW feature**
• Specimen routing/Multistop routing (one tube to multiple workstations)	**—**	**—**
• Specimen scheduling/Instrument scheduling	**automation SW feature/—**	**automation SW feature/—**
• Routes test to workstation/Automatic reflex, repeat, dilutions	**—**	**—**
• Supports multiple HW configuration/Supports other proprietary transport. HW	**—**	**—**
• Sample storage and retrieval SW/Supports approved CLSI standards	**automation SW feature/automation SW feature**	**automation SW feature/automation SW feature**
LIS(s) and versions interfaced and live w/LAS/How LIS(s) are interfaced with your LAS	**Cerner, Misys, SCC Soft/HL7**	**Cerner, Misys, SCC Soft/HL7**
Transportation systems available	**no**	**no**
• Model/Dimensions* (H × W × D)*/Conforms to CLSI Stand. Auto 1-5	**—**	**—**
• Containers device accommodates/Average throughput in cm per second	**—**	**—**
• Supports automatic rerouting for reflex-repeat-dilutions	**—**	**—**
• Modular HW/Installed options/Device can operate in track and manual mode	**—**	**—**
• Required utilities/Required maintenance	**—**	**—**
• Carrier type/Scalable system	**—**	**—**
Automated centrifugation available	**no**	**no**
• Model/Dimensions (H × W × D)/Conforms to CLSI Stand. Auto 1-5	**—**	**—**
• Maximum throughput/Containers device accommodates	**—**	**—**
• Can identify tube types for custom programmed rate and spin times per run	**—**	**—**
• More than one centrifuge can be connected to track system	**—**	**—**
• For multi-unit centrifuge, each centrifuge operates independently for rate and time	**—**	**—**
• Maintenance required	**—**	**—**
Automated input/accessioning available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**manual and connected to Roche automation/14 × 5.3 × 7.5 feet/yes/400**	**manual and connected to Roche automation/17.5 × 5.3 × 7.5 feet/yes/400**
• Containers device accommodates/Dedicated lanes for stat samples	**16, 13 × 100; 16, 13 × 75, 11.5 × 65.5 mm–15.5 × 108 mm/—**	**16, 13 × 100; 16, 13 × 75, 11.5 × 65.5 mm–15.5 × 108 mm/—**
• Maximum No. of samples that can be loaded/Maintenance required	**300 manual and continuous from MPA/daily, quarterly**	**300 manual and continuous from MPA/daily, quarterly**
Automated decapping available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**decapper as part of system/—/yes/total system is 400**	**decapper as part of system/—/yes/total system is 400**
• Containers device accommodates/Maintenance required	**16, 13 × 100; 16, 13 × 75, 11.5 × 65.5 mm–15.5 × 108 mm/daily, quarterly**	**16, 13 × 100; 16, 13 × 75, 11.5 × 65.5 mm–15.5 × 108 mm/daily, quarterly**
• Removes multiple size tube caps per run/Removes screw type sample caps	**yes/yes**	**yes/yes**
Automated sorting available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**sorter as part of system/—/yes/total system is 400**	**sorter as part of system/—/yes/total system is 400**
• Containers device accommodates/Software can sort by	**16, 13 × 100; 16, 13 × 75; 13 × 92, Greiner FBT, others/specimen, output**	**16, 13 × 100; 16, 13 × 75; 13 × 92, Greiner FBT, others/specimen, output**
Specimen integrity monitor available	**no**	**no**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**—**	**—**
• Containers device accommodates/Maintenance required	**—**	**—**
Automated aliquotting available	**no**	**no**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**—**	**—**
• Containers device accommodates	**—**	**—**
• Inspects samples for bar code/Detects and reports clots in specimen	**—**	**—**
• Detects and reports quantity not sufficient specimens/Maintenance required	**—**	**—**
Instrument (analyzer) interfaces		
• Rules-based instrument interface control subsystem	**yes**	**yes**
• Process control of instrument via control subsystem	**yes**	**yes**
Physical/hardware (instrument/specimen) interface		
• Hematology/Chemistry/Coagulation	**no/no/no**	**no/no/no**
• Immunoassay/Urinalysis	**no/no**	**no/no**
Instruments to which your system or product is interfaced	**Roche MPA**	**Roche MPA**
Other robotic products/components to which system or product is linked	**—**	**—**
Automated recapper or sealer available	**recapper**	**recapper**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	**recapper as part of system/—/yes/total system is 400**	**recapper as part of system/—/yes/total system is 400**
• Recaps-seals multiple size tubes simult./Containers device accommodates	**yes/16, 13 × 100; 16, 13 × 75, 13 × 92, 11.5 × 65.5 mm–15.5 × 108 mm**	**yes/16, 13 × 100; 16, 13 × 75, 13 × 92, 11.5 × 65.5 mm–15.5 × 108 mm**
• Maintenance required	**daily, quarterly**	**daily, quarterly**
Automated storage and retrieval available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	**cobas p501/14 × 5.3 × 7.5 feet/yes/400**	**cobas p501/17.5 × 5.3 × 7.5 feet/yes/400**
• Containers device accommodates/Connects to the track	**16, 13 × 100; 16, 13 × 75, 13 × 92, 11.5 × 65.5 mm–15.5 × 108 mm/yes**	**16, 13 × 100; 16, 13 × 75, 13 × 92, 11.5 × 65.5 mm–15.5 × 108 mm/yes**
• Room temperature/Minimum and maximum number of tubes stored per module	**no/13,500**	**no/27,000**
• Multiple size tubes can be stored in the same module/Maintenance required	**yes/daily, quarterly**	**yes/daily, quarterly**
• Refrigerated storage and retrieval capability	**yes**	**yes**
Longitudinal upgrade pathway or plan to protect users' investments	**support for a minimum of 10 years after production; product upgrades installed as required**	**support for a minimum of 10 years after production; product upgrades installed as required**
Average time to install/Who provides service, support/Hours support is available	**1 week/Roche Diagnostics/24-7**	**1 week/Roche Diagnostics/24-7**
On-site biomedical engineer required/User group meets regularly	**no/no**	**no/no**
List price	**variable based on system options**	**variable based on system options**
Individual list prices for components		
• Process control SW/Transportation systems/Auto. centrifugation	**included/—/—**	**included/—/—**
• Auto. input, accession/Auto. decap/Auto. sort/Auto. storage and retrieval	**included/included/included/based on system options**	**included/included/included/based on system options**
• Specimen integrity monitor/Automated aliquot	**—**	**—**
• Instrument (analyzer) interfaces/Automated recap	**—/included**	**—/included**
Distinguishing features (supplied by company)	**storage capacity of 13,500 tubes with multiple storage durations for 13- and 16-mm tubes; automatically disposes of tubes at the expiration of the selected storage duration; capability of accepting tubes for storage from an automatic feed and manual walk up**	**storage capacity of 27,000 tubes with multiple storage durations for 13- and 16-mm tubes; automatically disposes of tubes at the expiration of the selected storage duration; capability of accepting tubes for storage from an automatic feed and manual walk up**

