

AUTOMATED TISSUE PROCESSORS

Part 1/4	General Data	Leica Biosystems	Leica Biosystems
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Name of automated tissue processor	RTP/H	ASP6025	Peloris II
Intent of automated tissue processor featured in this guide Type of tissue processing performed	medical care, research use conventional	medical care, research use conventional, rapid	medical care, research use conventional, rapid
First-ever installation of this tissue processor Total No. of units installed in U.S./Outside U.S. (as of June 2016)	2013 30/—	— —	— —
Company produces and sells its own tissue processors Company sells this product through distribution partners • Vendors with which company partners	yes no —	yes yes NCI in North America	yes yes NCI in North America
Names of other automated tissue processors sold by company	—	Peloris II, ASP300S, ASP6025S, TP2010	ASP300S, ASP6025, ASP6025S, TP2010
Provide list of client sites to potential customers on request	yes (partial list of comparable sites)	no (information is confidential)	no (information is confidential)
Model type • Dimensions (H × W × D) • Weight empty/Weight fully loaded	floor standing 45 × 28 × 29 in. 437 lbs./537 lbs.	floor standing 150 × 68 × 75 cm 463 lbs./—	floor standing 59 × 33.7 × 28.4 in. 730 lbs./950 lbs.
Automatic programmable start/Automatic programmable shutdown	yes/yes	yes/yes	yes/yes
Reagent configuration Mechanics of tissue processor Fume control	open reagent system vacuum, heat, fluid mixing, pressure onboard filters, vented	open reagent system vacuum, heat, pressure onboard filters, vented	open reagent system vacuum, heat, pressure onboard filters, vented
Specimen retort • Maximum block capacity per retort • No. of retorts per instrument	360 1	300 1	300 2
Type of specimen cassettes recommended • Recommended cassette inserts • Prohibited cassette inserts • Minimum–maximum No. of cassettes per process run • Cassette throughput per hour	standard, biopsy — none 1–360 —	standard, biopsy, specialty — — 1–300 dependent on protocol length	standard, biopsy, specialty mesh, mega, multicompartmental, small pore size — 1–300 per retort dependent on protocol length
Volume of fluids that can be kept on instrument	4 L formalin, 4 L alcohol, 4 L xylene, 4 L paraffin	5 L formalin, 5 L alcohol, 5 L xylene, 5 L paraffin	—
Reagent mode	xylene, xylene-free, reagent substitutes	xylene, xylene-free, reagent substitutes (open system)	xylene, xylene-free, reagent substitutes (open system)
Specimen-processing time • Minimum–maximum processing time for biopsy specimens Recommended minimum–maximum specimen thickness/size • Minimum–maximum processing time for resection specimens Recommended minimum–maximum specimen thickness/size • Minimum–maximum processing time for bone specimens Recommended minimum–maximum specimen thickness/size	1.5 hours to 2 hours 1 mm to 2 mm 8 hours to 10 hours 3 mm to 5 mm 6 hours to 10 hours 3 mm to 4 mm	dependent on customer validation 0.05 mm to about 2 mm dependent on customer validation 2.5 mm to 5 mm dependent on customer validation 2 mm to 5 mm	dependent on customer validation 0.3 mm to about 3 mm dependent on customer validation — dependent on customer validation —
User interface	touchscreen	touchscreen	touchscreen
Types of quality control • Onboard quality control for processing program	temperature, downloadable run reports, fill-level sensing, pressure/vacuum yes	temperature, alcohol concentration measurement —	temperature, pressure/vacuum, liquid level sensors in each retort —
Management of waste	manually by user	manually by user; autorotation can discard alcohol/ xylene waste in waste bottle	remote fill and drain
Required user maintenance • User maintenance records kept on instrument	weekly some (reagent management system keeps track of reagent/wax usage)	daily, weekly, quarterly —	daily, weekly, quarterly —
Required maintenance by vendor's service personnel • Vendor maintenance records kept on instrument	annually no	annually no	annually no
User training and installation • User training included with purchase • Total time for standard installation and basic training • Approximate length of training per typical user • Follow-up training available • Extra charge for follow-up training	no 2 days 0.5 hours yes (for new employees) yes (travel expenses for company's technical representative to be paid by customer)	yes 8–16 hours 13.5 hours yes (if requested by customer or indicated by performance in corporate training session) —	yes 8–16 hours 13.5 hours yes (if requested by customer or indicated by performance in corporate training session) —
Instrument list price (as of June 2016)	\$56,000	—	—
Warranty • Length of warranty coverage before purchasing service contract	yes 1 year	yes 1 year	yes 1 year
Service contract • Cost of annual service contract (as of June 2016)	warranty provided by manufacturer \$6,500	warranty provided by manufacturer, service contract purchase available —	warranty provided by manufacturer, service contract purchase available —
Primary instrument safety features	battery backup; protocol retrieval; audible/remote alarms	battery backup; safe mode; reagent substitution	event codes if power lost; battery backup available for purchase; instrument resumes runs when power restored
Primary productivity processing features	capable of routine processing and rapid protocols under 1.5 hours, without the use of microwave	autorotation; paraffin top-off; paraffin exchange; xylene exchange; densitometer for accurate alcohol concentration reading; remote fill/drain; RTU bottles interchangeable for simple reagent change	—
Distinguishing features (supplied by company)	• ability to process routine and rapid protocols • reagent management system that does not require need for hydrometer testing • user-friendly touchscreen	• battery backup • safe mode • paraffin top-off/exchange	• high-throughput processing to increase lab productivity • high degree of system efficiency • allows specimen segregation—safe diagnosis

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

Part 2/4	Medite Lab Solutions Mike Kenealy michaelk@medite-group.com 4203 S.W. 34th St. Orlando, FL 32811 888-225-2950 www.medite-group.com	Milestone Medical Angela Kelly a.kelly@milestonemed.com 6475 Technology Ave., Suite F Kalamazoo, MI 49009 866-995-5300 www.milestonemed.com	Milestone Medical Angela Kelly a.kelly@milestonemed.com 6475 Technology Ave., Suite F Kalamazoo, MI 49009 866-995-5300 www.milestonemed.com
See captodayonline.com/productguides for an interactive version of guide			
Name of automated tissue processor	TPC 15 Duo, TPC Trio†	LOGOS	Pathos Delta
Intent of automated tissue processor featured in this guide	medical care, research use	medical care, research use	medical care, research use
Type of tissue processing performed	rapid	conventional, rapid, microwave, hybrid (combination of microwave and conventional heating)	conventional, rapid, microwave
First-ever installation of this tissue processor	1980	2007	2007
Total No. of units installed in U.S./Outside U.S. (as of June 2016)	50+/1,000+ (for both versions of instrument combined)	54/312	68/156
Company produces and sells its own tissue processors	yes	yes	yes
Company sells this product through distribution partners	yes	no	no
• Vendors with which company partners	VWR, Choice, Cancer Diagnostics	—	—
Names of other automated tissue processors sold by company	—	Pathos Delta, LOGOS One, LOGOS J	LOGOS, LOGOS One, LOGOS J
Provide list of client sites to potential customers on request	no (information is confidential)	yes (partial list of comparable sites)	yes (partial list of comparable sites)
Model type	benchtop	floor standing	floor standing
• Dimensions (H × W × D)	50.78 × 28.14 × 28.74 in.	43 × 28 × 30 in.	60 × 28 × 28 in.
• Weight empty/Weight fully loaded	306.44 lbs./330 lbs.	552 lbs./—	552 lbs./—
Automatic programmable start/Automatic programmable shutdown	yes/yes	yes/yes	yes/yes
Reagent configuration	closed/proprietary reagent system	open reagent system	open reagent system
Mechanics of tissue processor	fluid mixing, reagent exchange, reagent dilution	vacuum, heat, reagent exchange, separate paraffin chamber	vacuum, heat, reagent exchange, separate paraffin chamber
Fume control	onboard filters, vented	vented	vented
Specimen retort			
• Maximum block capacity per retort	660 for TPC Trio (3 baskets of 220 cassettes each); 440 for TPC 15 Duo	300	300
• No. of retorts per instrument	3 (3 simultaneous protocols)	2 (1 processing, 1 paraffin)	2 (1 processing, 1 paraffin)
Type of specimen cassettes recommended	standard, biopsy, specialty	standard, biopsy, specialty (mega and super mega)	standard, biopsy, specialty (mega and super mega)
• Recommended cassette inserts	—	—	—
• Prohibited cassette inserts	—	—	—
• Minimum–maximum No. of cassettes per process run	up to 660 for TPC Trio; up to 440 for TPC 15 Duo	1–300	1–300
• Cassette throughput per hour	—	dependent on tissue thickness	—
Volume of fluids that can be kept on instrument	2 L alcohol, 1.5 L xylene	5 L formalin, 4 kg paraffin	5 L formalin, 4 kg paraffin
Reagent mode	xylene, xylene-free, reagent substitutes	xylene, xylene-free, reagent substitutes	xylene, xylene-free, reagent substitutes
Specimen-processing time			
• Minimum–maximum processing time for biopsy specimens Recommended minimum–maximum specimen thickness/size	dependent on customer validation 2.5 mm to 5 mm	47 min. to 2 hours 17 min. <1 mm to <2 mm	47 min. to 2 hours 17 min. <1 mm to <2 mm
• Minimum–maximum processing time for resection specimens Recommended minimum–maximum specimen thickness/size	—	5 hours 56 min. to 7 hours 51 min. <1 mm to <6 mm	5 hours 56 min. to 7 hours 51 min. <1 mm to <6 mm
• Minimum–maximum processing time for bone specimens Recommended minimum–maximum specimen thickness/size	—	1 hour 30 min. to 7 hours 51 min. <2 mm to <5 mm	1 hour 30 min. to 7 hours 51 min. <2 mm to <5 mm
User interface	keypad, keyboard with mouse	touchscreen	touchscreen
Types of quality control	temperature, pressure/vacuum, reagent management	temperature, downloadable run reports, pressure/vacuum, fill-level sensing	temperature, downloadable run reports, pressure/vacuum, fill-level sensing
• Onboard quality control for processing program	no	yes	yes
Management of waste	manually by user	manually by user	manually by user
Required user maintenance	weekly	daily, weekly, monthly	daily, weekly
• User maintenance records kept on instrument	no	no	no
Required maintenance by vendor's service personnel	annually	annually	annually
• Vendor maintenance records kept on instrument	no	no	no
User training and installation			
• User training included with purchase	yes	yes	yes
• Total time for standard installation and basic training	8 hours	12 hours	12 hours
• Approximate length of training per typical user	3 hours	8–12 hours	8–12 hours
• Follow-up training available	yes (upon customer request)	yes (upon customer request)	yes (upon customer request)
• Extra charge for follow-up training	yes (small fee for additional training sessions on location for new personnel)	yes	yes
Instrument list price (as of June 2016)	\$37,900	\$77,250 (140-cassette version), \$86,520 (210-cassette version)†	\$102,000†
Warranty	yes	yes	yes
• Length of warranty coverage before purchasing service contract	1 year	1 year	1 year
Service contract	warranty provided by manufacturer	warranty provided by manufacturer	warranty provided by manufacturer
• Cost of annual service contract (as of June 2016)	\$3,360	\$7,725–\$8,650	\$10,500
Primary instrument safety features	power backup; safety mode	PID (proportional-integral-derivative) temperature control; battery backup; safety mode to protect specimens in power outage; event log; remote alarm	PID (proportional-integral-derivative) temperature control; battery backup; safety mode to protect specimens in power outage; event log; remote alarm
Primary productivity processing features	can run up to 3 different protocols of 220 cassettes each simultaneously	continuous batch processing; standard gallon reagent container use (with 140-cassette version), 4-step, 4-reagent processing	rapid tissue processing
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> highly flexible (e.g., 3 pumping units) and 660 cassettes total capacity; power backup reduces risk fast biopsies can be processed in less than one hour does not use pumps and tubes to move reagents, reducing blockage 	<ul style="list-style-type: none"> standard gallon reagent containers eliminate need for decanting 4-step, 4-reagent protocols improve quality and efficiency, simplify labor demands, reduce cost xylene-free protocols reduce exposure issues and disposal costs and extend paraffin life 	<ul style="list-style-type: none"> 4-step, 4-reagent protocols improve quality and efficiency, simplify labor demands, reduce cost xylene-free protocols reduce exposure issues and disposal costs and extend paraffin life separate paraffin chamber reduces cleaning cycles and contamination
<i>Note: a dash in lieu of an answer means company did not answer question or question is not applicable</i>	† TPC 15 Duo and TPC Trio are same unit except Trio has increased processing capability	† includes PowerVar line conditioner and UPS	† includes PowerVar line conditioner and UPS

