

AUTOMATED TISSUE PROCESSORS

Part 1/4	Biocare Medical Rhonda Henshall-Powell rhenshallpowell@biocare.net 4040 Pike Lane Concord, CA 94520 800-799-9499 www.biocare.net	Biocare Medical Rhonda Henshall-Powell rhenshallpowell@biocare.net 4040 Pike Lane Concord, CA 94520 800-799-9499 www.biocare.net	General Data Co. Adrienne Campbell acampbell@general-data.com 4354 Ferguson Drive Cincinnati, OH 45245 800-733-5252 www.general-data.com
See captodayonline.com/productguides for an interactive version of guide			
Name of automated tissue processor	PUREprocess Rapid Tissue Processor-300 with heat	PUREprocess Rapid Tissue Processor-360 with heat	RTPH-300 Rapid Tissue Processor
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	conventional, rapid	conventional, rapid	conventional, rapid
First-ever automated tissue processor install (any system)	—	—	2000
Company produces and sells its own tissue processors/Resells others	no/yes	no/yes	yes/no
• For whom company is a reseller	TBS, a division of General Data	TBS, a division of General Data	—
Company sells its products through distribution partners	yes	yes	yes
• Vendors with which company partners	international distributors	international distributors	Biocare, Cardinal Health, VWR, Fisher
Names of other automated tissue processors sold by company	PUREprocess Rapid Tissue Processor-360 with heat	PUREprocess Rapid Tissue Processor-300 with heat	ATP1, RTPH-360
Provide list of client sites to potential customers on request	yes (partial list)	yes (partial list)	yes (partial list)
Total No. of units installed in U.S./Outside U.S. (as of July 2014)	—	—	98/368 (in Italy, Germany, Asia, Czech Republic, Canada, United Kingdom, other countries)
Automatic programmable start/Shutdown	no/ —	yes/ —	yes/yes
Tissue processor can be interfaced to an LIS	no	no	no
• Type of computer interface to LIS	—	—	—
Tissue processor can be interfaced to a specimen-tracking system	no	no	no
Options for reading cassettes before they are placed on processor	—	—	—
Model type	floor standing	floor standing	floor standing
• Dimensions (H x W x D)	56.18 x 28.34 x 23.62 in.	46.25 x 28.5 x 29.5 in.	56.18 x 28.34 x 23.62 in.
• Weight	396 lbs.	496 lbs.	396.83 lbs.
Mechanics of tissue processor	heat, reagent exchange, fluid mixing	heat, reagent exchange, fluid mixing	vacuum, pressure, heat, reagent exchange, fluid mixing
Fume control	onboard filters	onboard filters	onboard filters, vented (built-in exhaust fan surrounding retort lid captures leftover processing fumes)
Specimen retort			
• Maximum block capacity per retort	300	360	300
• No. of retorts per instrument	1	1	1
Type of specimen cassettes recommended	standard, biopsy	standard, biopsy	standard, biopsy
• Recommended cassette inserts	SHURMark, SHURTrack	SHURMark, SHURTrack	—
• Prohibited cassette inserts	—	—	—
• Minimum–maximum No. of cassettes per process run	1– 300	1– 360	1– 300
• Cassette throughput per hour	300 (in 40 min.)	360 (in 40 min.)	300
Volume of fluids that can be kept on instrument	0–3.2 L	0–5 L	3.2 L
Reagent mode	xylene, xylene-free, reagent substitutes	xylene, xylene-free, reagent substitutes	xylene, xylene-free, reagent substitutes (alcohol, xylene, and formalin substitutes)
Specimen-processing time			
• Minimum–maximum processing time for biopsy specimens	40 min. to overnight	40 min. to overnight	45 min. to 13+ hours
Recommended minimum–maximum specimen thickness/size	—	—	<1 mm to >5 mm
• Minimum–maximum processing time for resection specimens	—	—	45 min. to 13+ hours
Recommended minimum–maximum specimen thickness/size	—	—	<1 mm to >5 mm
• Minimum–maximum processing time for bone specimens	—	—	—
Recommended minimum–maximum specimen thickness/size	—	—	—
User interface	touchscreen	touchscreen	touchscreen, keyboard, mouse (user's option)
Types of quality control	temperature	temperature	temperature
• Onboard quality control for processing program	yes	yes	yes
Management of waste	manually by user	manually by user	manually by user, automated collection onboard instrument, direct to drain (method used based on lab environment)
Required user maintenance	daily, weekly, monthly	daily, weekly, monthly	daily, weekly, monthly, quarterly, annually
Required maintenance by vendor's service personnel	annually	annually	annually
• Maintenance records kept onboard	—	—	no
User training and installation			
• User training included with purchase	—	—	yes
• Total time for standard installation and basic training	—	—	3 hours
• Training site	—	—	on site
• Approximate length of training per typical user	—	—	1 hour
• Follow-up training available	—	—	yes, for new users, issues, or misunderstanding
• Extra charge for follow-up training	—	—	yes
Warranty	yes	yes	yes
• Length of warranty coverage before purchasing service contract	1 year	1 year	1 year
Service contract	warranty provided by manufacturer only; users can purchase parts	warranty provided by manufacturer only; users can purchase parts	warranty provided by manufacturer or available through secondary source; users can be trained on site as service personnel; users can purchase parts
• Cost of annual service contract (as of July 2014)	—	—	\$4,360; one year extended after factory warranty; discounts apply when bundling subsequent years
Instrument list price (as of July 2014)	—	—	\$48,256
Primary instrument safety features	anti-blackout and power-failure devices; remote alarm; remote monitoring and servicing	anti-blackout and power-failure devices; remote alarm; remote monitoring and servicing	protocol retrieval following power outage or run interruption; battery backup; event signaling
Primary Lean workflow features	efficient reagent management	efficient reagent management	prefilled reagent bottles; intuitive software with quick access to protocols; more