** For basic bulding block unit*

*** Average throughput in specimen containers per hour per device*

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

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Laboratory automation systems and workcells

Part 10 of 13	Sarstedt, Inc. Peter Rumswinkel, VP/GM sarstedt@bellsouth.net P. O. Box 468, Newton, NC 28658 800-257-5101 www.sarstedt.com	Siemens Healthcare Diagnostics Sepehr Seyedzadeh 511 Benedict Avenue, Tarrytown, NY 10591 914-524-3827 www.usa.siemens.com/diagnostics
Name of system/First year installed/No. of 2010 contracts signed	Sarstedt PVS/—	ADVIA Solutions/1998/—
No. of live sites installed in N. America/Europe/Asia-Australia	—	>150 U.S./>500 worldwide
Automation products that are available		
• Pre-analytical processor/Total laboratory automation	yes/no	yes/yes
• Automated functions: Accessioning/Track load/Centrifugation/Decapping	yes/—/no/yes	yes/yes/yes/yes
• Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing	yes/yes/yes/yes	yes/no/no/no/various partnerships in place
• Automated functions: Storage-retrieval/Intelligent sample routing	no/yes	yes/yes
• SW: Dedicated Process Control/Middleware control using LIS/Architecture	yes/yes/open	yes/yes/—
• Company has dedicated automation support team/Remote sys. monitoring	yes/yes	yes/yes
Software features/functionality		
• Patient demographics and insurance data/Rules-based architecture	—/automation SW feature	LIS feature/automation SW feature
• Supports data retrieval/Internet connectivity	automation SW feature/—	automation SW feat./LIS feature
• Online real-time help system/QC/Stats and management reports	—/—/automation SW feature	automation SW feature/automation SW feature/automation SW feature
• Evaluates validity and releasability of results from automated analyzers	—	automation SW feature
• Specimen tracking/Priority processing/Random-access spec. movement	automation SW feature/automation SW feature/—	automation SW feature/automation SW feature/automation SW feature
• Supports accession number redundancy (duplicate specimen ID)	automation SW feature	automation SW feature
• Supports specimen carrier and level identification	automation SW feature	automation SW feature
• Unique bar-code number per container required	automation SW feature	automation SW feature
• Specimen routing/Multistop routing (one tube to multiple workstations)	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Specimen scheduling/Instrument scheduling	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Routes test to workstation/Automatic reflex, repeat, dilutions	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Supports multiple HW configuration/Supports other proprietary transport. HW	automation SW feature/—	automation SW feature/automation SW feature
• Sample storage and retrieval SW/Supports approved CLSI standards	—/automation SW feature	automation SW feature/automation SW feature
LIS(s) and versions interfaced and live w/LAS/How LIS(s) are interfaced with your LAS	—	Siemens, Cerner, Meditech, SCC Soft, Misys, Data Innovations, OSI, Telepath-iSoft, Netlab, LMX Labzis II, SCL 2000, others/ASTM
Transportation systems available	no	yes
• Model/Dimensions* (H × W × D)*/Conforms to CLSI Stand. Auto 1-5	—	—/950 × 2,000 × 530 mm/yes
• Containers device accommodates/Average throughput in cm per second	—	16, 13 × 100; 16, 13 × 75, others/71.6
• Supports automatic rerouting for reflex-repeat-dilutions	—	yes
• Modular HW/Installed options/Device can operate in track and manual mode	—	yes/floor and subfloor mounted/yes
• Required utilities/Required maintenance	—	compressed air, electricity, water/weekly, monthly, quarterly, annually
• Carrier type/Scalable system	—	single specimen container per carrier/yes
Automated centrifugation available	no	yes
• Model/Dimensions (H × W × D)/Conforms to CLSI Stand. Auto 1-5	—	—/1,900 × 1,570 × 860 mm/yes
• Maximum throughput/Containers device accommodates	—	300/16, 13 × 100; 16, 13 × 75, others
• Can identify tube types for custom programmed rate and spin times per run	—	yes
• More than one centrifuge can be connected to track system	—	yes
• For multi-unit centrifuge, each centrifuge operates independently for rate and time	—	yes
• Maintenance required	—	weekly, monthly, quarterly, annually
Automated input/accessioning available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	—/—/yes/1200	sample manager/1,900 × 2,040 × 860 mm/yes/325
• Containers device accommodates/Dedicated lanes for stat samples	16, 13 × 100; 16, 13 × 75; 13 × 65 to 16 × 100/—	16, 13 × 100; 16, 13 × 75, others/yes