AUTOMATED TISSUE PROCESSORS

Part 3/4	Sakura Finetek USA Joshua Greenlee jgreenlee@sakuraus.com 1750 W. 214th St. Torrance, CA 90501 310-972-7800 www.sakura-america.com	Sakura Finetek USA Joshua Greenlee jgreenlee@sakuraus.com 1750 W. 214th St. Torrance, CA 90501 310-972-7800 www.sakura-america.com	Sakura Finetek USA Joshua Greenlee jgreenlee@sakuraus.com 1750 W. 214th St. Torrance, CA 90501 310-972-7800 www.sakura-america.com
See captodayonline.com/productguides for an interactive version of guide			
Name of automated tissue processor	Tissue-Tek VIP 6 Vacuum Infiltration Processor	Tissue-Tek Xpress x50 Rapid Tissue Processor	Tissue-Tek Xpress x120 Rapid Tissue Processor
Intent of automated tissue processor featured in this guide Type of tissue processing performed	medical care, research use conventional	medical care, research use rapid, microwave	medical care, research use rapid, microwave
First-ever installation of this tissue processor Total No. of units installed in U.S./Outside U.S. (as of June 2016)	2008 —	2004 —	2004 —
Company produces and sells its own tissue processors Company sells this product through distribution partners • Vendors with which company partners	yes yes Cardinal Health, WWR International, Government Scientific Source	yes yes Cardinal Health, WWR International, Government Scientific Source	yes yes Cardinal Health, WWR International, Government Scientific Source
Names of other automated tissue processors sold by company	Tissue-Tek Xpress x50 Rapid Tissue Processor, Tissue-Tek Xpress x120 Rapid Tissue Processor	Tissue-Tek Xpress x120 Rapid Tissue Processor, Tissue-Tek VIP 6 AI Vacuum Infiltration Processor	Tissue-Tek Xpress x50 Rapid Tissue Processor, Tissue-Tek VIP 6 AI Vacuum Infiltration Processor
Provide list of client sites to potential customers on request	yes (partial list with consent of installed client sites)	yes (partial list with consent of installed client sites)	yes (partial list with consent of installed client sites)
Model type • Dimensions (H × W × D) • Weight empty/Weight fully loaded	floor standing 52 × 24 × 25 in. 364 lbs./—	floor standing 64 × 34 × 28 in. 617 lbs./—	floor standing 64 × 67 × 28 in. 1,023 lbs./—
Automatic programmable start/Automatic programmable shutdown	yes/yes	yes/yes	yes/yes
Reagent configuration Mechanics of tissue processor	open reagent system vacuum, heat, fluid mixing, pressure, reagent exchange	closed/proprietary reagent system heat, fluid mixing, reagent exchange, low-wattage (60-watt) microwave technology	closed/proprietary reagent system heat, fluid mixing, reagent exchange, low-wattage (60-watt) microwave technology
Fume control	onboard filters, vented	onboard filters, vented	onboard filters, vented
Specimen retort • Maximum block capacity per retort • No. of retorts per instrument	300 1	40 2	40 4
Type of specimen cassettes recommended • Recommended cassette inserts • Prohibited cassette inserts • Minimum–maximum No. of cassettes per process run • Cassette throughput per hour	standard, biopsy, specialty (mega cassettes and Tissue-Tek Paraform Sectionable Cassette System) — — 1–300 dependent on protocol	standard, biopsy, specialty (Tissue-Tek Paraform Sectionable Cassette System) — — 1–40 50 (on standard protocol)	standard, biopsy, specialty (Tissue-Tek Paraform Sectionable Cassette System) — — 1–40 120 (on standard protocol)
Volume of fluids that can be kept on instrument	dependent on protocol	3 L paraffin	6 L paraffin
Reagent mode	xylene, xylene-free, reagent substitutes	xylene-free, reagent substitutes	xylene-free, reagent substitutes
Specimen-processing time • Minimum–maximum processing time for biopsy specimens Recommended minimum–maximum specimen thickness/size • Minimum–maximum processing time for resection specimens Recommended minimum–maximum specimen thickness/size • Minimum–maximum processing time for bone specimens Recommended minimum–maximum specimen thickness/size	dependent on protocol none recommended dependent on protocol none recommended dependent on protocol none recommended	89 min. to 169 min. no minimum to 3 mm 89 min. to 169 min. no minimum to 3 mm 169 min. no minimum to 3 mm	60 min. to 120 min. no minimum to 3 mm 60 min. to 120 min. no minimum to 3 mm 120 min. no minimum to 3 mm
User interface	touchscreen	touchscreen	touchscreen
Types of quality control • Onboard quality control for processing program	temperature, downloadable run reports, pressure/vacuum, fill-level sensing yes	temperature, downloadable run reports, fill-level sensing, microwave energy yes	temperature, downloadable run reports, fill-level sensing, microwave energy yes
Management of waste	reagents drained to external bottle or waste bottle on instrument via exchange solution program or bottles can be removed manually to dispose of reagents	automated collection onboard instrument, same Tissue-Tek Xpress reagent bottles loaded on instrument used for waste disposal	automated collection onboard instrument, same Tissue-Tek Xpress reagent bottles loaded on instrument used for waste disposal
Required user maintenance • User maintenance records kept on instrument Required maintenance by vendor's service personnel • Vendor maintenance records kept on instrument	daily, weekly, monthly some (maintenance schedules can be set on instrument) recommend annual preventive maintenance no	daily, weekly, monthly — annually no	daily, weekly, monthly — annually no
User training and installation • User training included with purchase • Total time for standard installation and basic training • Approximate length of training per typical user • Follow-up training available • Extra charge for follow-up training	yes 2 days 4 hours yes (upon request) yes (additional super-user offsite training)	yes 4 days 2 hours yes (upon request) yes	yes 4 days 2 hours yes (upon request) yes
Instrument list price (as of June 2016)	—	—	—
Warranty • Length of warranty coverage before purchasing service contract	yes 1 year	yes 1 year	yes 1 year
Service contract • Cost of annual service contract (as of June 2016)	warranty provided by manufacturer —	warranty provided by manufacturer —	warranty provided by manufacturer —
Primary instrument safety features	optional UPS to protect specimens in power outage	Sakura iSupport provides remote monitoring of all modules for quick response to service needs; UPS bridges power interruptions	Sakura iSupport provides remote monitoring of all modules for quick response to service needs; UPS bridges power interruptions
Primary productivity processing features	user-definable protocols for all tissue types; in-process reagent rotation	continuous load/unload of magazines with up to 40 cassettes about every 20 min.; low-wattage microwaves for rapid processing; more	continuous load/unload of magazines with up to 40 cassettes about every 20 min.; low-wattage microwaves for rapid processing; more
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> mean time between repair of more than 52 weeks flexible programming of temperature, mixing, reagent exchange, and up to 14 steps per method solution-manager software safeguards all steps taken during processing to protect tissues 	<ul style="list-style-type: none"> allows continuous throughput of 50 cassettes an hour Tissue-Tek Xpress reagents eliminate onboard formalin and xylene and liquid handling during reagent exchange mean time between repair of more than 52 weeks; iSupport remotely monitors all systems and increases instrument up-time 	<ul style="list-style-type: none"> allows rapid, continuous throughput of 120 cassettes an hour Tissue-Tek Xpress reagents eliminate onboard formalin and xylene and liquid handling during reagent exchange mean time between repair of more than 52 weeks; iSupport remotely monitors all systems, further increasing up-time

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

AUTOMATED TISSUE PROCESSORS

Part 4/4	Thermo Fisher Scientific Peter Kilner peter.kilner@thermofisher.com 4481 Campus Drive Kalamazoo, MI 49008 800-522-7270 opt. 1 www.thermoscientific.com/pathology
See captodayonline.com/productguides for an interactive version of guide	
Name of automated tissue processor	Thermo Scientific Excelsior AS Tissue Processor†
Intent of automated tissue processor featured in this guide Type of tissue processing performed	medical care, research use conventional, rapid
First-ever installation of this tissue processor	—
Total No. of units installed in U.S./Outside U.S. (as of June 2016)	—
Company produces and sells its own tissue processors	yes
Company sells this product through distribution partners	yes
• Vendors with which company partners	Fisher Scientific, VWR International, Cardinal Health
Names of other automated tissue processors sold by company	Thermo Scientific STP120 Spin Tissue Processor, Thermo Scientific TissueWave II Microwave Tissue Processor
Provide list of client sites to potential customers on request	no (information is confidential)
Model type	floor standing
• Dimensions (H × W × D)	54 × 28 × 23 in.
• Weight empty/Weight fully loaded	363 lbs./551 lbs.
Automatic programmable start/Automatic programmable shutdown	yes/yes
Reagent configuration	—
Mechanics of tissue processor	vacuum, heat, reagent exchange, reagent dilution, automatic measurement of alcohol concentration, rotation of reagents when triggered
Fume control	onboard filters, vented
Specimen retort	
• Maximum block capacity per retort	300
• No. of retorts per instrument	1
Type of specimen cassettes recommended	standard, biopsy, specialty
• Recommended cassette inserts	—
• Prohibited cassette inserts	none
• Minimum–maximum No. of cassettes per process run	1–300
• Cassette throughput per hour	dependent on protocol
Volume of fluids that can be kept on instrument	—
Reagent mode	xylene, xylene-free, reagent substitutes
Specimen-processing time	
• Minimum–maximum processing time for biopsy specimens	1 hour 15 min. for needle cores; 1 hour 57 min. for 2-mm biopsies
Recommended minimum–maximum specimen thickness/size	—
• Minimum–maximum processing time for resection specimens	7 hours 23 min. minimum
Recommended minimum–maximum specimen thickness/size	5 mm maximum
• Minimum–maximum processing time for bone specimens	dependent on local/specimen factors
Recommended minimum–maximum specimen thickness/size	—
User interface	touchscreen
Types of quality control	temperature, dilution, fill level, more
• Onboard quality control for processing program	yes
Management of waste	automated collection onboard instrument
Required user maintenance	daily
• User maintenance records kept on instrument	—
Required maintenance by vendor's service personnel	annually
• Vendor maintenance records kept on instrument	—
User training and installation	
• User training included with purchase	yes
• Total time for standard installation and basic training	4 days
• Approximate length of training per typical user	12 hours
• Follow-up training available	yes (negotiation as required)
• Extra charge for follow-up training	yes
Instrument list price (as of June 2016)	—
Warranty	yes
• Length of warranty coverage before purchasing service contract	1 year
Service contract	warranty provided by manufacturer, users can be trained onsite as service personnel
• Cost of annual service contract (as of June 2016)	—
Primary instrument safety features	integrated battery backup; level sensing; downdraft fan; disposable wax discard drawer; alarms; more
Primary productivity processing features	short processing cycles; downloadable reports for CLIA and others; single bottle replacement; more
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> measures alcohol concentration on every run to ensure reagents are changed on time automatic reagent rotation reduces labor for changing reagents and reduces reagent use unique rotational agitation to increase tissue quality and ensure consistent processing between cassettes and runs

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

†all information listed was provided to CAP TODAY in 2014; company did not provide updated information by 2016 entry deadline

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

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TISSUE-EMBEDDING INSTRUMENTS