Primary productivity processing features	rapid heat exchange; unique agitation	rapid heat exchange; unique agitation	rapid tissue processing (microwave free); reagent-management system; graphic remote fill and drain controls; wax cleaning cycle; more
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> unique agitation maximizes fluid and tissue exchange ratios maximal reliability due to innovative single rotary valve design easy cleaning and refills of reagents due to unique reagent bottle design 	<ul style="list-style-type: none"> unique agitation maximizes fluid and tissue exchange ratios maximal reliability due to innovative single rotary valve design easy cleaning and refills of reagents due to unique reagent bottle design 	<ul style="list-style-type: none"> processes and cleans in 75 minutes (turnaround time) enclosed reagent/pneumatic system that eliminates noxious vapors intuitive human machine interface software with logical hierarchical structures designed for easy navigation

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

AUTOMATED TISSUE PROCESSORS

Part 2/4	General Data Co. Adrienne Campbell acampbell@general-data.com 4354 Ferguson Drive Cincinnati, OH 45245 800-733-5252 www.general-data.com	Leica Biosystems Myla Patterson myla.patterson@leicabiosystems.com 1700 Leider Lane Buffalo Grove, IL 60089 312-720-9028 www.leicabiosystems.com	Leica Biosystems Myla Patterson myla.patterson@leicabiosystems.com 1700 Leider Lane Buffalo Grove, IL 60089 312-720-9028 www.leicabiosystems.com
See captodayonline.com/productguides for an interactive version of guide			
Name of automated tissue processor	RTPH-360 Rapid Tissue Processor	ASP6025	Peloris II
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	conventional, rapid	rapid	conventional, rapid
First-ever automated tissue processor install (any system)	2000	2004	2004
Company produces and sells its own tissue processors/Resells others	yes/no	yes/no	yes/no
• For whom company is a reseller	—	—	—
Company sells its products through distribution partners	yes	yes	yes
• Vendors with which company partners	Biocare, Cardinal Health, VWR, Fisher	NCI in North America	NCI in North America
Names of other automated tissue processors sold by company	ATP1, RTPH-300	Peloris II, ASP300S, ASP6025S, TP1020	ASP300S, ASP6025S, TP1020
Provide list of client sites to potential customers on request	yes (partial list)	—	—
Total No. of units installed in U.S./Outside U.S. (as of July 2014)	19/165 (in Italy, Germany, Asia, other countries)	—	—
Automatic programmable start/Shutdown	yes/yes	yes/yes	yes/no
Tissue processor can be interfaced to an LIS	no	no	no
• Type of computer interface to LIS	—	—	—
Tissue processor can be interfaced to a specimen-tracking system	no	no	no
Options for reading cassettes before they are placed on processor	—	Leica CEREBRO	two-dimensional open barcode
Model type	floor standing	floor standing	floor standing
• Dimensions (H × W × D)	46.25 × 28.5 × 29.5 in.	150 × 68 × 75 cm	59 × 33.7 × 28.4 in.
• Weight	496 lbs.	463 lbs.	730 lbs. (dry)/950 lbs. (with reagents)
Mechanics of tissue processor	vacuum, pressure, heat, reagent exchange, fluid mixing	vacuum, pressure, heat, reagent exchange, fluid mixing, reagent dilution	vacuum, pressure, heat, reagent exchange, reagent dilution
Fume control	onboard filters, vented	onboard filters, vented	onboard filters, vented
Specimen retort			
• Maximum block capacity per retort	360	300	300
• No. of retorts per instrument	1	1	2
Type of specimen cassettes recommended	standard, biopsy	standard, biopsy, specialty (mega cassettes)	standard, biopsy, specialty (mesh, mega, multicompartamental, small pore size)
• Recommended cassette inserts	—	metal springs	ActivFlo cassettes
• Prohibited cassette inserts	—	none	—
• Minimum–maximum No. of cassettes per process run	1–360	1–300	1–300 for xylene mode/216 for xylene-free mode
• Cassette throughput per hour	360	240	depends on protocol length
Volume of fluids that can be kept on instrument	5 L	5 L per station	5 L/bottle or station (16 reagent bottles and 4 wax stations)
Reagent mode	xylene, xylene-free, reagent substitutes (isopropanol, d-limonene, Isopar, Prefer)	xylene, xylene-free, reagent substitutes (clearing substitutes)	xylene, xylene-free, xylene substitutes (open system)
Specimen-processing time			
• Minimum–maximum processing time for biopsy specimens	45 min. to 13+ hours	1 hour to 2.5 hours	dependent on customer validation
Recommended minimum–maximum specimen thickness/size	<1 mm to >5 mm	0.05 mm to 2 mm	0.3 mm to about 3 mm
• Minimum–maximum processing time for resection specimens	45 min. to >13+ hours	4 hours to 8 hours	dependent on customer validation
Recommended minimum–maximum specimen thickness/size	<1 mm to >5 mm	2.5 mm to 5 mm	2.5 mm to 5 mm
• Minimum–maximum processing time for bone specimens	—	6 hours to 12 hours	dependent on customer validation
Recommended minimum–maximum specimen thickness/size	—	2 mm to 5 mm	0.3 mm to about 3 mm
User interface	touchscreen, keyboard, mouse (user's option)	touchscreen	touchscreen
Types of quality control	temperature	temperature, alcohol concentration measurement	temperature, pressure/vacuum, liquid level sensors in each retort
• Onboard quality control for processing program	yes	yes	—
Management of waste	manually by user, automated collection onboard instrument, direct to drain (method used based on lab environment)	manually by user, automated collection onboard instrument, direct to drain (combination of methods)	manually by user, automated collection onboard instrument, direct to drain (combination of methods)
Required user maintenance	daily, weekly, monthly, quarterly, annually	daily, weekly, monthly, annually	daily, weekly, monthly, quarterly
Required maintenance by vendor's service personnel	annually	monthly	annually
• Maintenance records kept onboard	no	no	no
User training and installation			
• User training included with purchase	yes	yes	yes