• Maximum No. of samples that can be loaded/Maintenance required	up to 600, configuration dependent/quarterly	1,000/weekly, monthly, quarterly, annually
Automated decapping available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	—/configuration dependent/yes/1,200	—/included in centrifuge module/yes/240; independent module/550
• Containers device accommodates/Maintenance required	16, 13 × 100; 16, 13 × 75, multiple/quarterly	16, 13 × 100; 16, 13 × 75, others/weekly, monthly, quarterly, annually
• Removes multiple size tube caps per run/Removes screw type sample caps	yes/yes	yes/yes
Automated sorting available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	—/configuration dependent/yes/1,200	sample manager/1,900 × 2,040 × 860 mm/yes/325
• Containers device accommodates/Software can sort by	16, 13 × 100; 16, 13 × 75, multiple/specimen, method, output	16, 13 × 100; 16, 13 × 75, others/specimen, method, output
Specimen integrity monitor available	yes	onboard each instrument
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	—/configuration dependent/yes/700	integrated on chemistry instrument
• Containers device accommodates/Maintenance required	16, 13 × 100; 16, 13 × 75, multiple/quarterly	16, 13 × 100; 16, 13 × 75, others/—
Automated aliquotting available	yes	no
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	—/configuration dependent/yes/dependent upon number of aliquots and their volumes	—
• Containers device accommodates	16, 13 × 100; 16, 13 × 75, multiple	—
• Inspects samples for bar code/Detects and reports clots in specimen	yes/yes	—
• Detects and reports quantity not sufficient specimens/Maintenance required	yes/quarterly	—
Instrument (analyzer) interfaces		
• Rules-based instrument interface control subsystem	no	yes
• Process control of instrument via control subsystem	no	yes
Physical/hardware (instrument/specimen) interface		
• Hematology/Chemistry/Coagulation	—	robotic arm interface/point-of-reference sampling/robotic arm interface
• Immunoassay/Urinalysis	—	point-of-reference sampling, robotic arm interface/point-of-reference sampling
Instruments to which your system or product is interfaced	—	Advia 120/2120, Advia Centaur/Centaur XP, Immulite 2000/Advia 1500/500/1650/1800/2400; Stago, RxL, CA-7000, Dimension Vista
Other robotic products/components to which system or product is linked	—	—
Automated recapper or sealer available	recapper	no
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	—/configuration dependent/yes/1,200	—
• Recaps-seals multiple size tubes simult./Containers device accommodates	yes/16, 13 × 100; 16, 13 × 75; 13–16 mm. in diameter	—
• Maintenance required	quarterly	—
Automated storage and retrieval available	no	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	—	sample manager/1,900 × 2,040 × 860 mm/yes/325
• Containers device accommodates/Connects to the track	—	16, 13 × 100; 16, 13 × 75, others/yes
• Room temperature/Minimum and maximum number of tubes stored per module	—	yes/1 and 1,000
• Multiple size tubes can be stored in the same module/Maintenance required	—	yes/weekly, monthly, quarterly, annually
• Refrigerated storage and retrieval capability	—	no
Longitudinal upgrade pathway or plan to protect users' investments	systems are upgradeable	flexible and expandable: can contain as few as 2 interfaced components-instruments and can expand to up to 16 interfaces
Average time to install/Who provides service, support/Hours support is available	2–3 weeks/Sarstedt or authorized Sarstedt service co./contract dependent	configuration dependent/Siemens Heathcare Diagnostics/24–7
On-site biomedical engineer required/User group meets regularly	no/no	no/yes
List price	configuration dependent	varies by configuration
Individual list prices for components		
• Process control SW/Transportation systems/Auto. centrifugation	—	—
• Auto. input, accession/Auto. decap/Auto. sort/Auto. storage and retrieval	—	—
• Specimen integrity monitor/Automated aliquot	—	—
• Instrument (analyzer) interfaces/Automated recap	—	—
Distinguishing features (supplied by company) ** For basic bulding block unit* *** Average throughput in specimen containers per hour per device*	bulk loading module: tubes are dumped into a hopper, eliminating need for pre-racking; modular design enables configuration based on individual requirements; screw cap recapping; manufacturer of instr. and corresponding consumables	high-throughput lab automation with broad menu, single LIS connection, flexible configurations and ability to connect multiple disciplines to same track system: (chemistry, immunoassay, hematology, coagulation, urine)