Part 1/3	General Data	Leica Biosystems	Medite Lab Solutions
See captodayonline.com/productguides for an interactive version of guide	Jackie Malblanc jmalblanc@general-data.com 4043 McMann Rd. Cincinnati, OH 45245 513-752-7978 www.general-data.com/hc	Ran ran.yan@leicabiosystems.com 1700 Leider Lane Buffalo Grove, IL 60089 847-821-3529 www.leicabiosystems.com	Michael Kenealy michaelk@medite-group.com 4203 S.W. 34th St. Orlando, FL 32811 407-996-9630 www.medite-group.com
Name of tissue-embedding instrument	Tec II	Arcadia	TES Valida
Intent of tissue-embedding instrument featured in this guide	medical care, research use	medical care, research use	medical care, research use
First-ever installation of this tissue-embedding instrument	2010	2015	this version 2013 (previous version 1990)
Total No. of units installed in U.S./Outside U.S. (as of June 2016)	25/—	—	50+/550+
Company produces and sells its own tissue-embedding instruments	yes	yes	yes
Company sells this product through distribution partners	yes	—	yes
• Vendors with which company partners	Fisher HealthCare	—	VWR, Medline, Source Medical
Names of other tissue-embedding instruments sold by company	—	EG1150	TES99
Provide list of client sites to potential customers on request	yes (partial list of comparable sites)	yes (complete list but prospective client must sign a nondisclosure agreement)	yes (partial list of comparable sites)
Tissue-embedding method	semi-automated (can use foot pedal to dispense paraffin)	manual	manual
Automatic programmable start/Automatic programmable shutdown	yes/yes	yes/yes	yes/yes
Tissue-embedding instrument can be interfaced to an LIS	no	no	no
• Type of computer interface to LIS	—	—	—
Tissue-embedding instrument can be interfaced to a specimen-tracking system	no	no	no
Dimensions of complete tissue-embedding instrument (H × W × D)	—	—	42 L × 24 W × 14 H in.
• If modular, dimensions of dispensing console (H × W × D)	405 × 345 × 641 mm	600 × 560 × 385 mm	14 L × 24 W × 14 H in.
• If modular, dimensions of cold plate (H × W × D)	395 × 335 × 623 mm	155 × 80 × 100 mm	14 L × 24 W × 14 H in.
Weight of tissue-embedding instrument fully loaded/Weight empty	55 kg/45 kg	25 kg for hot plate; 30 kg for cold plate/—	163 lbs./155 lbs.
• If modular, weight of dispensing console fully loaded/Weight empty	30.5 kg/20.5 kg	—	63 lbs./55 lbs.
• If modular, weight of cold plate	24.5 kg	—	66 lbs.
Paraffin chamber	yes	yes	yes
• Capacity of paraffin chamber	5 L	4 L	4.6 L
• Temperature range of paraffin chamber	40–70°C	50–75°C	30–70°C
• Types of paraffin that can be used in chamber	all paraffin types	all paraffin types	all paraffin types
Paraffin-dispensing mechanism	semi-automated	semi-automated	semi-automated
Thermal tissue-storage chambers	—	—	—
• Total No. of thermal tissue-storage chambers	1 divided into 2 wells	2	1
• Cassette capacity of storage chambers	200–300	100	290
• Recommended method for holding tissue	molten paraffin or dry	molten paraffin or dry	molten paraffin or dry
• Temperature range of storage chambers in input area/in output area	40–70°C/40–70°C	50–70°C/50–70°C	30–70°C/30–70°C
Cooling functionality	cooling plates, cooling area	—	cooling plates
Embedding molds storage	—	—	—
• Molds built in to unit	no	no	no
• No. of molds per storage compartment if not built in	300	100	100
• Recommended mold material	standard metal or disposable plastic	standard metal or disposable plastic	standard metal or disposable plastic
User interface	touchscreen	touchscreen	touchscreen
Options for reading cassettes before they are placed on instrument	—	—	barcode
Management of waste	manually by user	manually by user	manually by user
Required user maintenance	daily; to maintain paraffin level in reservoir	daily	weekly
• User maintenance records kept on instrument	no	no	no
Required maintenance by vendor's service personnel	annually	no requirement	annually
• Vendor maintenance records kept on instrument	no	—	no
User training and installation	—	—	—
• User training included with purchase	no	yes	no
• Total time for standard installation and basic training	—	15 min.	—
• Approximate length of training per typical user	0.5 hours	1 hour	—
• Follow-up training available	yes (for new employees)	no	no
• Extra charge for follow-up training	yes (travel expenses for company's technical representative paid by customer)	no	—
Instrument list price (as of June 2016)	\$11,000	—	\$4,590 dispenser, \$2,890 cooling, \$3,090 thermal
Warranty	yes	yes	yes
• Length of warranty coverage before purchasing service contract	1 year	1 year	1 year
Service contract	warranty provided by manufacturer	warranty provided by manufacturer	warranty provided by manufacturer, user can purchase parts
• Cost of annual service contract (as of June 2016)	\$2,300	—	\$1,620
Primary instrument safety features	automatic shut-off; foot pedal operation	—	timer shutdown and power-up
Primary patient safety features	—	—	warning signs
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> • foot pedal operation • three modular components for more user flexibility • can accommodate all types of tissue-processing baskets 	<ul style="list-style-type: none"> • simple operation—easy to clean and maintain; one-stop-shop touchscreen; big and consistent cold plate • smooth workflow—symmetric design; large surface; automatic start; easy-to-open lids; adjustable paraffin flow • precise control—ergonomic wrist pad; magnifier can be easily tucked away 	<ul style="list-style-type: none"> • adjustable halogen light for work surface • foot pedal for hands-free dispensing of paraffin • ergonomic modular system convenient for left- and right-handed users

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

TISSUE-EMBEDDING INSTRUMENTS

Part 2/3	Milestone Medical Angela Kelly a.kelly@milestonemed.com 6475 Technology Ave., Suite F Kalamazoo, MI 49009 866-995-5300 www.milestonemed.com	Sakura Finetek USA Joshua Greenlee jgreenlee@sakuraus.com 1750 W. 214th St. Torrance, CA 90501 310-972-7800 www.sakura-americas.com	Sakura Finetek USA Joshua Greenlee jgreenlee@sakuraus.com 1750 W. 214th St. Torrance, CA 90501 310-972-7800 www.sakura-americas.com
See captodayonline.com/productguides for an interactive version of guide			
Name of tissue-embedding instrument	Synergy	Tissue-Tek AutoTEC a120 Automated Embedding System	Tissue-Tek TEC 5 Tissue Embedding Console System
Intent of tissue-embedding instrument featured in this guide	medical care, research use	medical care, research use	medical care, research use
First-ever installation of this tissue-embedding instrument	2014	2015	1999
Total No. of units installed in U.S./Outside U.S. (as of June 2016)	—	—	—
Company produces and sells its own tissue-embedding instruments	yes	yes	yes
Company sells this product through distribution partners	no	yes	yes
• Vendors with which company partners	—	Cardinal Health, VWR International, Government Scientific Source	Cardinal Health, VWR International, Government Scientific Source
Names of other tissue-embedding instruments sold by company	—	Tissue-Tek TEC 5 Tissue Embedding Console System	Tissue-Tek AutoTEC a120 Automated Embedding System
Provide list of client sites to potential customers on request	yes (partial list of comparable sites)	yes (partial list, with consent of installed client sites)	yes (partial list, with consent of installed client sites)
Tissue-embedding method	fully automated	fully automated	semi-automated (instrument-controlled temperatures and regulated dispensing of paraffin using a press plate or foot pedal)
Automatic programmable start/Automatic programmable shutdown	yes/yes	yes/yes	yes/yes
Tissue-embedding instrument can be interfaced to an LIS	no	yes	no
• Type of computer interface to LIS	—	unidirectional	—
Tissue-embedding instrument can be interfaced to a specimen-tracking system	no	yes	—
Dimensions of complete tissue-embedding instrument (H × W × D)	60 × 28 × 28 in.	70 × 47 × 30 in.	15 × 36 × 25 in.
• If modular, dimensions of dispensing console (H × W × D)	—	—	15 × 23 × 25 in.
• If modular, dimensions of cold plate (H × W × D)	—	—	15 × 13 × 24 in.
Weight of tissue-embedding instrument fully loaded/Weight empty	—/552 lbs.	—/1,168 lbs.	—/105 lbs.
• If modular, weight of dispensing console fully loaded/Weight empty	—	—	—/57 lbs.
• If modular, weight of cold plate	—	—	48 lbs.
Paraffin chamber	yes	yes	yes
• Capacity of paraffin chamber	4 L	5 L	4 L
• Temperature range of paraffin chamber	65–70°C	65°C	50–75°C
• Types of paraffin that can be used in chamber	Synergy paraffin	Tissue-Tek Paraform Processing/Embedding Medium, Formula 3 (#7052)	all paraffin types (recommend Tissue-Tek Paraform Processing/Embedding Medium, Formula 3 #7052)
Paraffin-dispensing mechanism	fully automated	fully automated	semi-automated
Thermal tissue-storage chambers			
• Total No. of thermal tissue-storage chambers	—	4	2
• Cassette capacity of storage chambers	—	80 (4 × 20)	160
• Recommended method for holding tissue	molten paraffin	continuous loading of Paraform cassettes	molten paraffin or dry
• Temperature range of storage chambers in input area/in output area	—	—/ambient	50–75°C/50–75°C
Cooling functionality	—	24 temperature-regulated base molds	cooling plates, cooling area
Embedding molds storage			
• Molds built in to unit	no	yes	no
• No. of molds per storage compartment if not built in	45	—	160+
• Recommended mold material	proprietary	—	standard metal or disposable plastic
User interface	touchscreen	touchscreen	keypad
Options for reading cassettes before they are placed on instrument	—	two-dimensional open barcode	—
Management of waste	manually by user	direct to drain	manually by user
Required user maintenance	daily, weekly	daily, weekly, monthly	daily
• User maintenance records kept on instrument	—	some (schedule for maintenance can be set onboard)	no
Required maintenance by vendor's service personnel	annually	bi-annual preventive maintenance	recommend annual preventive maintenance
• Vendor maintenance records kept on instrument	no	no	no
User training and installation			
• User training included with purchase	yes	yes	yes
• Total time for standard installation and basic training	12 hours	4 days	0.5 days
• Approximate length of training per typical user	8–12 hours	2 hours	2 hours
• Follow-up training available	yes (upon customer request)	yes (upon customer request)	yes (upon customer request)
• Extra charge for follow-up training	—	yes	yes
Instrument list price (as of June 2016)	\$125,000	—	—
Warranty	yes	yes	yes
• Length of warranty coverage before purchasing service contract	1 year	1 year	1 year
Service contract	warranty provided by manufacturer	warranty provided by manufacturer	warranty provided by manufacturer
• Cost of annual service contract (as of June 2016)	\$10,500	—	—
Primary instrument safety features	—	Sakura iSupport provides remote monitoring of all systems for quick response to instrument service needs; UPS to bridge power outage	automatic start-up and shutdown features that can be preset by user
Primary patient safety features	—	tissue orientation preserved from grossing to microscopy through Paraform cassettes and automated embedding	built-in LED light illuminates embedding area; optional magnifying glass can be attached to instrument for hands-free viewing of tissue; optional heated forceps to eliminate sticky paraffin buildup that can trap tissue pieces
Distinguishing features (supplied by company)		<ul style="list-style-type: none"> continuous, fully automated tissue embedder with a throughput of up to 120 cassettes/hour tissue orientation and integrity preserved from grossing to microtomy to eliminate errors and tissue loss onboard barcode reading tracks cassettes through the embedding process 	<ul style="list-style-type: none"> mean time between repair of more than 52 weeks ergonomic design for fast and comfortable embedding on a single plane adjustable paraffin pump delivers the right amount of paraffin quickly