• Total time for standard installation and basic training	72 hours with programming, tuning, and testing	48 hours	8–16 hours
• Training site	on site	on site, off site	on site, corporate office
• Approximate length of training per typical user	2–4 hours	10 hours	13.5 hours
• Follow-up training available	yes, for new users, issues, or misunderstanding	yes, if user requested or trainer felt it was necessary	yes, at request of customer or indicated by performance in corporate training session
• Extra charge for follow-up training	yes	no	no
Warranty	yes	yes	yes
• Length of warranty coverage before purchasing service contract	1 year	1 year	1 year
Service contract	warranty provided by manufacturer or available through secondary source; users can be trained on site as service personnel; users can purchase parts	warranty provided by manufacturer only; users can purchase parts	warranty provided by manufacturer only; service contract purchase available
• Cost of annual service contract (as of July 2014)	\$7,182; one year extended after factory warranty; discounts apply when bundling subsequent years	\$10,125	\$16,305
Instrument list price (as of July 2014)	\$54,380.80	\$97,500	\$155,958
Primary instrument safety features	protocol retrieval following power outage or run interruption; battery backup; event signaling	battery backup; safe mode; reagent substitution	event codes if power lost; battery backup can be purchased; instrument resumes runs when power restored
Primary Lean workflow features	prefilled reagent bottles; intuitive software with quick access to protocols; more	—	—
Primary productivity processing features	rapid tissue processing (microwave free); graphic remote fill and drain controls; reagent partial load capacity; wax cleaning cycle; more	autorotation; paraffin exchange; xylene exchange; densitometer; remote fill/drain; more	—
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> processes and cleans in 75 minutes (turnaround time) partial load regulates reagent use based on processing cassettes; decreases processing times and reagent use intuitive human machine interface software with logical hierarchical structures for easy navigation 	<ul style="list-style-type: none"> battery backup safe mode paraffin top-off/exchange 	<ul style="list-style-type: none"> high-throughput processing to increase lab productivity high 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 3/4	Milestone Medical Angela Kelly a.kelly@milestonemed.com 6475 Technology Drive, Suite F Kalamazoo, MI 49009 866-995-5300 www.milestonemed.com	Milestone Medical Angela Kelly a.kelly@milestonemed.com 6475 Technology Drive, Suite F Kalamazoo, MI 49009 866-995-5300 www.milestonemed.com	Sakura Finetek USA John Rubino jrubino@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 tissue processor	LOGOS	Pathos Delta	Tissue-Tek Xpress x50 Rapid Tissue Processor
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	conventional, rapid, microwave, hybrid (combined microwave and conventional heating)	conventional, rapid, microwave, hybrid (combined microwave and conventional heating)	rapid, microwave, vacuum, heat
First-ever automated tissue processor install (any system)	2007	2007	1980
Company produces and sells its own tissue processors/Resells others	yes/no	yes/no	yes/no
• For whom company is a reseller	—	—	—
Company sells its products through distribution partners	no	no	yes
• Vendors with which company partners	—	—	Cardinal Health, VWR International, Government Scientific Source
Names of other automated tissue processors sold by company	Pathos Delta, LOGOS One, LOGOS J	LOGOS, LOGOS One, LOGOS J	Tissue-Tek Xpress x120 Rapid Tissue Processor, Tissue-Tek VIP 6 Vacuum Infiltration Processor
Provide list of client sites to potential customers on request	yes (references from clients that best match potential customer's workflow)	yes (references from clients that best match potential customer's workflow)	yes (partial list with consent of installed client sites)
Total No. of units installed in U.S./Outside U.S. (as of July 2014)	42/140	53/110	—
Automatic programmable start/Shutdown	yes/no	yes/no	yes/yes
Tissue processor can be interfaced to an LIS	no	no	no
• Type of computer interface to LIS	—	—	—
Tissue processor can be interfaced to a specimen-tracking system	no	no	no
Options for reading cassettes before they are placed on processor	—	—	—
Model type	floor standing	floor standing	floor standing
• Dimensions (H x W x D)	43 x 28 x 30 in.	60 x 28 x 28 in.	33 x 28 x 64 in.
• Weight	552 lbs.	552 lbs.	617 lbs.
Mechanics of tissue processor	vacuum, heat, reagent exchange	vacuum, heat, reagent exchange	vacuum, heat, low-wattage (60-watt) microwave technology
Fume control	vented, optional external filter	vented	onboard filters, vented
Specimen retort			
• Maximum block capacity per retort	300	300	40
• No. of retorts per instrument	2 (processing, paraffin)	2 (processing, paraffin)	2
Type of specimen cassettes recommended	standard, biopsy, specialty (mega, super mega)	standard, biopsy, specialty (mega, super mega)	standard, biopsy, specialty (orientation, shaved, core)
• Recommended cassette inserts	—	—	—
• Prohibited cassette inserts	—	—	—
• Minimum–maximum No. of cassettes per process run	1–300	1–300	1–40
• Cassette throughput per hour	dependent on tissue thickness	dependent on tissue thickness	50
Volume of fluids that can be kept on instrument	9 gal. (140 cassette version); 45 L (210 cassette version)	45 L	3.8 L
Reagent mode	xylene-free, reagent substitutes (formalin and xylene substitutes)	xylene, xylene-free, reagent substitutes (formalin and xylene substitutes)	xylene-free (Tissue-Tek Xpress reagents)
Specimen-processing time			
• Minimum–maximum processing time for biopsy specimens	47 min. to 2 hours 17 min.	47 min. to 2 hours 17 min.	90 min. to 180 min.