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Laboratory automation systems and workcells

Part 11 of 13

	Siemens Healthcare Diagnostics Tim Keating 511 Benedict Avenue, Tarrytown, NY 10591 302-631-9482 www.usa.siemens.com/diagnostics	Siemens Healthcare Diagnostics Tim Keating 511 Benedict Avenue, Tarrytown, NY 10591 302-631-9482 www.usa.siemens.com/diagnostics
Name of system/First year installed/No. of 2010 contracts signed	StreamLab Analytical Workcell/2002/—	VersaCell System/2002/80
No. of live sites installed in N. America/Europe/Asia-Australia	>140 U.S./>275 worldwide	160/>1,000 worldwide
Automation products that are available		
• Pre-analytical processor/Total laboratory automation	yes/yes	yes/no
• Automated functions: Accessioning/Track load/Centrifugation/Decapping	yes/yes/yes/yes	no/no/no/no
• Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing	yes/analyzer removes aliquot/no/yes	yes/no/no/no
• Automated functions: Storage-retrieval/Intelligent sample routing	yes/yes	yes/yes
• SW: Dedicated Process Control/Middleware control using LIS/Architecture	yes/yes/open	yes/yes/closed
• Company has dedicated automation support team/Remote sys. monitoring	yes/yes	yes/yes
Software features/functionality		
• Patient demographics and insurance data/Rules-based architecture	automation SW and LIS feature/automation SW feature	LIS feature/automation SW feature
• Supports data retrieval/Internet connectivity	automation SW feature/automation SW feature	automation/SW feature/—
• Online real-time help system/QC/Stats and management reports	automation SW feature/automation SW feature/automation SW feature	—/LIS feature/automation SW feature
• Evaluates validity and releasability of results from automated analyzers	automation SW feature	LIS feature
• Specimen tracking/Priority processing/Random-access spec. movement	automation SW feature/automation SW feature/automation SW feature	automation SW feature/automation SW feature/automation SW feature
• Supports accession number redundancy (duplicate specimen ID)	automation SW feature	automation SW feature
• Supports specimen carrier and level identification	automation SW and LIS feature	automation SW and LIS feature
• Unique bar-code number per container required	automation SW and LIS feature	automation SW and LIS feature
• Specimen routing/Multistop routing (one tube to multiple workstations)	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Specimen scheduling/Instrument scheduling	automation SW and LIS feature/automation SW and LIS feature	automation SW feature/automation SW feature
• Routes test to workstation/Automatic reflex, repeat, dilutions	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Supports multiple HW configuration/Supports other proprietary transport. HW	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Sample storage and retrieval SW/Supports approved CLSI standards	automation SW feature/automation SW feature	automation SW feature/—
LIS(s) and versions interfaced and live w/LAS/How LIS(s) are interfaced with your LAS	Cerner, Meditech, SCC, Misys, CHCS, LabGem, Swiss Lab, Medicom, Izasa, Confidentia, others/DBASTM, Dimension Protocol, HL7, ASTM	—/ASTM
Transportation systems available	yes	yes
• Model/Dimensions* (H × W × D)*/Conforms to CLSI Stand. Auto 1-5	StreamLab/60 × 70 × 35 inches/yes	VersaCell System/70 × 51 × 41 inches/—
• Containers device accommodates/Average throughput in cm per second	16, 13 × 100; 16, 13 × 75/300 tubes per hour	16, 13 × 100; 16, 13 × 75/not a track-based system
• Supports automatic rerouting for reflex-repeat-dilutions	yes	yes
• Modular HW/Installed options/Device can operate in track and manual mode	yes/floor mounted/yes	yes/floor mounted/yes
• Required utilities/Required maintenance	compressed air, electricity/weekly	electricity/annually
• Carrier type/Scalable system	single specimen container per carrier/yes	single specimen container per carrier/yes
Automated centrifugation available	yes	no
• Model/Dimensions (H × W × D)/Conforms to CLSI Stand. Auto 1-5	StreamLab/31 × 23 × 29 inches/yes	—
• Maximum throughput/Containers device accommodates	up to 400 per hour/16, 13 × 100; 16, 13 × 75, handles various sizes simultan.	—
• Can identify tube types for custom programmed rate and spin times per run	yes	—
• More than one centrifuge can be connected to track system	no	—
• For multi-unit centrifuge, each centrifuge operates independently for rate and time	—	—
• Maintenance required	weekly, monthly	—