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



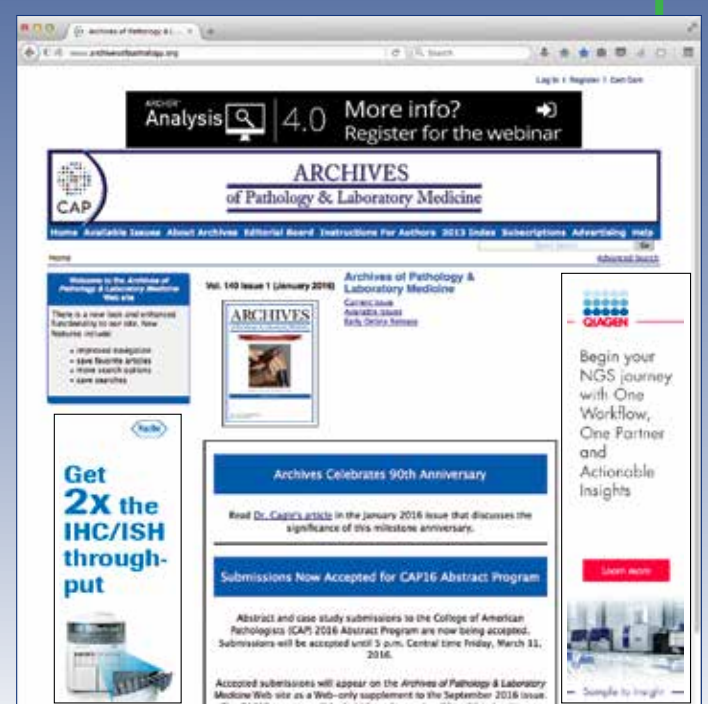
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Part 3/3	Thermo Fisher Scientific Peter Kilner peter.kilner@thermofisher.com 4481 Campus Drive Kalamazoo, MI 49008 800-522-7270 opt. 1 www.thermoscientific.com/pathology
See captodayonline.com/productguides for an interactive version of guide	
Name of tissue-embedding instrument	Thermo Scientific HistoStar Embedding Center [†]
Intent of tissue-embedding instrument featured in this guide	medical care, research use
First-ever installation of this tissue-embedding instrument	—
Total No. of units installed in U.S./Outside U.S. (as of June 2016)	—
Company produces and sells its own tissue-embedding instruments	yes
Company sells this product through distribution partners	yes
• Vendors with which company partners	Fisher Scientific, VWR, Cardinal Health
Names of other tissue-embedding instruments sold by company	—
Provide list of client sites to potential customers on request	no (information is confidential)
Tissue-embedding method	—
Automatic programmable start/Automatic programmable shutdown	yes/yes
Tissue-embedding instrument can be interfaced to an LIS	no
• Type of computer interface to LIS	—
Tissue-embedding instrument can be interfaced to a specimen-tracking system	—
Dimensions of complete tissue-embedding instrument (H × W × D)	16.1 × 42.6 × 23.6 in.
• If modular, dimensions of dispensing console (H × W × D)	16.1 × 25.6 × 23.6 in.
• If modular, dimensions of cold plate (H × W × D)	16.1 × 17.0 × 23.6 in.
Weight of tissue-embedding instrument fully loaded/Weight empty	—
• If modular, weight of dispensing console fully loaded/Weight empty	—
• If modular, weight of cold plate	44.1 lbs.
Paraffin chamber	yes
• Capacity of paraffin chamber	5 L
• Temperature range of paraffin chamber	50–70°C
• Types of paraffin that can be used in chamber	all paraffin types
Paraffin-dispensing mechanism	adjustable position lever or optional foot pedal
Thermal tissue-storage chambers	—
• Total No. of thermal tissue-storage chambers	1
• Cassette capacity of storage chambers	300+
• Recommended method for holding tissue	molten paraffin or dry
• Temperature range of storage chambers in input area/in output area	—
Cooling functionality	—
Embedding molds storage	—
• Molds built in to unit	—
• No. of molds per storage compartment if not built in	300+
• Recommended mold material	standard metal or disposable plastic
User interface	touchscreen
Options for reading cassettes before they are placed on instrument	—
Management of waste	automated collection onboard instrument
Required user maintenance	top up wax and remove waste wax as required
• User maintenance records kept on instrument	—
Required maintenance by vendor's service personnel	annually
• Vendor maintenance records kept on instrument	—
User training and installation	—
• User training included with purchase	yes
• Total time for standard installation and basic training	½ day
• Approximate length of training per typical user	1 hour
• Follow-up training available	yes (negotiated with each user; follow-up training unlikely as instrument is very simple)
• Extra charge for follow-up training	yes
Instrument list price (as of June 2016)	—
Warranty	yes
• Length of warranty coverage before purchasing service contract	1 year
Service contract	warranty provided by manufacturer, users can be trained on site as service personnel
• Cost of annual service contract (as of June 2016)	—
Primary instrument safety features	over-temperature cutout
Primary patient safety features	adjustable, built-in LED illumination to see specimens clearly and facilitate complete transfer from cassette and proper orientation
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> • adjustable, integrated LED lighting promotes safety • soft contoured and insulated front edges to reduce fatigue and increase comfort • large capacity of wax (5 L), cold plate (72 cassettes), and cassette storage (complete processor-load of baskets)
<i>†all information listed was provided to CAP TODAY in 2014; company did not provide updated information by 2016 entry deadline</i>	
<i>Note: a dash in lieu of an answer means company did not answer question or question is not applicable</i>	

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



AUTOMATED MICROTOMES

Part 1/2	General Data	Leica Biosystems	Medite Lab Solutions
See captodayonline.com/productguides for an interactive version of guide	Jackie Malblanc jmalblanc@general-data.com 4043 McMann Rd. Cincinnati, OH 45245 513-752-7978 www.general-data.com/hc	Karen Chong karen.chong@leicabiosystems.com 1700 Leider Lane Buffalo Grove, IL 60089 www.leicabiosystems.com/histology-equipment/microtomes	Michael Kenealy michaelk@medite-group.com 4203 S.W. 34th St. Orlando, FL 32811 888-225-2950 www.medite-group.com
Name of automated microtome	Artis A	Leica RM2255	Microtome A550
Intent of automated microtome featured in this guide	medical care, research use	medical care, research use	medical care, research use
Specific uses for automated microtome	traditional histology microscopy	traditional histology microscopy, electron microscopy	traditional histology microscopy
First-ever installation of this automated microtome	2016	—	2010
Total No. of units installed in U.S./Outside U.S. (as of June 2016)	1 (new product)/—	approximately 30,000 units worldwide	50+/450+ (worldwide)
Company produces and sells its own automated microtomes	yes	yes	yes
Company sells this product through distribution partners	—	yes	yes
• Vendors with which company partners	—	North Central Instruments	VWR, Fisher, Cancer Diagnostics, Choice
Names of other automated microtomes sold by company	—	Leica RM2265	M380 Manual Rotary Microtome, M530 Semi-automatic Rotary Microtome
Provide list of client sites to potential customers on request	yes (partial list of comparable sites)	yes (partial list of comparable sites, with permission of reference customers)	yes (partial list of comparable sites)
Configuration of microtome	rotary	rotary	rotary
Automatic programmable start/Automatic programmable shutdown	no/no	no/no	no/no
Mechanics of microtome			
• Cutting modes	continuous mode, single-section mode, trim mode	continuous mode, single-section mode, rock mode, trim mode, step mode (start/stop with foot pedal)	continuous mode, single-section mode, partial-section mode, trim mode
• Cutting range	1.0–100 µm	0.5–100 µm	fine-sectioning thickness, 0.5–100 µm (0.25 µm not available)
• Cutting speed	variable	1–600 µm/sec.	0–400 mm/sec.
• Display monitors	yes	yes	yes
Driving mechanism of microtome	retracting (5–100 µm)	retracting (5–100 µm in manual mode, which can be turned off; varies with sectioning speed in motorized mode, which can be turned off)	retracting (1–500 µm)
Specimen orientation			
• Type of specimen holder or clamp	quick release for regular tissue cassettes, clamp for large blocks	quick release for regular tissue cassettes, standard clamp for irregular cassettes, clamp for large blocks, small clamps for resin and minute samples, electrically cooled clamp, round specimen holder, foil clamp	quick release for regular tissue cassettes, standard clamp for irregular cassettes, clamp for large blocks, small clamps for resin and minute samples
• Adjustment mechanism	manual dial	manual dial	manual dial, electronic button (both on instrument)
• Home position for block clearly identified	yes	yes	yes
Microtome senses ID of block via barcode or RFID as it is placed for cutting	no	no	no
Sectioning thickness			
• Cutting range	1–100 µm	0.5–100 µm	0.5 µm–5 µm in 0.25 µm steps, 5 µm–10 µm in 0.5 µm steps, 10 µm–50 µm in 1 µm steps
• Trimming range	1–600 µm	1–600 µm	1 µm–20 µm in 5 µm steps, 20 µm–100 µm in 5 µm steps, 100 µm–500 µm in 10 µm steps
• Type of adjustment mechanism	electronic button	electronic button	manual dial, electronic button (both on instrument)
• Sectioning modes	single section, continuous sections	single section, continuous sections, partial sections, rock mode, step mode with optional foot pedal	single section, continuous sections, partial sections
Type of microtome blades	disposable (high- and low-profile blades; separate holder required for each blade)	disposable (high- and low-profile blades; separate holder required for each blade), reusable steel/carbide knives, diamond and glass knives	disposable (high- and low-profile blades; separate holder required for each blade), reusable steel/carbide knives
• Cutting angle adjustment	adjust with wrench	adjust with wrench	adjust with lever
Required user maintenance	daily, weekly	daily	weekly
• User maintenance records kept on instrument	no	no	no
Required maintenance by vendor's service personnel	annually	annually	annually
• Vendor maintenance records kept on instrument	no	no	no
User training and installation			
• User training included with purchase	no	yes	no
• Total time for standard installation and basic training	4 hours	2–3 hours	1 hour
• Approximate length of training per typical user	—	1 hour	1 hour
• Follow-up training available	yes (for new employees)	yes (upon customer's request)	yes (upon customer's request)
• Extra charge for follow-up training	yes (travel expenses for company's technical representative paid by customer)	no	yes (upon customer's request)
Instrument list price (as of June 2016)	\$18,500	—	\$11,900 (without object clamp and blade holder)
Warranty	yes	yes	yes
• Length of warranty coverage before purchasing service contract	1 year	1 year	1 year
Service contract	warranty provided by manufacturer	warranty provided by manufacturer, user can purchase parts	warranty provided by manufacturer, user can purchase parts
• Cost of annual service contract (as of June 2016)	first year included in purchase price; available plans after first year start at \$1,975	—	—
Primary instrument safety features	blade guard; blade ejector; emergency stop button; wheel locks	blade guard; blade ejector; emergency stop button; wheel locks; centering of handle of hand wheel for safety	blade guard; emergency stop button; wheel locks
Primary Lean workflow features	—	zero position on orientation; easy handling of waste; quick clamp exchange; patented hand wheel balance system; lateral displacement of blade holder to prolong blade life; more	—
Primary productivity processing features	—	three predefined positions on blade holder; clearance angle will not change once set with allen key	—
Primary ergonomic features	user-operated foot pedal	smooth rounded edges; ergonomic hand wheel handle; tray atop microtome allows for close and easy access to accessories and supplies; more	smooth-running hand wheel, including locking device; spaciouly designed, integrated section waste tray; clearly arranged operating controls; torsion-free base design for maximum stability; removable xylene-resistant waste tray for easy cleaning
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> • user-controlled foot pedal to reduce or eliminate repetitive motion symptoms • integrated light source for easy identification of specimen in blocks • position memory recall to expedite facing of blocks 	<ul style="list-style-type: none"> • patented hand wheel balance system • blade holder with blade removal • owns workflow from biopsy to diagnosis 	<ul style="list-style-type: none"> • highest German quality standard and precision with adjustable slide thickness steps of up to 0.5 µm • ergonomic design and excellent section stability and precision allow for universal use in clinical and research labs • memory positioning saves cutting positions with the touch of a button