Recommended minimum–maximum specimen thickness/size	<1 mm to <2 mm	<1 mm to <2 mm	no minimum to 3 mm
• Minimum–maximum processing time for resection specimens	5 hours 56 min. to 7 hours 51 min.	5 hours 56 min. to 7 hours 51 min.	90 min. to 180 min.
Recommended minimum–maximum specimen thickness/size	<1 mm to <6 mm	<1 mm to <6 mm	no minimum to 3 mm
• Minimum–maximum processing time for bone specimens	1 hour 30 min. to 7 hours 51 min.	1 hour 30 min. to 7 hours 51 min.	180 min.
Recommended minimum–maximum specimen thickness/size	<2 mm to <5 mm	<2 mm to <5 mm	no minimum to 3 mm
User interface	touchscreen	touchscreen	touchscreen
Types of quality control	temperature, downloadable run reports	temperature, downloadable run reports	temperature
• Onboard quality control for processing program	yes	yes	no
Management of waste	manually by user	manually by user	automated collection onboard instrument, Xpress reagent bottles loaded to instrument used for waste disposal
Required user maintenance	daily, weekly, monthly	daily, weekly	weekly
Required maintenance by vendor's service personnel	annually	annually	bi-annual preventive maintenance
• Maintenance records kept onboard	yes	no	no
User training and installation			
• User training included with purchase	yes	yes	yes
• Total time for standard installation and basic training	12 hours	12 hours	4 days (including 13 PACE hours)
• Training site	off site	off site	on site, off site
• Approximate length of training per typical user	8–12 hours	8–12 hours	2 hours
• Follow-up training available	yes, at customer's request	yes, at customer's request	yes, on request
• Extra charge for follow-up training	yes	yes	no
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 July 2014)	warranty provided by manufacturer only; biomedical training available \$7,500–\$8,400	warranty provided by manufacturer only; biomedical training available \$10,200	warranty provided by manufacturer only —
Instrument list price (as of July 2014)	\$64,000 (140 cassette version) [†] and \$74,000 (210 cassette version) [†]	\$79,000 [†]	—
Primary instrument safety features	PID temperature control; battery backup; event log; remote alarm	PID temperature control; battery backup; event log; remote alarm	Sakura iSupport for remote monitoring of all modules; UPS bridges power interruptions of up to 90 seconds
Primary Lean workflow features	continuous batch processing; standard 1-gallon reagent container use (with 140 cassette version); 4-step, 4-reagent processing	—	continuous load/unload of magazines with up to 40 cassettes; low-wattage microwaves; more
Primary productivity processing features	rapid tissue processing; no retort cleaning cycle required in dual mode	rapid tissue processing	continuous throughput of up to 50 cassettes/hour
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> 4-step, 4-reagent protocols to improve quality and efficiency, simplify labor demands, reduce cost use of standard 1-gallon reagent containers to reduce exposure and change-over time (no decanting) xylene-free protocols to reduce exposure issues and disposal costs and extend paraffin life 	<ul style="list-style-type: none"> 4-step, 4-reagent protocols to improve quality and efficiency, simplify labor demands, reduce cost xylene-free protocols to reduce exposure issues and disposal costs and extend paraffin life 	<ul style="list-style-type: none"> allows continuous throughput of 50 cassettes an hour Tissue-Tek Xpress reagents eliminate formalin and xylene and liquid handling during reagent exchange mean time between repair of more than 52 weeks; iSupport remotely monitors all systems
Note: a dash in lieu of an answer means company did not answer question or question is not applicable	[†] includes PowerVar line conditioner and UPS	[†] includes PowerVar line conditioner and UPS	

AUTOMATED TISSUE PROCESSORS

Part 4/4	Sakura Finetek USA John Rubino jrubino@sakuraus.com 1750 W. 214th St. Torrance, CA 90501 310-972-7800 www.sakura-america.com	Sakura Finetek USA John Rubino jrubino@sakuraus.com 1750 W. 214th St. Torrance, CA 90501 310-972-7800 www.sakura-america.com	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	Tissue-Tek Xpress x120 Rapid Tissue Processor	Tissue-Tek VIP 6 Vacuum Infiltration Processor	Thermo Scientific Excelsior AS Tissue Processor
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, microwave, vacuum, heat	conventional	conventional, rapid
First-ever automated tissue processor install (any system)	1980	1980	approximately 1970
Company produces and sells its own tissue processors/Resells others	yes/no	yes/no	yes/no
• For whom company is a reseller	—	—	—
Company sells its products through distribution partners	yes	yes	yes
• Vendors with which company partners	Cardinal Health, VWR International, Government Scientific Source	Cardinal Health, VWR International, Government Scientific Source	Fisher Scientific, VWR International, Cardinal Health
Names of other automated tissue processors sold by company	Tissue-Tek Xpress x50 Rapid Tissue Processor, Tissue-Tek VIP 6 Vacuum Infiltration Processor	Tissue-Tek Xpress x120 Rapid Tissue Processor, Tissue-Tek Xpress x50 Rapid Tissue Processor	Thermo Scientific STP120 Spin Tissue Processor, Thermo Scientific TissueWave II Microwave Tissue 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)	no (information is confidential)
Total No. of units installed in U.S./Outside U.S. (as of July 2014)	—	—	—
Automatic programmable start/Shutdown	yes/yes	yes/yes	yes/yes
Tissue processor can be interfaced to an LIS	no	no	yes (to most systems)
• Type of computer interface to LIS	—	—	unidirectional
Tissue processor can be interfaced to a specimen-tracking system	no	no	no
Options for reading cassettes before they are placed on processor	—	—	relies on cassette printer at grossing
Model type	floor standing	floor standing	floor standing
• Dimensions (H x W x D)	67 x 28 x 64 in.	24 x 27 x 54 in.	54 x 28 x 23 in.