Automated input/accessioning available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	StreamLab/60 × 70 × 35 inches/yes/300 tubes	VersaCell System/70 × 51 × 41 inches/—/200
• Containers device accommodates/Dedicated lanes for stat samples	16, 13 × 100; 16, 13 × 75/yes	16, 13 × 100; 16, 13 × 75/yes
• Maximum No. of samples that can be loaded/Maintenance required	up to 600/daily, monthly	200/annually
Automated decapping available	yes	no
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	StreamLab/integrated with input-output track/yes/300	—
• Containers device accommodates/Maintenance required	16, 13 × 100; 16, 13 × 75/daily, monthly	—
• Removes multiple size tube caps per run/Removes screw type sample caps	yes/yes	—
Automated sorting available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	StreamLab/integrated with input-output track/yes/300	VersaCell System/70 × 51 × 41 inches/no/200
• Containers device accommodates/Software can sort by	16, 13 × 100; 16, 13 × 75/specimen, method, output	16, 13 × 100; 16, 13 × 75/specimen, method, output
Specimen integrity monitor available	yes	no
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	StreamLab/integrated with analyzer/yes/300	—
• Containers device accommodates/Maintenance required	16, 13 × 100; 16, 13 × 75/—	—
Automated aliquotting available	yes	no
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	StreamLab/integrated with sample transfer module/yes/300	—
• Containers device accommodates	16, 13 × 100; 16, 13 × 75	—
• Inspects samples for bar code/Detects and reports clots in specimen	yes/yes	—
• Detects and reports quantity not sufficient specimens/Maintenance required	yes/daily	—
Instrument (analyzer) interfaces		
• Rules-based instrument interface control subsystem	yes	yes
• Process control of instrument via control subsystem	yes	yes
Physical/hardware (instrument/specimen) interface		
• Hematology/Chemistry/Coagulation	no/pt-of-ref sampling, rob. arm interface/pt-of-ref sampling, rob. arm interf.	no/point-of-reference sampling/no
• Immunoassay/Urinalysis	point-of-reference sampling, robotic arm interface/no	point-of-reference sampling/no
Instruments to which your system or product is interfaced	Dimension RxL Max, Dimension Vista 1500/500, Immulite 2000 and 2500; Sysmex CA 7000; Dimension EXL with LM, Advia Centaur	Advia 1800, Immulite Immunoassay, Advia Centaur, Dimension EXL with LM, Dimension EXL 200, Dimension RxL MAX
Other robotic products/components to which system or product is linked	—	StreamLab analytical workcell and Advia automation workcells
Automated recapper or sealer available	yes	no
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	StreamLab/40 × 36 × 17 inches/yes/300	—
• Recaps-seals multiple size tubes simult./Containers device accommodates	yes/13 × 100; 13 × 75; 16 × 100; 16 × 75	—
• Maintenance required	daily, monthly	—
Automated storage and retrieval available	yes	no
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	StreamLab SW and input-output module/60 × 70 × 35 inches/yes/300	—
• Containers device accommodates/Connects to the track	13 × 100; 13 × 75; 16 × 100; 16 × 75 (47,952 storage capacity)/no	—
• Room temperature/Minimum and maximum number of tubes stored per module	yes/up to 576	—
• Multiple size tubes can be stored in the same module/Maintenance required	yes/—	—
• Refrigerated storage and retrieval capability	yes	—
Longitudinal upgrade pathway or plan to protect users' investments	StreamLab systems are scalable with open configurations	continue connectivity development and software enhancements
Average time to install/Who provides service, support/Hours support is available	five days/Siemens/24–7	two days/Siemens Healthcare Diagnostics/24–7
On-site biomedical engineer required/User group meets regularly	no/yes	no/no
List price	—	—
Individual list prices for components		
• Process control SW/Transportation systems/Auto. centrifugation	—	—
• Auto. input, accession/Auto. decap/Auto. sort/Auto. storage and retrieval	—	—
• Specimen integrity monitor/Automated aliquot	—	—
• Instrument (analyzer) interfaces/Automated recap	—	—
Distinguishing features (supplied by company)	integrated automation solution with open architecture allows custom configuration and reconfiguraton by incorporating a 90-degree track turn, which helps maintain a small footprint	breadth of menu with flexibility of connectivity; throughput, pre- and post-analytical sample management