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

AUTOMATED MICROTOMES

Part 2/2	Sakura Finetek USA Alycia Rios arios@sakuraus.com 1750 W. 214th St. Torrance, CA 90501 800-725-8723 www.sakura-america.com	Thermo Fisher Scientific Greg Strader greg.strader@thermofisher.com 4481 Campus Drive Kalamazoo, MI 49008 269-544-5616 www.thermoscientific.com
See captodayonline.com/productguides for an interactive version of guide		
Name of automated microtome	Tissue-Tek AutoSection Automated Microtome	Thermo Scientific HM 355S Rotary Microtome†
Intent of automated microtome featured in this guide Specific uses for automated microtome	medical care, research use traditional histology microscopy	medical care, research use traditional histology microscopy
First-ever installation of this automated microtome Total No. of units installed in U.S./Outside U.S. (as of June 2016)	2013 —	— —
Company produces and sells its own automated microtomes Company sells this product through distribution partners • Vendors with which company partners	yes yes Cardinal Health, VWR International, Government Scientific Source	yes yes Fisher Scientific, Fisher Healthcare, VWR International
Names of other automated microtomes sold by company	—	Thermo Scientific Finesse ME+ Rotary Microtome
Provide list of client sites to potential customers on request	yes (partial list of comparable sites, with permission of reference customers)	no (information is confidential)
Configuration of microtome	electronic, fully automated drive-by-wire technology	rotary
Automatic programmable start/Automatic programmable shutdown	no/no	no/no
Mechanics of microtome • Cutting modes • Cutting range • Cutting speed • Display monitors	continuous mode, single-section mode, trim mode, Sakura AutoAlign, AutoTrim, AutoSection technology and retraction 0.5–100 µm 10–450 µm/sec. yes	continuous mode, single-section mode, rock mode, trim mode, interval mode 0.5–100 µm — yes
Driving mechanism of microtome	retracting (20–100 µm; can also be set to nonretracting)	stepper motor advance
Specimen orientation • Type of specimen holder or clamp • Adjustment mechanism • Home position for block clearly identified Microtome senses ID of block via barcode or RFID as it is placed for cutting	quick release for regular tissue cassettes electronic button yes no	quick release for regular tissue cassettes, standard clamp for irregular cassettes, clamp for large blocks, small clamps for resin and minute samples electronic button yes no
Sectioning thickness • Cutting range • Trimming range • Type of adjustment mechanism • Sectioning modes	0.5–100 µm 1–200 µm electronic button single section; continuous sections; 16 programmable sectioning protocols, each having up to 15 steps	0.5–100 µm 5–500 µm electronic button single section, continuous sections, rock mode, interval mode
Type of microtome blades • Cutting angle adjustment	disposable (high- and low-profile blades) no adjustment needed (fixed blade holder; device aligns block face to blade)	disposable (high- and low-profile blades), reusable steel/carbide knives adjust with lever
Required user maintenance • User maintenance records kept on instrument Required maintenance by vendor's service personnel • Vendor maintenance records kept on instrument	daily no recommend annual preventive maintenance no	weekly — annually —
User training and installation • User training included with purchase • Total time for standard installation and basic training • Approximate length of training per typical user • Follow-up training available • Extra charge for follow-up training	yes 4 hours 3 hours yes (as needed) no	yes 2–4 hours 1 hour yes (as needed) no
Instrument list price (as of June 2016)	\$29,995	—
Warranty • Length of warranty coverage before purchasing service contract	yes 1 year	yes 1 year
Service contract • Cost of annual service contract (as of June 2016)	warranty provided by manufacturer, user can purchase parts \$2,850	warranty provided by manufacturer —
Primary instrument safety features	blade guard; emergency stop button; wheel locks; sensors; chuck locked when microtome is not moving; only foot pedal stops instrument; more	blade guard; emergency stop button; wheel locks
Primary Lean workflow features	AutoAlign aligns block face to blade edge; AutoTrim removes predefined amount of paraffin from blocks in 10 seconds; 16 programmable sectioning programs	easily adjustable zero position head; wraparound waste tray
Primary productivity processing features	fixed blade holder; three-dimensional chuck and sensing plate automatically align block to blade; standardized, programmable sectioning	blade angle does not need constant adjustment unless blade type is changed; blade holder position can be set and left unchanged; memory feature returns specimen to user's set starting point
Primary ergonomic features	microtomy at the touch of a button and programmable sectioning; Bluetooth wireless remote accommodates left- and right-handed personnel; more	single-hand operation via movable control unit
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> • AutoSection automatically aligns block to blade, saving time on recuts • optimizes and standardizes sectioning for each tissue type throughout the laboratory • AutoTrim quickly and efficiently faces blocks in 10 seconds 	<ul style="list-style-type: none"> • all controls incorporated into a single movable control unit that can be positioned on the left or right • removable wraparound waste tray allows fast and easy cleanup • zero position specimen head allows quick and easy setup for recuts

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

†all information listed was provided to CAP TODAY in 2014; company did not provide updated information by 2016 entry deadline

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AUTOMATED STAINING INSTRUMENTS

Part 1/7	Agilent Technologies, Dako Shelley Combs shelley.combs@agilent.com 6392 Via Real Carpinteria, CA 93013 800-235-5743 www.dako.com	Agilent Technologies, Dako Nicole Wootton nicole.wootton@agilent.com 6392 Via Real Carpinteria, CA 93013 800-235-5743 www.dako.com	Agilent Technologies, Dako Shelley Combs shelley.combs@agilent.com 6392 Via Real Carpinteria, CA 93013 800-235-5743 www.dako.com
See captodayonline.com/productguides for an interactive version of guide			
Name of automated staining instrument	Artisan Link Pro	Autostainer Link 48	Dako CoverStainer
Intent of automated staining instrument Type of staining conducted on instrument featured in this guide Recommended applications	medical care histochemical/special stains special staining	medical care, research use immunohistochemical/in situ histology, cytology	medical care, research use hematoxylin and eosin histology
First-ever installation of this staining instrument Total No. of units installed in U.S./Outside U.S. (as of June 2016)	2012 —	1997 —	2010 —
Company produces and sells its own automated staining instruments	yes	yes (but this instrument manufactured by Thermo Fisher)	yes (but this instrument manufactured by BIT)
Company sells this product through distribution partners • Vendors with which company partners	yes (outside the U.S. and Canada) —	yes (outside the U.S. and Canada) —	yes (outside the U.S. and Canada) —
Names of other automated staining instruments sold by company	Dako Autostainer Link 48, Dako Omnis, Dako CoverStainer	Dako Omnis, Dako CoverStainer, Dako Artisan Link Pro	Dako Omnis, Dako Autostainer Link 48, Dako Artisan Link Pro
Provide list of client sites to potential customers on request	yes (partial list of comparable sites)	yes (partial list of comparable sites)	yes (partial list of comparable sites)
Model type • Dimensions (H × W × D) • Weight empty/Weight fully loaded	benchtop 20.5 × 32 × 26 in. 150 lbs./—	benchtop 27 × 35 × 26 in. 147 lbs./—	floor standing 50 × 65 × 26 in. 385 lbs./506 lbs.
Automatic programmable start/Automatic programmable shutdown	yes/yes	yes/no	no/no
Maximum slide capacity of instrument	48	48	240 per hour
Instrument platform	modular (3 units controlled by one computer)	modular (unlimited number of Autostainer Link 48 systems can be connected to network; up to 3 can be hooked to 1 computer)	individual
Staining host computer can be interfaced to an LIS • Type of computer interface to LIS Stainer can interface to a specimen-tracking system	yes (to Cerner, Sunquest, 30+ LISs) bidirectional yes	yes bidirectional yes	yes (to Cerner, Sunquest, 30+ LISs) bidirectional yes
Reagent configuration Instrument reagent application Uses for bulk reagents No. of tests or slides one reagent/test kit can handle	closed/proprietary system reagents applied to patient slides individually deparaffinization, rinsing 50- or 100-test kits	open reagent system reagents applied to patient slides individually deparaffinization, rinsing, antigen retrieval 600	combination of open and closed system patient slides submerged in shared reagents — 3,000
Staining configuration	set by manufacturer	user programmable	set by manufacturer or user programmable (user's choice)
How slides on runs are handled	batch load (48 slides per rack)	batch load (12 slides per rack/4 racks per run)	batch and continuous load (10 slides per rack/up to 24 racks per run)
Options for reading slides placed on instrument • Information included in barcode • How barcode information is conveyed	two-dimensional open barcode specimen identifier, stains to be done open barcode	one-dimensional and two-dimensional open barcode slide identification —	two-dimensional open barcode — open barcode
Method of heating or drying slides Solution for rinsing slides Online coverslipping integrated into system	online drying system Artisan wash solution no	offline drying system distilled water, buffer no	online drying system tap water (inlet and onboard system) yes (glass)
Fume control	onboard filters, vented	—	vented
User interface	touchscreen or keyboard without mouse	keyboard without mouse	touchscreen
Onboard quality control • Onboard quality control for individual reagents • Types of quality control for reagents • Onboard quality control for staining program	yes no — yes	yes yes — yes	yes no — yes
Management of waste	automated collection onboard instrument	automated collection onboard instrument	automated collection onboard instrument
Required user maintenance • User maintenance records kept on instrument Required maintenance by vendor's service personnel • Vendor maintenance records kept on instrument	weekly, monthly — annually no	every 150–200 slides yes annually no	daily, biweekly, annually — daily, biweekly, annually no
User training and installation • User training included with purchase • Total time for standard installation and basic training • Approximate length of training per typical user • Follow-up training available • Extra charge for follow-up training	yes 3 days 6 hours yes (full-scale training at Dako Academy) yes (for full-scale training at Dako Academy after initial training slots used; no charge for on-site training)	yes 32 hours — yes (for staff turnover, refresher, or software updates) yes (but only if required off site)	yes 3–7 days 2 days (16 hours) yes (full-scale training at Dako Academy) yes (for full-scale training at Dako Academy after initial training slots used; no charge for on-site training)
Instrument list price (as of June 2016)	\$95,000	\$109,725	\$120,000
Warranty • Length of warranty before purchasing service contract	yes 1 year	yes 1 year	yes 1 year
Service contract • Cost of annual service contract (as of June 2016)	warranty provided by manufacturer —	warranty provided by manufacturer —	warranty provided by manufacturer —
Primary user safety features	closed staining system and closed ready-to-use reagent cartridges; staining chamber ventilation (optional); waste separation into 4 disposal streams; deparaffinization with nonhazardous Artisan clearing solution; more	separation of hazardous waste; LIS-originated barcodes accepted by instrument, eliminating relabeling; prevalidated staining protocols	less than 38 db when running; ventilated—no fumes; option to use xylene-free and toluene-free solutions
Primary productivity processing features	30 high-quality automated special stains; 48-slide capacity enables overnight runs; runs up to 14 different stains simultaneously; flexible, editable protocols; intuitive operation with DakoLink software integration with LIS and LAN connectivity	runs 48 slides in less than 3 hours or a patient-case workflow by staining 24 slides in as little as 2 hours; when instruments are connected to DakoLink, user can place reagents in any Autostainer Link 48 rather than having separate sets of reagents for each instrument	up to 240 slides per hour with Dako standard protocol
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> • environmentally safe deparaffinization solution • large special stain menu, with 31 stains • waste separated into 4 categories: nonhazardous, hazardous, alcohol, metal 	<ul style="list-style-type: none"> • parallel processing achieves high productivity by pretreating and staining slides simultaneously • open system—adjust any protocol or use lab-developed protocols; introduce and validate new reagents; apply any visualization • with 48 slides, user processes 60% more slides in one run compared to common 30-slide staining systems 	<ul style="list-style-type: none"> • full automation of entire H&E process; no manual transfer between steps • stains last for 3,000 slides or 5 days, whichever comes first, which keeps process up and running for longer periods of time • unique rack design minimizes chance for cross-contamination or slides jamming; moves racks, not individual slides