• Weight	1,014 lbs.	160 lbs.	363 lbs. (empty)/551 lbs. (loaded)
Mechanics of tissue processor	vacuum, heat, low-wattage (60-watt) microwave technology	vacuum, pressure, heat, reagent exchange, fluid mixing	vacuum, heat, reagent exchange, reagent dilution, automatic measurement of alcohol concentration and rotation of reagents when triggered
Fume control	onboard filters, vented	onboard filters, vented	onboard filters, vented
Specimen retort			
• Maximum block capacity per retort	40	300	300
• No. of retorts per instrument	4	1	1
Type of specimen cassettes recommended	standard, biopsy, specialty (orientation, shaved, core)	standard, biopsy, specialty (mega cassettes)	standard, biopsy, specialty
• Recommended cassette inserts	—	—	—
• Prohibited cassette inserts	—	—	none
• Minimum–maximum No. of cassettes per process run	1–40	1–300	1–300
• Cassette throughput per hour	120	dependent on protocol	dependent on protocol
Volume of fluids that can be kept on instrument	7.6 L	81.6 L (includes paraffin, cleaning solution)	1 gallon (3.8 L) or 5 L of each reagent
Reagent mode	xylene-free (Tissue-Tek Xpress reagents)	xylene, xylene-free, reagent substitutes (open system)	xylene, xylene-free, reagent substitutes
Specimen-processing time			
• Minimum–maximum processing time for biopsy specimens	60 min. to 120 min.	dependent on protocol	1 hour 15 min. for needle cores; 1 hour 57 min. for 2-mm biopsies
Recommended minimum–maximum specimen thickness/size	no minimum to 3 mm	none recommended	—
• Minimum–maximum processing time for resection specimens	60 min. to 120 min.	dependent on protocol	7 hours 23 min. minimum
Recommended minimum–maximum specimen thickness/size	no minimum to 3 mm	none recommended	5 mm maximum
• Minimum–maximum processing time for bone specimens	120 min.	dependent on protocol	dependent on local/specimen factors
Recommended minimum–maximum specimen thickness/size	no minimum to 3 mm	none recommended	—
User interface	touchscreen	touchscreen	touchscreen
Types of quality control	temperature	temperature	temperature, dilution, fill level, more
• Onboard quality control for processing program	no	no	yes
Management of waste	automated collection onboard instrument, Xpress reagent bottles loaded to instrument used for waste disposal	reagents drained to external bottle or bottle on instrument via exchange solution program or bottles manually removed and fluids disposed	automated collection onboard instrument
Required user maintenance	weekly	daily, weekly, monthly	daily
Required maintenance by vendor's service personnel	bi-annual preventive maintenance	annually	annually
• Maintenance records kept onboard	no	no	yes
User training and installation			
• User training included with purchase	yes	yes	yes
• Total time for standard installation and basic training	4 days (including 13 PACE hours)	2 days (including 6 PACE credits)	4 days
• Training site	on site, off site	off site	on site
• Approximate length of training per typical user	2 hours	4 hours	12 hours
• Follow-up training available	yes, on request	yes, on request	yes, by negotiation as required
• Extra charge for follow-up training	no	yes	yes
Warranty			
• Length of warranty coverage before purchasing service contract	yes 1 year	yes 1 year	yes 1 year
Service contract	warranty provided by manufacturer only	warranty provided by manufacturer only	warranty provided by manufacturer only; users can be trained on site as service personnel
• Cost of annual service contract (as of July 2014)	—	—	\$7,875
Instrument list price (as of July 2014)	—	—	\$66,530
Primary instrument safety features	Sakura iSupport for remote monitoring of all modules; UPS bridges power interruptions of up to 90 seconds	safeguards to reduce tissue overheating and over-processing	integrated battery backup; level sensing; downdraft fan; disposable wax discard drawer; alarms; more
Primary Lean workflow features	continuous load/unload of magazines with up to 40 cassettes; low-wattage microwaves; more	exclusive paraffin waste reservoir automates rotation of paraffins during processing	automatic measurement of alcohol concentration and reagent rotation; reagents loaded in manufacturer's bottle; more
Primary productivity processing features	continuous throughput of up to 120 cassettes/hour	rapid protocols allow processing of biopsy specimens in less than 90 minutes	short processing cycles; downloadable reports for CLIA and others; single bottle replacement; more
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> allows continuous throughput of 120 cassettes an hour Tissue-Tek Xpress reagents eliminate formalin and xylene and liquid handling during reagent exchange mean time between repair of more than 52 weeks; iSupport remotely monitors all systems 	<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 bubble-free reagent filling of retort 	<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 by up to 75 percent 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

TISSUE-EMBEDDING INSTRUMENTS

Part 1/2	General Data Co. Adrienne Campbell acampbell@general-data.com 4354 Ferguson Drive Cincinnati, OH 45245 800-733-5252 www.general-data.com	Leica Biosystems Allison Schenck allison.schenck@leicabiosystems.com 1700 Leider Lane Buffalo Grove, IL 60089 815-451-7565 www.leicabiosystems.com	Milestone Medical Angela Kelly a.kelly@milestonemed.com 6475 Technology Drive, Suite F Kalamazoo, MI 49009 866-995-5300 www.milestonemed.com
See captodayonline.com/productguides for an interactive version of guide			
Name of tissue-embedding instrument	TEC-II Tissue Embedding Center	EG1150	Synergy
Intent of tissue-embedding instrument featured in this guide	medical care, research use	medical care, research use	medical care, research use
First-ever tissue-embedding instrument install (any system)	1994	—	2014
Company produces and sells its own tissue-embedding instruments/Resells others • For whom company is a reseller	yes/no —	yes/no —	yes/no —
Company sells its products through distribution partners • Vendors with which company partners	yes Biocare, Cardinal Health, WWR, Fisher	no —	no —
Names of other tissue-embedding instruments sold by company	TEC-I	EG1150H, EG1150C	—
Provide list of client sites to potential customers on request	yes (partial list)	no (information is confidential)	yes (partial list; references from customers who best match the potential customer's workflow)