** For basic bulding block unit*

*** Average throughput in specimen containers per hour per device*

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

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Laboratory automation systems and workcells

Part 12 of 13	**Sysmex America** **Nilam Patel** pateln@sysmex.com **1 Nelson C. White Parkway, Mundelein, IL 60060** **800-379-7639 ext. 4309** www.sysmex.com/usa	**Sysmex America** **Krista Curcio** curciok@sysmex.com **1 Nelson C. White Parkway, Mundelein, IL 60060** **800-379-7639 ext. 4613** www.sysmex.com/usa
Name of system/First year installed/No. of 2010 contracts signed	**HST-N/1991/50+**	**XE-Alpha N/1991/30**
No. of live sites installed in N. America/Europe/Asia-Australia	**350/1,600+ (Europe, Asia, Latin America, Canada, & Australia)**	**250/650+ (Europe, Asia, Latin America, Canada, Australia)**
Automation products that are available		
• Pre-analytical processor/Total laboratory automation	**no/no**	**—/—**
• Automated functions: Accessioning/Track load/Centrifugation/Decapping	**yes/no/no/no**	**yes/—/no/no**
• Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing	**yes/no/—/no**	**yes/no/—/no**
• Automated functions: Storage-retrieval/Intelligent sample routing	**no/yes**	**no/—**
• SW: Dedicated Process Control/Middleware control using LIS/Architecture	**yes/yes/closed**	**yes/yes/closed**
• Company has dedicated automation support team/Remote sys. monitoring	**yes/yes**	**yes/yes**
Software features/functionality		
• Patient demographics and insurance data/Rules-based architecture	**automation SW feature/automation SW feature**	**—/automation SW feature**
• Supports data retrieval/Internet connectivity	**automation SW feature/automation SW feature**	**automation SW feature/LIS feature**
• Online real-time help system/QC/Stats and management reports	**automation SW feature /automation SW feature /LIS feature**	**automation SW feature /automation SW feature /LIS feature**
• Evaluates validity and releasability of results from automated analyzers	**automation SW feature**	**automation SW feature**
• Specimen tracking/Priority processing/Random-access spec. movement	**automation SW feature/automation SW feature/yes**	**automation SW feature/automation SW feature/—**
• Supports accession number redundancy (duplicate specimen ID)	**automation SW feature**	**automation SW feature**
• Supports specimen carrier and level identification	**automation SW feature**	**automation SW feature**
• Unique bar-code number per container required	**automation SW feature**	**automation SW feature**
• Specimen routing/Multistop routing (one tube to multiple workstations)	**automation SW feature/automation SW feature**	**automation SW feature/automation SW feature**
• Specimen scheduling/Instrument scheduling	**—/—**	**—/—**
• Routes test to workstation/Automatic reflex, repeat, dilutions	**automation SW feature/automation SW feature**	**automation SW feature/automation SW feature**
• Supports multiple HW configuration/Supports other proprietary transport. HW	**automation SW feature/automation SW feature**	**—/automation SW feature**
• Sample storage and retrieval SW/Supports approved CLSI standards	**automation SW feature/automation SW feature**	**—/—**
LIS(s) and versions interfaced and live w/LAS/How LIS(s) are interfaced with your LAS	**Cerner (Classic and Millennium), Misys, SCC, Meditech, GE/HL7 and ASTM**	**Cerner (Classic and Millennium), Misys, SCC, Meditech, GE/HL7 and ASTM**
Transportation systems available	**yes**	**yes**
• Model/Dimensions* (H × W × D)*/Conforms to CLSI Stand. Auto 1-5	**HSTN/depends on configuration/yes**	**Alpha N/2 × 7.3 × 3.4 feet**
• Containers device accommodates/Average throughput in cm per second	**16 × 75; 13 × 75/minutes throughput 150/hour; max as high as lab needs/hour**	**16 × 75; 13 × 75/based on number of analyzers**
• Supports automatic rerouting for reflex-repeat-dilutions	**yes**	**no**
• Modular HW/Installed options/Device can operate in track and manual mode	**yes/floor mounted/yes**	**yes/—/yes**
• Required utilities/Required maintenance	**—**	**—**
• Carrier type/Scalable system	**rack/yes**	**rack/no**
Automated centrifugation available	**no**	**no**
• Model/Dimensions (H × W × D)/Conforms to CLSI Stand. Auto 1-5	**—**	**—**
• Maximum throughput/Containers device accommodates	**—**	**—**
• Can identify tube types for custom programmed rate and spin times per run	**—**	**—**
• More than one centrifuge can be connected to track system	**—**	**—**
• For multi-unit centrifuge, each centrifuge operates independently for rate and time	**—**	**—**
• Maintenance required	**—**	**—**
Automated input/accessioning available	**yes**	**yes**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**—**	**—**
• Containers device accommodates/Dedicated lanes for stat samples	**—**	**—/no**
• Maximum No. of samples that can be loaded/Maintenance required	**200 samples per input module/—**	**100 samples per input module/—**
Automated decapping available	**no**	**no**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**—**	**—**
• Containers device accommodates/Maintenance required	**—**	**—**
• Removes multiple size tube caps per run/Removes screw type sample caps	**—**	**—**
Automated sorting available	**yes**	**no**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**PVT TS-series: low-mid volume ~5 × 3 feet; high volume ~6 × 5 feet**	**—/—/yes/—**
• Containers device accommodates/Software can sort by	**13 × 75/specimen, method, output**	**—/—**
Specimen integrity monitor available	**yes (located within the analyzers)**	**yes (located within the analyzers)**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**—**	**—**
• Containers device accommodates/Maintenance required	**—**	**—**
Automated aliquotting available	**no**	**no**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	**—**	**—**
• Containers device accommodates	**—**	**—**
• Inspects samples for bar code/Detects and reports clots in specimen	**—**	**—**
• Detects and reports quantity not sufficient specimens/Maintenance required	**—**	**—**
Instrument (analyzer) interfaces		
• Rules-based instrument interface control subsystem	**yes**	**yes**
• Process control of instrument via control subsystem	**yes**	**yes**
Physical/hardware (instrument/specimen) interface		
• Hematology/Chemistry/Coagulation	**point-of-reference sampling/—/—**	**—**
• Immunoassay/Urinalysis	**—**	**—**
Instruments to which your system or product is interfaced	**Bio-Rad Variant II Turbo Link A1C analyzer**	**—**
Other robotic products/components to which system or product is linked	**Thermo automation, Lab Interlink/Labotix, IDS**	**—**
Automated recapper or sealer available	**no**	**no**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	**—**	**—**
• Recaps-seals multiple size tubes simult./Containers device accommodates	**—**	**—**
• Maintenance required	**—**	**—**
Automated storage and retrieval available	**no**	**no**
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	**—**	**—**
• Containers device accommodates/Connects to the track	**—**	**—**
• Room temperature/Minimum and maximum number of tubes stored per module	**—**	**—**
• Multiple size tubes can be stored in the same module/Maintenance required	**—**	**—**
• Refrigerated storage and retrieval capability	**—**	**—**
Longitudinal upgrade pathway or plan to protect users' investments	**—**	**—**
Average time to install/Who provides service, support/Hours support is available	**<3 days/Sysmex/24–7**	**1 day/Sysmex/24–7**
On-site biomedical engineer required/User group meets regularly	**no/no**	**no/no**
List price	**dependent upon configuration, contact Sysmex**	**dependent upon configuration, contact Sysmex**
Individual list prices for components		
• Process control SW/Transportation systems/Auto. centrifugation	**—**	**—**
• Auto. input, accession/Auto. decap/Auto. sort/Auto. storage and retrieval	**—**	**—**
• Specimen integrity monitor/Automated aliquot	**—**	**—**
• Instrument (analyzer) interfaces/Automated recap	**—**	**—**
Distinguishing features (supplied by company)	**scalable, flexible, and reliable automation and instrument systems; fast installation (<3 days); scalable multi-site, multi-system middleware solutions that are developed, tested, and supported by Sysmex**	**scalable and flexible configurations with proven history; one-day installation; scalable middleware solutions are developed and supported by Sysmex**