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

AUTOMATED STAINING INSTRUMENTS

Part 2/7	Agilent Technologies, Dako Nicole Wootton nicole.wootton@agilent.com 6392 Via Real Carpinteria, CA 93013 800-235-5743 www.dako.com	Biocare Medical Cindy Ali cali@biocare.net 4040 Pike Lane Concord, CA 94520 800-799-9499 www.biocare.net	Biocare Medical Cindy Ali cali@biocare.net 4040 Pike Lane Concord, CA 94520 800-799-9499 www.biocare.net
See captodayonline.com/productguides for an interactive version of guide			
Name of automated staining instrument	Dako Omnis	IntelliPATH	ONCORE
Intent of automated staining instrument Type of staining conducted on instrument featured in this guide	medical care, research use immunohistochemical/in situ, fluorescence in situ hybridization	medical care, research use hematoxylin and eosin, immunohistochemical/in situ	medical care, research use immunohistochemical/in situ
Recommended applications	histology	histology	histology
First-ever installation of this staining instrument Total No. of units installed in U.S./Outside U.S. (as of June 2016)	2014 —	2004 —	2012 —
Company produces and sells its own automated staining instruments Company sells this product through distribution partners • Vendors with which company partners	yes (but this instrument manufactured by Tecan) yes (outside the U.S. and Canada) —	yes yes —	yes (but this instrument not manufactured by Biocare) yes —
Names of other automated staining instruments sold by company	Dako Autostainer Link 48, Dako Artisan Link Pro, Dako CoverStainer	ONCORE	IntelliPATH
Provide list of client sites to potential customers on request	yes (partial list of comparable sites)	yes	yes
Model type • Dimensions (H × W × D) • Weight empty/Weight fully loaded	floor standing 60.4 × 57.1 × 31.2 in. 1,102.31 lbs./—	benchtop 24 × 40 × 25 in. 145 lbs./~150 lbs.	benchtop 22 × 35 × 24 in. 110 lbs./~115 lbs.
Automatic programmable start/Automatic programmable shutdown	yes/no	yes/yes	yes/yes
Maximum slide capacity of instrument	165	50	36
Instrument platform Staining host computer can be interfaced to an LIS • Type of computer interface to LIS Stainer can interface to a specimen-tracking system	modular (8 units controlled by 1 computer) yes bidirectional yes	modular (up to 4 units controlled by 1 computer [2 with research software]) or individual yes (to LISs compatible with XML and HL7 messaging standards) unidirectional, bidirectional yes	individual yes (to LISs compatible with XML and HL7 messaging standards) — no
Reagent configuration Instrument reagent application Uses for bulk reagents No. of tests or slides one reagent/test kit can handle	combination of open and closed system reagents applied to patient slides individually deparaffinization, rinsing, target retrieval 600	open reagent system reagents applied to patient slides individually rinsing 100	combination of open and closed system reagents applied to patient slides individually deparaffinization, rinsing, antigen retrieval 60, 90, 180
Staining configuration	set by manufacturer or user programmable (user's choice)	set by manufacturer or user programmable (user's choice)	set by manufacturer
How slides on runs are handled Options for reading slides placed on instrument • Information included in barcode • How barcode information is conveyed	batch and continuous load (5 slides per rack/6 racks per run) two-dimensional open barcode slide identification number open barcode	batch load (up to 10 slides per rack/5 racks per run) two-dimensional open barcode specimen identifier, stains to be done open barcode	batch load two-dimensional open barcode specimen identifier, stains to be done open barcode
Method of heating or drying slides Solution for rinsing slides Online coverslipping integrated into system	offline drying system distilled water, buffer no	offline drying system distilled water, tap water (onboard system), buffer no	online drying system buffer no
Fume control	onboard filters	not needed/required	not needed/required
User interface	touchscreen, keyboard with mouse	keyboard with mouse	keyboard with mouse
Onboard quality control • Onboard quality control for individual reagents • Types of quality control for reagents • Onboard quality control for staining program	yes yes temperature yes	yes yes temperature, barcode yes	yes yes temperature, radio-frequency identification yes
Management of waste	automated collection onboard instrument	automated (separates hazardous/nonhazardous waste)	automated (separates hazardous/nonhazardous waste)
Required user maintenance • User maintenance records kept on instrument Required maintenance by vendor's service personnel • Vendor maintenance records kept on instrument	daily, weekly, monthly yes annually no	daily, weekly, monthly no semi-annually no	daily, weekly, monthly, quarterly, semi-annually no semi-annually no
User training and installation • User training included with purchase • Total time for standard installation and basic training • Approximate length of training per typical user • Follow-up training available • Extra charge for follow-up training	yes 52 hours — yes (for staff turnover, upgrades to product, requests by lab) yes (user can purchase additional off-site training; no charge for training on site)	yes up to 10 business days 20–36 hours yes (upon customer request) no	yes up to 10 business days 15–20 hours yes (upon customer request) no
Instrument list price (as of June 2016)	\$210,000	—	—
Warranty • Length of warranty before purchasing service contract	yes 1 year	yes 1 year	yes 1 year
Service contract • Cost of annual service contract (as of June 2016)	warranty provided by manufacturer —	warranty provided by manufacturer —	warranty provided by Biocare —
Primary user safety features	weight-controlled volume sensing for bulk reagents; enhanced reagent tracking; separation of hazardous waste; more	door lock and bulk carboy sensors	door lock
Primary productivity processing features	supports continuous, overnight, or batch flow of slides (slides can be added any time and processed unattended); buffer, water, waste capacity for 24 hours; option to start staining process with incomplete reagent menu onboard; precise, reliable run-time estimates	true continuous random-access slide processing; simultaneous multiplex IHC capability; reagent/inventory tracking; LIS interface	slide baking onboard; deparaffinization, antigen retrieval, and antibody detection for IHC and multiplex IHC applications; run different protocols for multiplex and multiple single-antigen detection systems at once
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> • allows for simultaneous processing of IHC and ISH • temperature-controlled reagent storage for all 60 vials • capacity of 60 slides, including up to 15 ISH slides 	<ul style="list-style-type: none"> • flexible, open system; uses reagents from any source or Biocare's validated reagents and protocols • high-volume throughput (50-slide capacity) with continuous random access • award-winning customer service, technical support 	<ul style="list-style-type: none"> • unique reagent containment and kinetic incubation of reagents to maximize staining intensity • RFID tracking of reagents • award-winning customer service, technical support
<i>Note: a dash in lieu of an answer means company did not answer question or question is not applicable</i>			

AUTOMATED STAINING INSTRUMENTS

Part 3/7	General Data Jackie Malblanc jmalblanc@general-data.com 4043 McMann Rd. Cincinnati, OH 45245 513-752-7978 www.general-data.com/hc	Leica Biosystems Pinar Aycan pinar.aycan@leicabiosystems.com 1700 Leider Lane Buffalo Grove, IL 60089 847-821-3493 www.leicabiosystems.com	Leica Biosystems Ryan Gresavage ryan.gresavage@leicabiosystems.com 1700 Leider Lane Buffalo Grove, IL 60089 847-848-3230 www.leicabiosystems.com
See captodayonline.com/productguides for an interactive version of guide			
Name of automated staining instrument	2030	BOND-III	ST4020
Intent of automated staining instrument	medical care, research use	medical care	medical care
Type of staining conducted on instrument featured in this guide	hematoxylin and eosin, histochemical/special stains	immunohistochemical/in situ, fluorescence in situ hybridization	hematoxylin and eosin
Recommended applications	histology, cytology, special staining	histology, cytology	histology, cytology, frozen sections
First-ever installation of this staining instrument	2016	2009	2010
Total No. of units installed in U.S./Outside U.S. (as of June 2016)	<10/—	thousands (worldwide)	—
Company produces and sells its own automated staining instruments	yes	yes	yes
Company sells this product through distribution partners	yes	no	yes
• Vendors with which company partners	—	—	North Central Instruments
Names of other automated staining instruments sold by company	—	BOND-MAX, BOND RX, BOND RX™	ST5020 Multistainer, ST5010 Autostainer XL, BOND-MAX, BOND-III
Provide list of client sites to potential customers on request	yes (partial list of comparable sites)	yes (partial list of comparable sites)	no (information is confidential)
Model type	benchtop	floor standing	benchtop
• Dimensions (H × W × D)	14 × 47 × 17 in.	53.5 × 30.5 × 30.9 in.	10 × 24 × 8 in.
• Weight empty/Weight fully loaded	143 lbs./150 lbs.	542 lbs./595 lbs.	77 lbs./—
Automatic programmable start/Automatic programmable shutdown	no/no	yes/no	no/no
Maximum slide capacity of instrument	30 per rack	30	60
Instrument platform	individual	modular (5 units controlled by 1 computer)	individual
Staining host computer can be interfaced to an LIS	no	yes	no
• Type of computer interface to LIS	none	bidirectional	none
Stainer can interface to a specimen-tracking system	no	yes	no
Reagent configuration	open reagent system	combination of open and closed system	open reagent system
Instrument reagent application	patient slides submerged in shared reagents	reagents applied to patient slides individually	patient slides submerged in shared reagents
Uses for bulk reagents	deparaffinization, rinsing	deparaffinization, rinsing, epitope retrieval steps	deparaffinization, rinsing
No. of tests or slides one reagent/test kit can handle	30 slides per rack; 350 mL per container	200	—
Staining configuration	set by manufacturer or user programmable (user's choice)	set by manufacturer or user programmable (user's choice)	set by manufacturer or user programmable (user's choice)
How slides on runs are handled	batch and continuous load (30 slides per rack/3 racks per run)	batch and continuous load (10 slides per rack/3 racks per run)	continuous load
Options for reading slides placed on instrument	—	two-dimensional open barcode	—
• Information included in barcode	—	specimen identifier, stains to be done	—
• How barcode information is conveyed	—	open barcode	—
Method of heating or drying slides	offline drying system	online drying system	offline drying system
Solution for rinsing slides	distilled water, tap water (inlet), buffer	buffer, deionized water	distilled water, tap water (inlet)
Online coverslipping integrated into system	no	no	no
Fume control	onboard filters	—	—
User interface	keypad	keyboard with mouse	keypad
Onboard quality control	no	yes	no
• Onboard quality control for individual reagents	no	no	—
• Types of quality control for reagents	—	—	—
• Onboard quality control for staining program	no	no	—
Management of waste	manually by user	automated collection onboard instrument (separation of hazardous and standard bulk waste)	manually by user
Required user maintenance	daily, weekly	daily, weekly, monthly	weekly
• User maintenance records kept on instrument	no	yes	no
Required maintenance by vendor's service personnel	annually	semi-annually, annually	annually
• Vendor maintenance records kept on instrument	no	yes	—
User training and installation	no	yes	yes
• User training included with purchase	no	3 days	3 hours
• Total time for standard installation and basic training	3 hours	4 hours	1 hour
• Approximate length of training per typical user	1 hour	yes (training at customer site as needed)	yes (upon customer request)
• Follow-up training available	yes (for new employees)	yes (for customer training at Leica; no charge for training at customer site)	no
• Extra charge for follow-up training	yes (travel expenses for company's technical representative to be paid by customer)	—	—
Instrument list price (as of June 2016)	\$16,995	—	—
Warranty	yes	yes	yes
• Length of warranty before purchasing service contract	1 year	1 year	1 year
Service contract	warranty provided by manufacturer	warranty provided by manufacturer	warranty provided by manufacturer
• Cost of annual service contract (as of June 2016)	\$1,800	—	—
Primary user safety features	—	instrument pauses if lid is opened; will stop run to prevent hazardous waste from overflowing	—
Primary productivity processing features	can run up to 5 racks at once	—	—
Distinguishing features (supplied by company)	—	<ul style="list-style-type: none"> • fast turnaround time reduces time to diagnosis and more slides per day can be processed • Covertile technology provides total tissue care; consistency and high-quality staining enable diagnostic confidence • efficiency; easy to learn; easy to run; easy to manage 	<ul style="list-style-type: none"> • small (50-mL) container for reagent savings • 3 optional running water stations for crisp, clear staining • continuous loading to accelerate turnaround time