Total No. of units installed in U.S./Outside U.S. (as of July 2014)	7/3	—	—
Automatic programmable start/Shutdown	yes/yes	yes/no	yes/no
Tissue-embedding instrument can be interfaced to an LIS	no	no	no
Dimensions of complete tissue-embedding instrument (H × W × D) • If modular, dimensions of dispensing console (H × W × D) • If modular, dimensions of cold plate (H × W × D)	17 × 36 × 26 in. 17 × 23 × 26 in. 16 × 13 × 24 in.	360 × 720 × 650 mm 360 × 360 × 640 mm 360 × 360 × 650 mm	60 × 28 × 28 in. — —
Weight of complete tissue-embedding instrument • If modular, weight of dispensing console • If modular, weight of cold plate	117 lbs. 62 lbs. 55 lbs.	116 lbs. 66 lbs. 50 lbs.	552 lbs. — —
Paraffin chamber • Capacity of paraffin chamber • Temperature range of paraffin chamber • Types of paraffin that can be used in chamber	yes 5 L 50–70°C all paraffin	yes 3 L 55–70°C all paraffin	yes 4 L 65–70°C Synergy paraffin
Thermal tissue-storage chambers • Total No. of thermal tissue-storage chambers • Cassette capacity of storage chamber • Recommended method for holding tissue • Temperature range of storage chamber	1 240 molten paraffin 50–70°C	2 100 molten paraffin 18–40°C	— — molten paraffin —
Cooling plates or cooling area • Cooling area/plate configuration • No. of cooling plates that can be used per each dispensing unit • How cooling plates are connected to thermal unit • Temperature range of cooling plates	cooling plates standalone 2 — 0 to –12°C	cooling area — — — —	neither — — — —
Embedding mold storage • No. of molds per storage compartment • Recommended mold	1 standard metal or disposable plastic	70 standard metal or disposable plastic	45 proprietary cassette molds
Paraffin-dispensing mechanism	switch or foot pad	automated	automated
User interface	membrane touch pad	keyboard	touchscreen
Management of waste	paraffin collection in waste disposal trays where the operator manually dumps	automated collection onboard instrument, direct to drain	manually by user
Required user maintenance Required maintenance by vendor's service personnel • Maintenance records kept onboard	daily, weekly, annually annually no	weekly annually no	daily, weekly annually no
User training and installation • User training included with purchase • Total time for standard installation and basic training • Training site • Approximate length of training per typical user • Follow-up training available • Extra charge for follow-up training	yes 2 hours on site less than 1 hour yes, for new users, issues, or misunderstanding yes	yes 1 hour on site 1 hour yes, per customer request no	yes — — — — —
Warranty • Length of warranty coverage before purchasing service contract	yes 1 year	yes 1 year	yes —
Service contract • Cost of annual service contract (as of July 2014)	warranty provided by manufacturer or available through secondary source; users can be trained on site as service personnel; users can purchase parts \$1,185; one year extended after factory warranty; discounts apply when bundling subsequent years	warranty provided by manufacturer only —	warranty provided by manufacturer only; users can be trained on site as service personnel —
Instrument list price (as of July 2014)	\$16,724.05	—	—
Primary instrument safety features	independently controlled thermostats with auto shut-off, ergonomic work area with built-in armrest; adaptable for left- or right-handed operators	programmable working days and time	—
Primary patient safety features	independently controlled thermostats with auto shut-off	protection from overheating	—
Primary Lean workflow features	auto on/off; paraffin reservoir stays hot while work surface and cold plate are off; adjustable for left- and right-handed operators; removable tissue storage and mold storage trays; two removable waste disposal trays, more	adjustable paraffin flow rate	—
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> • adaptable embedding center with large ergonomic work surface • automatic on/off feature enables user to program desired operating times while excluding weekends and holidays • versatile cold plate designed for standalone operations or dispensing console integration 	<ul style="list-style-type: none"> • adjustable embedding center height • modular design • rounded armrests 	

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

Part 2/2	Sakura Finetek USA John Rubino jrubino@sakuraus.com 1750 W. 214th St. Torrance, CA 90501 310-972-7800 www.sakura-americas.com	Sakura Finetek USA John Rubino jrubino@sakuraus.com 1750 W. 214th St. Torrance, CA 90501 310-972-7800 www.sakura-americas.com	Thermo Fisher Scientific Peter Kilner peter.kilner@thermofisher.com 4481 Campus Drive Kalamazoo, MI 49008 800-522-7270 option 1 www.thermoscientific.com/pathology
See captodayonline.com/productguides for an interactive version of guide			
Name of tissue-embedding instrument	Tissue-Tek AutoTEC Automated Embedder	Tissue-Tek TEC 5 Tissue Embedding Console System	Thermo Scientific HistoStar Embedding Center
Intent of tissue-embedding instrument featured in this guide	medical care	medical care, research use	medical care, research use
First-ever tissue-embedding instrument install (any system)	1999	1999	approximately 1970
Company produces and sells its own tissue-embedding instruments/Resells others	yes/no	yes/no	yes/no
• For whom company is a reseller	—	—	—
Company sells its products through distribution partners	yes	yes	yes
• Vendors with which company partners	Cardinal Health, VWR International, Government Scientific Source	Cardinal Health, VWR International, Government Scientific Source	Fisher Scientific, VWR, Cardinal Health
Names of other tissue-embedding instruments sold by company	Tissue-Tek TEC 5 Tissue Embedding Console System	Tissue-Tek AutoTEC Automated Embedder	—
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)	no (information is confidential)
Total No. of units installed in U.S./Outside U.S. (as of July 2014)	—	—	—
Automatic programmable start/Shutdown	yes/yes	yes/yes	yes/yes
Tissue-embedding instrument can be interfaced to an LIS	no	no	no
Dimensions of complete tissue-embedding instrument (H x W x D)	54 x 30 x 60 in.	36 x 24 x 15 in.	16.1 x 42.6 x 23.6 in.