** For basic bulding block unit*

*** Average throughput in specimen containers per hour per device*

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

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Laboratory automation systems and workcells

Part 13 of 13	Yaskawa America Inc., Motoman Robotics Division Craig Rubenstein craig.rubenstein@motoman.com 100 Automation Way, Miamisburg, OH 45342 949-263-2648 www.motoman.com/labauto/	Yaskawa America Inc., Motoman Robotics Division Craig Rubenstein craig.rubenstein@motoman.com 100 Automation Way, Miamisburg, OH 45342 949-263-2648 www.motoman.com/labauto/
Name of system/First year installed/No. of 2010 contracts signed	Autosorter II/2006/4	Autosorter III/2008/4
No. of live sites installed in N. America/Europe/Asia-Australia	22/—/—	22/—/—
Automation products that are available		
• Pre-analytical processor/Total laboratory automation	yes/no	yes/no
• Automated functions: Accessioning/Track load/Centrifugation/Decapping	yes/yes/yes/yes	yes/yes/yes/yes
• Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing	yes/yes/no/yes (recapping)	yes/yes/no/yes (recapping)
• Automated functions: Storage-retrieval/Intelligent sample routing	no/yes	no/yes
• SW: Dedicated Process Control/Middleware control using LIS/Architecture	yes/yes/open	yes/yes/open
• Company has dedicated automation support team/Remote sys. monitoring	yes/yes	yes/yes
Software features/functionality		
• Patient demographics and insurance data/Rules-based architecture	—/automation SW feature	—/automation SW feature
• Supports data retrieval/Internet connectivity	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Online real-time help system/QC/Stats and management reports	automation SW feature/ automation SW feature/automation SW feature	automation SW feature/ automation SW feature/automation SW feature
• Evaluates validity and releasability of results from automated analyzers	—	—
• Specimen tracking/Priority processing/Random-access spec. movement	automation SW feature/ automation SW feature/automation SW feature	automation SW feature/ automation SW feature/automation SW feature
• Supports accession number redundancy (duplicate specimen ID)	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Supports specimen carrier and level identification	automation SW feature	automation SW feature
• Unique bar-code number per container required	automation SW feature	automation SW feature
• Specimen routing/Multistop routing (one tube to multiple workstations)	automation SW feature/ automation SW feature	automation SW feature/ automation SW feature
• Specimen scheduling/Instrument scheduling	—/—	—/—
• Routes test to workstation/Automatic reflex, repeat, dilutions	automation SW feature/—	automation SW feature/—
• Supports multiple HW configuration/Supports other proprietary transport. HW	automation SW feature/automation SW feature	automation SW feature/automation SW feature
• Sample storage and retrieval SW/Supports approved CLSI standards	automation SW feature/automation SW feature	automation SW feature/automation SW feature
LIS(s) and versions interfaced and live w/LAS/How LIS(s) are interfaced with your LAS	Cerner, Triple G, Surround/ODBC, HL7	Cerner, Triple G, Surround/ODBC, HL7
Transportation systems available	yes	yes
• Model/Dimensions* (H × W × D)*/Conforms to CLSI Stand. Auto 1-5	—/configuration dependent/yes	—/configuration dependent/yes
• Containers device accommodates/Average throughput in cm per second	16, 13 × 100; 16, 13 × 75, 9–16 mm diameter, 75–100 mm height/50	16, 13 × 100; 16, 13 × 75, 9–16 mm diameter, 75–100 mm height/50
• Supports automatic rerouting for reflex-repeat-dilutions	yes	no
• Modular HW/Installed options/Device can operate in track and manual mode	no/floor mounted/yes	no/floor mounted/yes
• Required utilities/Required maintenance	compressed air, electricity/daily, monthly, annually	electricity/daily, monthly, annually
• Carrier type/Scalable system	single and multiple (30) specimen container per carrier/yes	single specimen container per carrier/yes
Automated centrifugation available	no	yes
• Model/Dimensions (H × W × D)/Conforms to CLSI Stand. Auto 1-5	—	Hettich Rotanta/81 × 87 × 42 inches, 9–16 mm diameter, 75–100 mm height/yes
• Maximum throughput/Containers device accommodates	—	300+/16, 13 × 100; 16, 13 × 75, 9–16 mm diameter, 75–100 mm height
• Can identify tube types for custom programmed rate and spin times per run	—	no
• More than one centrifuge can be connected to track system	—	no
• For multi-unit centrifuge, each centrifuge operates independently for rate and time	—	—
• Maintenance required	—	daily, monthly, annually
Automated input/accessioning available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	AutoSorter II/6 × 5 × 5 feet/yes/1,000	AutoSorter III/81 × 87 × 42 inches (enclosed within ASIII footprint)/yes/800