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

Part 4/7	Leica Biosystems Ryan Gresavage ryan.gresavage@leicabiosystems.com 1700 Leider Lane Buffalo Grove, IL 60089 847-848-3230 www.leicabiosystems.com	Leica Biosystems Ryan Gresavage ryan.gresavage@leicabiosystems.com 1700 Leider Lane Buffalo Grove, IL 60089 847-848-3230 www.leicabiosystems.com	Medite Lab Solutions Michael Kenealy michaelk@medite-group.com 4203 S.W. 34th St. Orlando, FL 32811 407-996-9630 www.medite-group.com
See captodayonline.com/productguides for an interactive version of guide			
Name of automated staining instrument	ST5010 Autostainer XL	ST5020 Multistainer	TST44 Multi-Stainer
Intent of automated staining instrument Type of staining conducted on instrument featured in this guide Recommended applications	medical care, research use hematoxylin and eosin, histochemical/special stains histology, cytology, special staining	medical care, research use hematoxylin and eosin, histochemical/special stains histology, cytology, special staining	medical care, research use hematoxylin and eosin, histochemical/special stains histology, cytology, special staining
First-ever installation of this staining instrument Total No. of units installed in U.S./Outside U.S. (as of June 2016)	1992 —	2001 —	— 30+/1,000+ (largely Europe but worldwide)
Company produces and sells its own automated staining instruments Company sells this product through distribution partners • Vendors with which company partners	yes yes North Central Instruments	yes yes North Central Instruments	yes no —
Names of other automated staining instruments sold by company	ST4020 Linear Stainer, ST5020 Multistainer, BOND-MAX, BOND-III	—	COT 20 Linear Stainer
Provide list of client sites to potential customers on request	no (information is confidential)	no (information is confidential)	yes (partial list of comparable sites)
Model type • Dimensions (H x W x D) • Weight empty/Weight fully loaded	benchtop 20 x 43 x 26 in. 143 lbs./—	benchtop 42 x 28 x 22 in. 209 lbs./—	benchtop 48 x 26 x 25 in. 253 lbs./—
Automatic programmable start/Automatic programmable shutdown	no/no	yes/yes	yes/yes
Maximum slide capacity of instrument	400	250	up to 500 slides per hour
Instrument platform Staining host computer can be interfaced to an LIS • Type of computer interface to LIS Stainer can interface to a specimen-tracking system	individual no — yes	individual yes bidirectional —	individual no none no
Reagent configuration Instrument reagent application Uses for bulk reagents No. of tests or slides one reagent/test kit can handle	open reagent system patient slides submerged in shared reagents deparaffinization, rinsing 2,500 H&E slides	open reagent system patient slides submerged in shared reagents deparaffinization, rinsing 2,500 H&E slides; variable for special stain kits	open reagent system patient slides submerged in shared reagents rinsing varies based on user purpose
Staining configuration	user programmable	user programmable	user programmable
How slides on runs are handled	continuous load	continuous load	continuous load (30 slides per rack/up to 12 racks per run)
Options for reading slides placed on instrument • Information included in barcode • How barcode information is conveyed	— — —	— — —	— — —
Method of heating or drying slides Solution for rinsing slides Online coverslipping integrated into system	online drying system distilled water, tap water (inlet) yes (glass)	online drying system distilled water, tap water (inlet) yes (glass)	online drying system tap water (inlet) yes (glass)
Fume control	onboard filters	onboard filters	onboard filters, vented
User interface	keypad	touchscreen	keypad, keyboard with mouse
Onboard quality control • Onboard quality control for individual reagents • Types of quality control for reagents • Onboard quality control for staining program	no — — —	no — — —	yes yes temperature yes
Management of waste	manually by user	manually by user	manually by user
Required user maintenance • User maintenance records kept on instrument Required maintenance by vendor's service personnel • Vendor maintenance records kept on instrument	weekly — annually no	weekly — annually yes	weekly some annually some
User training and installation • User training included with purchase • Total time for standard installation and basic training • Approximate length of training per typical user • Follow-up training available • Extra charge for follow-up training	yes 3 hours 3 hours yes (upon customer request) no	yes 3 hours 3 hours yes (upon customer request) no	yes 1 day 8 hours yes (upon customer request) yes
Instrument list price (as of June 2016)	—	—	\$32,900
Warranty • Length of warranty before purchasing service contract	yes 1 year	yes 1 year	yes 1 year
Service contract • Cost of annual service contract (as of June 2016)	warranty provided by manufacturer —	warranty provided by manufacturer —	warranty provided by manufacturer \$2,790
Primary user safety features	—	—	loading and unloading without robotic movement in the area
Primary productivity processing features	—	—	can run up to 12 different protocols simultaneously
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> • can store up to 15 different user-defined protocols • reliable and simple software provides easy programming and one-touch operation • can integrate with a transfer station and automated coverslipper 	<ul style="list-style-type: none"> • ability to perform routine and/or special stains on histology and cytology slides in parallel • patented CodeRack technology with automated program assignment and start • can integrate with a transfer station and automated coverslipper 	<ul style="list-style-type: none"> • 6 water stations • 40 different programming steps • 30 staining stations

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

AUTOMATED STAINING INSTRUMENTS

Part 5/7	Roche Diagnostics Josh Wolfington joshua.wolfington@roche.com 9115 Hague Rd. Indianapolis, IN 46250 317-521-2182 www.usdiagnostics.roche.com	Roche Diagnostics David Smith david.smith.ds5@roche.com 9115 Hague Rd. Indianapolis, IN 46250 800-227-2155 www.ventana.com	Roche Diagnostics David Smith david.smith.ds5@roche.com 9115 Hague Rd. Indianapolis, IN 46250 800-227-2155 www.ventana.com
See captodayonline.com/productguides for an interactive version of guide			
Name of automated staining instrument	VENTANA HE 600 system	BenchMark ULTRA†	BenchMark XT†
Intent of automated staining instrument	medical care	medical care	medical care
Type of staining conducted on instrument featured in this guide	hematoxylin and eosin	immunohistochemical/in situ	immunohistochemical/in situ
Recommended applications	histology	histology, cytology	histology, cytology
First-ever installation of this staining instrument	2015	—	—
Total No. of units installed in U.S./Outside U.S. (as of June 2016)	25/18 (Europe, Australia, Asia)	—	—
Company produces and sells its own automated staining instruments	yes	yes	yes
Company sells this product through distribution partners	no	no	no
• Vendors with which company partners	—	—	—
Names of other automated staining instruments sold by company	BenchMark Special Stains, BenchMark ULTRA, BenchMark XT, DISCOVERY ULTRA, DISCOVERY XT	BenchMark XT, BenchMark GX, DISCOVERY ULTRA, DISCOVERY XT, BenchMark Special Stains, SYMPHONY	BenchMark ULTRA, DISCOVERY ULTRA, DISCOVERY XT, BenchMark GX, BenchMark Special Stains, SYMPHONY
Provide list of client sites to potential customers on request	no (information is confidential)	yes (partial list)	yes (partial list)
Model type	floor standing	floor standing	floor standing
• Dimensions (H × W × D)	90 × 64 × 35 in.	62 × 44 × 33 in.	60 × 35 × 26 in.
• Weight empty/Weight fully loaded	1,451 lbs./1,451 lbs.	—	—
Automatic programmable start/Automatic programmable shutdown	yes/yes	yes/yes	yes/yes
Maximum slide capacity of instrument	180–200 slides per hour	30	30
Instrument platform	individual	modular	modular
Staining host computer can be interfaced to an LIS	yes (but must have VENTANA VANTAGE workflow solution or VENTANA Connect software)	yes (LIS-agnostic interface)	yes (LIS-agnostic interface)
• Type of computer interface to LIS	bidirectional	bidirectional	bidirectional
Stainer can interface to a specimen-tracking system	yes	yes	yes
Reagent configuration	closed/proprietary system	combination of open and closed system	combination of open and closed system
Instrument reagent application	reagents applied to patient slides individually	reagents applied to patient slides individually	reagents applied to patient slides individually
Uses for bulk reagents	rinsing	deparaffinization, rinsing	deparaffinization, rinsing
No. of tests or slides one reagent/test kit can handle	depends on reagent	250	250
Staining configuration	set by manufacturer or user programmable (user's choice)	user programmable	user programmable
How slides on runs are handled	continuous run	continuous load	batch load (30 slides per rack/1 rack per run)
Options for reading slides placed on instrument	one- and two-dimensional open barcode	one-dimensional open barcode	one-dimensional open barcode
• Information included in barcode	—	—	—
• How barcode information is conveyed	—	—	—
Method of heating or drying slides	online drying system	online drying system	online drying system
Solution for rinsing slides	vendor-supplied solution	buffer	buffer
Online coverslipping integrated into system	yes (glass)	no	no
Fume control	vented	—	—
User interface	touchscreen	keyboard	keyboard
Onboard quality control	yes	yes	yes
• Onboard quality control for individual reagents	no	yes	yes
• Types of quality control for reagents	—	temperature	temperature
• Onboard quality control for staining program	yes	yes	yes
Management of waste	automated collection onboard instrument, direct to drain	automated collection onboard instrument	automated collection onboard instrument
Required user maintenance	none	daily, weekly, monthly, quarterly	daily, weekly, monthly, quarterly
• User maintenance records kept on instrument	yes	—	—
Required maintenance by vendor's service personnel	semi-annually	annually	annually
• Vendor maintenance records kept on instrument	—	—	—
User training and installation			
• User training included with purchase	yes	yes	yes
• Total time for standard installation and basic training	—	2 days	2 days
• Approximate length of training per typical user	—	4 hours	4 hours
• Follow-up training available	no	yes (upon customer request)	yes (upon customer request)
• Extra charge for follow-up training	no	no	no
Instrument list price (as of June 2016)	—	—	—
Warranty	yes	yes	yes
• Length of warranty before purchasing service contract	1 year	1 year	1 year
Service contract	warranty provided by manufacturer	warranty provided by manufacturer	warranty provided by manufacturer
• Cost of annual service contract (as of June 2016)	—	—	—
Primary user safety features	elimination of alcohol and xylene to reduce technician exposure to harmful chemicals	ready-to-use reagents; alarms and remote monitoring; automated waste collection; instrument pauses operation when hood is opened; more	ready-to-use reagents; automated waste collection; alarm functions; ergonomic design
Primary productivity processing features	continuous slide loading through 3 tray portals; 40–45 min. time to first result (depending on selected protocol); 180–200 slides per hour (depending on selected protocol); one-touch, walkaway user interface	single-piece flow processing; overnight run capability; simultaneous processing of IHC/ISH; intuitive visual user interface; barcoding of slides and reagents; continuous access to slides, reagents, bulks, waste; more	overnight run capability; barcoding of slides and reagents; protocol flexibility and simultaneous processing of IHC/ISH; can integrate with VANTAGE workflow solution; full automation of staining processes; batch processing of any IHC or ISH slides in any position
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> • individual slide staining to virtually eliminate tissue cross-contamination and produce high quality, consistent stains • improved technician safety by eliminating use of alcohol, xylene, and DI water • automated load-and-go workflow allows technicians to complete value-adding tasks in the lab 	<ul style="list-style-type: none"> • a market leader in automated IHC/ISH staining • large ready-to-use primary antibody menu with high medical value and companion diagnostic assays • single-piece flow processing enables faster turnaround time 	<ul style="list-style-type: none"> • a market leader in automated IHC/ISH staining • large ready-to-use primary antibody menu with high medical value and companion diagnostic assays • batch processing of any IHC or ISH slides in any position
<i>Note: a dash in lieu of an answer means company did not answer question or question is not applicable</i>		†all information listed was provided to CAP TODAY in 2014; company did not provide updated information by 2016 entry deadline	†all information listed was provided to CAP TODAY in 2014; company did not provide updated information by 2016 entry deadline