• If modular, dimensions of dispensing console (H x W x D)	—	23 x 24 x 15 in.	16.1 x 25.6 x 23.6 in.
• If modular, dimensions of cold plate (H x W x D)	—	14.8 x 13 x 24.3 in.	16.1 x 17.0 x 23.6 in.
Weight of complete tissue-embedding instrument	880 lbs.	88 lbs.	99.22 lbs.
• If modular, weight of dispensing console	—	44 lbs.	55.12 lbs.
• If modular, weight of cold plate	—	44 lbs.	44.1 lbs.
Paraffin chamber	yes	yes	yes
• Capacity of paraffin chamber	4.8 L	4 L	5 L
• Temperature range of paraffin chamber	65°C	50–70°C	50–70°C
• Types of paraffin that can be used in chamber	Tissue-Tek Paraform paraffin, Formula 3, Cat#7052	all paraffin (recommend Tissue-Tek Paraform paraffin, Formula 3, Cat#7052)	all paraffin
Thermal tissue-storage chambers			
• Total No. of thermal tissue-storage chambers	2	2	1
• Cassette capacity of storage chamber	150	160	>300
• Recommended method for holding tissue	dry	option of molten paraffin or dry	option of molten paraffin or dry
• Temperature range of storage chamber	15–35°C	50–70°C	50–70°C
Cooling plates or cooling area	cooling plates	cooling plates	—
• Cooling area/plate configuration	must be connected	can be standalone or connected	—
• No. of cooling plates that can be used per each dispensing unit	24	2	—
• How cooling plates are connected to thermal unit	each Paraform cassette is placed into one of 24 built-in base molds, 65°C paraffin is dispensed, then base mold is cooled to 1°C; the created block is moved to storage area	cryo module power plug connected to embedding module	—
• Temperature range of cooling plates	1–65°C	–10–0°C	—
Embedding mold storage			
• No. of molds per storage compartment	24	>160 base molds, depending on sizes	>300
• Recommended mold	permanent built-in base molds	standard metal	standard metal or disposable plastic
Paraffin-dispensing mechanism	automated	semi-automated; operator presses finger plate or foot pedal to dispense paraffin as needed	adjustable position lever or optional foot pedal
User interface	touchscreen	key pad located below screen on instrument	touchscreen
Management of waste	direct to drain	manually by user	automated collection onboard instrument
Required user maintenance	daily	daily (replenish paraffin; remove excess paraffin on embedding module; remove excess water on cold plate)	top up wax and remove waste wax as required
Required maintenance by vendor's service personnel	biannual preventive maintenance	—	annually
• Maintenance records kept onboard	no	no	no
User training and installation			
• User training included with purchase	yes	yes	yes
• Total time for standard installation and basic training	4 days	½ day	½ day
• Training site	both on site and off site	on site	on site
• Approximate length of training per typical user	13 hours	2 hours	1 hour
• Follow-up training available	yes, on request	yes, on request	yes, negotiated with each user (follow-up training unlikely as instrument is very simple)
• Extra charge for follow-up training	yes	yes	yes
Warranty	yes	yes	yes
• Length of warranty coverage before purchasing service contract	1 year	1 year	1 year
Service contract	warranty provided by manufacturer only	warranty provided by manufacturer only	warranty provided by manufacturer only; users can be trained on site as service personnel
• Cost of annual service contract (as of July 2014)	—	—	\$3,465
Instrument list price (as of July 2014)	—	—	\$13,500
Primary instrument safety features	Sakura iSupport provides remote monitoring of all systems to provide quickest response possible for instrument service needs; UPS to bridge power outage	automatic start up and shut down, which can be preset by user	over temperature cutout
Primary patient safety features	tissue orientation preserved from grossing to microscopy	—	adjustable, built-in LED illumination to see specimens clearly and facilitate complete transfer from cassette and proper orientation
Primary Lean workflow features	fully automates tissue embedding; produces 120 cassettes/hour; enables continuous loading of magazines with up to 32 cassettes; more	symmetrical and ergonomic 3-field workstation to accommodate right-to-left and left-to-right operation	72-cassette cold plate; large working area; adjustable automatic power-off when not in use; integrated LED lighting; cassette chamber can hold an entire VIP or Excelsior set of baskets
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> fully automated tissue embedder with a throughput of up to 120 cassettes/hour tissue orientated in grossing kept constant through microscopy user can continuously load up to four magazines, with each up to 32 Paraform cassettes 	<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 	<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)

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

AUTOMATED MICROTOMES

Part 1/2	Biocare Medical Rhonda Henshall-Powell rhenshallpowell@biocare.net 4040 Pike Lane Concord, CA 94520 800-799-9499 www.biocare.net	General Data Co. Adrienne Campbell acampbell@general-data.com 4354 Ferguson Drive Cincinnati, OH 45245 800-733-5252 www.general-data.com	Leica Biosystems Jennifer Walsh jennifer.walsh@leicabiosystems.com 1700 Leiber Lane Buffalo Grove, IL 60089 800-248-0123 www.leicabiosystems.com
See captodayonline.com/productguides for an interactive version of guide			