• Containers device accommodates/Dedicated lanes for stat samples	16, 13 × 100; 16, 13 × 75, 9–16 mm diameter, 75–100 mm height/yes	16, 13 × 100; 16, 13 × 75, 9–16 mm diameter, 75–100 mm height/yes
• Maximum No. of samples that can be loaded/Maintenance required	1,000/daily, monthly, annually	300/daily, monthly, annually
Automated decapping available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	—/fits within footprint of AutoSorter II/yes/1,000	AutoSorter III/81 × 87 × 42 inches (enclosed within ASIII footprint)/yes/800
• Containers device accommodates/Maintenance required	16, 13 × 100; 16, 13 × 75, 9–16 mm diameter, 75–100 mm height/daily, monthly, annually	16, 13 × 100; 16, 13 × 75, 9–16 mm diameter, 75–100 mm height/daily, monthly, annually
• Removes multiple size tube caps per run/Removes screw type sample caps	yes/yes	yes/yes
Automated sorting available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	AutoSorter II/6 × 5 × 5 feet/yes/1,000	AutoSorter III/81 × 87 × 42 inches/yes/800
• Containers device accommodates/Software can sort by	16, 13 × 100; 16, 13 × 75, 9–16 mm diameter, 75–100 mm height/specimen, method, output	16, 13 × 100; 16, 13 × 75, 9–16 mm diameter, 75–100 mm height/specimen, method, output
Specimen integrity monitor available	—	—
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	—	—
• Containers device accommodates/Maintenance required	—	—
Automated aliquotting available	yes	planned
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**	Aloka APS/68 × 101 × 43 inches/yes/500	Aloka module/to be determined/yes/100–200
• Containers device accommodates	16, 13 × 100; 16, 13 × 75	16, 13 × 100; 16, 13 × 75
• Inspects samples for bar code/Detects and reports clots in specimen	yes/yes	yes/yes
• Detects and reports quantity not sufficient specimens/Maintenance required	yes/daily, monthly, annually	yes/daily, monthly, annually
Instrument (analyzer) interfaces		
• Rules-based instrument interface control subsystem	no	no
• Process control of instrument via control subsystem	no	no
Physical/hardware (instrument/specimen) interface		
• Hematology/Chemistry/Coagulation	Sysmex HST	Sysmex HST
• Immunoassay/Urinalysis	—	—
Instruments to which your system or product is interfaced	Sysmex hematology automation	—
Other robotic products/components to which system or product is linked	MDS (now Innotek) single-specimen carrier transportation system	ILAS, MDS (now Innotek) single-specimen carrier transportation system
Automated recapper or sealer available	yes (recapper)	planned
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	AutoSorter II/6 × 5 × 5 feet/yes/>1,800	AutoSorter III/to be determined/yes/800
• Recaps-seals multiple size tubes simult./Containers device accommodates	yes/16, 13 × 100; 16, 13 × 75	yes/16, 13 × 100; 16, 13 × 75
• Maintenance required	daily, monthly, annually	daily, monthly, annually
Automated storage and retrieval available	yes	yes
• Model/Dimen. (H × W × D)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*	—	—
• Containers device accommodates/Connects to the track	—	—
• Room temperature/Minimum and maximum number of tubes stored per module	—	—
• Multiple size tubes can be stored in the same module/Maintenance required	—	—
• Refrigerated storage and retrieval capability	—	—
Longitudinal upgrade pathway or plan to protect users' investments	flexible, open design permits change of tubes/racks as instrumentation changes; connectivity and functionality upgrades	flexible, open design permits change of tubes/racks as instrumentation changes; connectivity and functionality upgrades
Average time to install/Who provides service, support/Hours support is available	<1–2 weeks, more for complex systems/Motoman/24–7 hotline	<1 week/Motoman/24–7 hotline
On-site biomedical engineer required/User group meets regularly	no/no	no/no
List price	$250,000	$195,000
Individual list prices for components		
• Process control SW/Transportation systems/Auto. centrifugation	included/configuration dependent/—	included/configuration dependent/$39,500
• Auto. input, accession/Auto. decap/Auto. sort/Auto. storage and retrieval	included/configuration dependent/included/—	included/included/included/—
• Specimen integrity monitor/Automated aliquot	—/configuration dependent	—/to be determined
• Instrument (analyzer) interfaces/Automated recap	—/configuration dependent	—/to be determined
Distinguishing features (supplied by company)	customization-friendly; designed and built in the U.S.; independent of IVD instrument manufacturers; free-standing, high-throughput instruments or integrated lines	customization-friendly; designed and built in the U.S.; independent of IVD instrument manufacturers; free-standing, small footprint, modular automation

** For basic bulding block unit*

*** Average throughput in specimen containers per hour per device*

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

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