Part 6/7	Roche Diagnostics David Smith david.smith.ds5@roche.com 9115 Hague Rd. Indianapolis, IN 46250 800-227-2155 www.ventana.com	Sakura Finetek USA Claudio Scancich cscancich@sakuraus.com 1750 W. 214th St. Torrance, CA 90501 310-972-7800 www.sakura-americas.com	Sakura Finetek USA Claudio Scancich cscancich@sakuraus.com 1750 W. 214th St. Torrance, CA 90501 310-972-7800 www.sakura-americas.com
See captodayonline.com/productguides for an interactive version of guide			
Name of automated staining instrument	VENTANA BenchMark Special Stains System†	Histo-Tek SL Stainer, Slide Stainer	Tissue-Tek Prisma Automated Slide Stainer
Intent of automated staining instrument	medical care, research use	medical care, research use	medical care, research use
Type of staining conducted on instrument featured in this guide	histochemical/special stains	hematoxylin and eosin, histochemical/special stains	hematoxylin and eosin, histochemical/special stains
Recommended applications	special staining	histology, cytology, special staining	histology, cytology, special staining
First-ever installation of this staining instrument	—	2013	2006
Total No. of units installed in U.S./Outside U.S. (as of June 2016)	—	—	—
Company produces and sells its own automated staining instruments	yes	yes (but this instrument not manufactured by Sakura Finetek)	yes
Company sells this product through distribution partners	no	yes	yes
• Vendors with which company partners	—	Cardinal Health, VWR International, Government Scientific Source	Cardinal Health, VWR International, Government Scientific Source
Names of other automated staining instruments sold by company	BenchMark ULTRA, BenchMark XT, BenchMark GX, SYMPHONY, DISCOVERY XT, DISCOVERY ULTRA	Tissue-Tek Prisma Automated Slide Stainer	Histo-Tek SL Stainer, Slide Stainer
Provide list of client sites to potential customers on request	yes (partial list)	yes (partial list of comparable sites, with customer permission)	yes (partial list)
Model type	benchtop or floor standing	benchtop	benchtop
• Dimensions (H × W × D)	53 × 20 × 25 in.	16 × 32 × 31 in.	24.8 × 49.3 × 28 in.
• Weight empty/Weight fully loaded	—	55 lbs./65 lbs.	330 lbs./365 lbs.
Automatic programmable start/Automatic programmable shutdown	yes/yes	no/no	yes/no
Maximum slide capacity of instrument	20	120	660
Instrument platform	modular	individual	individual
Staining host computer can be interfaced to an LIS	yes (LIS-agnostic interface)	no	no
• Type of computer interface to LIS	bidirectional	none	none
Stainer can interface to a specimen-tracking system	yes	no	no
Reagent configuration	closed/proprietary system	open reagent system	open reagent system
Instrument reagent application	reagents applied to patient slides individually	patient slides submerged in shared reagents	patient slides submerged in shared reagents
Uses for bulk reagents	deparaffinization, rinsing	—	—
No. of tests or slides one reagent/test kit can handle	75	—	—
Staining configuration	user programmable	user programmable	user programmable
How slides on runs are handled	batch load (20 slides per rack/1 rack per run)	batch and continuous load (30 slides per rack/1 rack per run)	batch and continuous load (20 slides per rack/3 racks per run)
Options for reading slides placed on instrument	barcode with proprietary format	—	—
• Information included in barcode	—	—	—
• How barcode information is conveyed	—	—	—
Method of heating or drying slides	online drying system	offline drying system	online drying system (can be done offline if online not possible)
Solution for rinsing slides	buffer	distilled water, tap water (inlet and onboard system)	distilled water, tap water (inlet and onboard system)
Online coverslipping integrated into system	no	no	yes (glass, tape)
Fume control	onboard filters	onboard filters, vented	onboard filters, vented
User interface	keyboard	keypad	touchscreen
Onboard quality control	yes	no	no
• Onboard quality control for individual reagents	yes	no	no
• Types of quality control for reagents	temperature	—	—
• Onboard quality control for staining program	yes	yes	yes
Management of waste	automated collection onboard instrument	manually by user, direct to drain	manually by user, direct to drain
Required user maintenance	daily, weekly, quarterly	daily, weekly, monthly, quarterly	daily, weekly, monthly, quarterly
• User maintenance records kept on instrument	—	no	yes
Required maintenance by vendor's service personnel	annually	recommend annual preventive maintenance	recommend annual preventive maintenance
• Vendor maintenance records kept on instrument	—	no	no
User training and installation			
• User training included with purchase	yes	yes	yes
• Total time for standard installation and basic training	2 days	1 day	1 day
• Approximate length of training per typical user	4 hours	2 hours	2 hours
• Follow-up training available	yes (upon customer request)	yes (upon customer request)	yes (upon customer request)
• Extra charge for follow-up training	no	no	no
Instrument list price (as of June 2016)	—	—	—
Warranty	yes	yes	yes
• Length of warranty before purchasing service contract	1 year	1 year	1 year
Service contract	warranty provided by manufacturer	warranty provided by manufacturer	warranty provided by manufacturer, users can purchase parts
• Cost of annual service contract (as of June 2016)	—	—	—
Primary user safety features	ready-to-use reagents; ergonomic design	built-in charcoal filtering system and optional external venting system to minimize exposure to xylene fumes	built-in charcoal filtering system and optional external venting system to minimize exposure to xylene fumes
Primary productivity processing features	fully automated staining processes; eliminates batch processing with individual slide heating and full random-access processing capability	continuous loading of 30 slides per run with a small footprint; up to 120 slides per hour throughput	when configured as a stainer-coverslipper system, user continuously loads baskets of unstained slides with a throughput of up to 500 slides/hour and unloads baskets of stained and coverslipped slides from an output station hosting up to 12 baskets
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> eliminates manual processes and temperature dependencies with automated deparaffinization and independent slide heating decreased exposure risk for technicians with ready-to-use reagents fully automated staining for high quality, reproducible results 	<ul style="list-style-type: none"> smaller reservoirs for continuous loading of up to 30 slides per run flexible, open system accommodates 20-slide baskets for immediate loading to Tissue-Tek Film or Tissue-Tek Glas g2 	<ul style="list-style-type: none"> configurable with a film coverslipper or glass coverslipper high throughput of 500 slides/hour for Tissue-Tek Prisma and Tissue-Tek Film systems barcode-based slide tracking in both configurations: Tissue-Tek Prisma with Tissue-Tek Film and Tissue-Tek Glas g2
Note: a dash in lieu of an answer means company did not answer question or question is not applicable	†all information listed was provided to CAP TODAY in 2014; company did not provide updated information by 2016 entry deadline		

AUTOMATED STAINING INSTRUMENTS

Part 7/7	Thermo Fisher Scientific Customer Care peter.kilner@thermofisher.com 4481 Campus Drive Kalamazoo, MI 49008 800-522-7270 opt.1 www.thermoscientific.com/pathology
See captodayonline.com/productguides for an interactive version of guide	
Name of automated staining instrument	Thermo Scientific Gemini AS Slide Stainer [†]
Intent of automated staining instrument	medical care, research use
Type of staining conducted on instrument featured in this guide	hematoxylin and eosin, histochemical/special stains
Recommended applications	histology, cytology, special staining
First-ever installation of this staining instrument	—
Total No. of units installed in U.S./Outside U.S. (as of June 2016)	—
Company produces and sells its own automated staining instruments	yes
Company sells this product through distribution partners	yes
• Vendors with which company partners	Fisher Scientific, WWR, Cardinal Health
Names of other automated staining instruments sold by company	Varistain 24-4, Linistat
Provide list of client sites to potential customers on request	no (information is confidential)
Model type	benchtop
• Dimensions (H × W × D)	35 × 28 × 31 in.
• Weight empty/Weight fully loaded	—
Automatic programmable start/Automatic programmable shutdown	no/no
Maximum slide capacity of instrument	240
Instrument platform	individual
Staining host computer can be interfaced to an LIS	no
• Type of computer interface to LIS	—
Stainer can interface to a specimen-tracking system	no
Reagent configuration	open reagent system
Instrument reagent application	patient slides submerged in shared reagents
Uses for bulk reagents	—
No. of tests or slides one reagent/test kit can handle	variable (depends on reagents used)
Staining configuration	set by manufacturer or user programmable (user's choice)
How slides on runs are handled	continuous load
Options for reading slides placed on instrument	none
• Information included in barcode	—
• How barcode information is conveyed	—
Method of heating or drying slides	online drying system
Solution for rinsing slides	water (inlet); can connect to DI or regular tap water supply
Online coverslipping integrated into system	no
Fume control	onboard filters, vented
User interface	touchscreen
Onboard quality control	yes
• Onboard quality control for individual reagents	yes
• Types of quality control for reagents	number of racks stained
• Onboard quality control for staining program	yes
Management of waste	manually by user, direct to drain
Required user maintenance	daily, monthly
• User maintenance records kept on instrument	—
Required maintenance by vendor's service personnel	annually
• Vendor maintenance records kept on instrument	—
User training and installation	
• User training included with purchase	yes
• Total time for standard installation and basic training	2 days
• Approximate length of training per typical user	4 hours
• Follow-up training available	yes
• Extra charge for follow-up training	yes
Instrument list price (as of June 2016)	—
Warranty	yes
• Length of warranty before purchasing service contract	1 year
Service contract	warranty provided by manufacturer, users can be trained on site as service personnel
• Cost of annual service contract (as of June 2016)	—
Primary user safety features	ventilation and vapor filter to protect from fumes; enclosed design for fume containment; moving arm never crosses load area to protect users; vacuum breaker in water inlet to prevent backflow of contaminated water
Primary productivity processing features	5 independent heated ovens for high throughput; load doors programmable so each can be allocated to a specific protocol; 26 reagent stations
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> • 5 heated ovens for maximum throughput without the need for an offline oven; independent operation for reliability • small footprint so it can be positioned next to sectioning for optimal workflow • at-a-glance display of each rack's position and estimated completion time

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

[†]all information listed was provided to CAP TODAY in 2014; company did not provide updated information by 2016 entry deadline

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

CANCER BIOMARKERS CONFERENCE II

September 10-11, 2016

Houston Methodist Research Institute



Program Directors

Philip Cagle, MD, Houston Methodist Hospital; Randall Olsen, MD, PhD, Houston Methodist Hospital; Eric Bernicker, MD, Houston Methodist Hospital

Associate Program Directors

Lynette Sholl, MD; Stanley Hamilton, MD; Peter Yu, MD

Keynote Topics and Speakers

Perspectives on the Future of Cancer Biomarkers:

Daniel F. Hayes, MD, ASCO President

The Role of Professional Organizations in Cancer Biomarkers:

College of American Pathologists: Richard Friedberg, MD, PhD, MCHM, FCAP, President, College of American Pathologists

Pitfalls in Immune Therapy Biomarkers: Fred Hirsch, MD, PhD, IASLC Chief Executive Officer

When Research Converges with Clinical Application of Precision Medicine: Peter Yu, MD, Past President ASCO

Agenda Topics and Speakers

Clinical Rationale of Patient Selection and Treatment Based on Biomarkers: Eric Bernicker, MD

Preanalytic Specimen Collection and Handling: Sinchita Roy Chowdhuri, MD, PhD Regulation and Billing for Molecular Testing: Dara L. Aisner, MD, PhD

Update on Endometrial Cancer Biomarker Testing: Teri A. Longacre, MD

Update on Gastrointestinal Cancer Biomarker Testing: Angela N. Bartley, MD

Update on Breast Cancer Biomarker Testing: M. Elizabeth H. Hammond, MD

Update on HPV Head and Neck Squamous Cell Carcinoma Molecular Testing: Mary Schwartz, MD

Update on Biomarker Testing for Hematologic Malignancy: Eric Duncavage, MD

Update on Lung Cancer Biomarker Testing: Sanja Dacic, MD, PhD

Update on Melanoma Biomarker Testing: Patricia Chevez-Barrios, MD

Update on Mesothelioma Biomarker Testing: Alain Borczuk, MD

Liquid Biopsy for Cancer Biomarker Testing: Yimin Ge, MD

Update on PD-L1 Testing for Lung Cancer: Lynette Sholl, MD

Update on PD-L1 Testing for Urologic Cancers: Donna Hansel, MD, PhD

Update on PD-L1 Testing for Melanoma: Janis Marie Taube, MD, MSc

Update on PD-L1 Testing for Gynecologic Cancers: Brooke Howitt, MD

Panel Discussion Moderators

Timothy C. Allen, MD, JD; Roberto Barrios, MD; Michael Deavers, MD; Stanley Hamilton, MD; Dina Mody, MD; Jae Ro, MD, PhD; Steven Shen, MD, PhD; Luan Truong, MD; Elizabeth Wagar, MD; Youli Zu, MD, PhD

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