Name of automated microtome	PUREcut Microtome 3000	SHURCut Microtome	RM2255
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	traditional histology microscopy
First-ever automated microtome install (any system)	—	1989	—
Company produces and sells its own automated microtomes/Resells others	no/yes	yes/no	yes/no
• For whom company is a reseller	TBS, a division of General Data	—	—
Company sells its products through distribution partners	yes	yes	yes
• Vendors with which company partners	international distributors	Biocare, Cardinal Health, VWR, Fisher	North Central Instruments
Names of other automated microtomes sold by company	—	SC4500 Automated Microtome	RM2265
Provide list of client sites to potential customers on request	yes (partial list)	yes (partial list)	yes (partial list, with permission of reference customers)
Total No. of units installed in U.S./Outside U.S. (as of July 2014)	—	31/21	—
Automatic programmable start/Shutdown	no/no	no/no	no/no
Configuration of microtome	sliding, rotary	rotary	rotary
Mechanics of microtome	continuous mode, single-section mode	continuous mode, single-section mode, rock mode, trim mode, section mode, retraction mode	continuous mode, single-section mode, partial-section mode, rock mode, trim mode
• Cutting range	0.5–600 µm	0–600 µm	30 µm
• Cutting speed	730 µm/sec.	30 adjustable speed settings	420 µm/sec.
• Display monitors	yes	yes	yes
Driving mechanism of microtome	retracting (5–100 µm)	retracting (5–100 µm)	retracting (self-adjusting in motorized mode and off mode/5–100 µm in manual mode)
Specimen orientation			
• Type of specimen holder or clamp	quick release for regular tissue cassettes, standard clamp for irregular cassettes	quick release for regular tissue cassettes, standard clamp for irregular 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
• Adjustment mechanism	manual dial	electronic button	manual dial
• Block home position clearly identified	yes	yes	yes
Microtome senses ID of each block as placed for cutting	no	no	no
Sectioning thickness			
• Cutting range	0.5–600 µm	0–600 µm	0.5–100 µm
• Trimming range	0.5–600 µm	0–600 µm	1–600 µm
• Type of adjustment mechanism	electronic button	electronic button	electronic button
• Sectioning modes	single section, continuous sections	single section, continuous sections, rock mode, section mode, retraction mode	single section, continuous sections, partial sections, rock mode
Type of microtome blades	disposable (high- and low-profile blades) or reusable steel/carbide knives	disposable (high- and low-profile blades) or reusable steel/carbide knives	disposable (high- and low-profile blades; separate holder required for each blade), reusable steel/carbide knives, diamond and glass knives
• Cutting angle adjustment	adjust with lever	adjust with lever	adjust with wrench
Required user maintenance	daily	daily, quarterly, annually, as needed	daily
Required maintenance by vendor's service personnel	annually	annually	annually
• Maintenance records kept onboard	no	no	no
User training and installation			
• User training included with purchase	—	yes	yes
• Total time for standard installation and basic training	—	2 hours	2 hours
• Training site	—	on site	on site
• Approximate length of training per typical user	—	2 hours	1 hour
• Follow-up training available	—	yes, for new users, issues, or misunderstanding	yes, on customer request
• Extra charge for follow-up training	—	yes	no
Warranty	yes	yes	yes
• Length of warranty coverage before purchasing service contract	1 year	1 year	1 year
Service contract	warranty provided by manufacturer only	warranty provided by manufacturer or available through secondary source; users can be trained on site as service personnel; users can purchase parts	warranty provided by manufacturer only; user can purchase parts
• Cost of annual service contract (as of July 2014)	—	\$1,185; one year extended after factory warranty; discounts apply when bundling subsequent years	—
Instrument list price (as of July 2014)	—	\$17,115	\$20,356
Primary instrument safety features	blade guard, emergency stop button, wheel locks	blade guard, emergency stop button, wheel locks	blade guard, blade ejector, emergency stop button, wheel locks
Primary Lean workflow features	lateral displacement feature utilizes entire disposable blade without moving blade in holder	high/low profile blade holder; position memory and feed buttons; continuous/manual mode (cut manually while in continuous mode); single/manual mode; rocking method without switching modes; more	zero position on orientation; easy handling of waste; quick clamp exchange; patented hand wheel balance system; more
Primary productivity processing features	automatic specimen position memory	fully automated sectioning; adjustable sectioning speeds; programmable retraction; trim/section cutting modes; memory/feed buttons; hand pad; foot pad; more	three predefined positions on blade holder; clearance angle will not change once set with allen key
Primary ergonomic features	adjustable hand-pad placement	fully automated sectioning; operator hand pad; automation foot switch; balanced lightweight sectioning hand wheel (adjustable); motorized course feed; quick-release block holder	safe blade and specimen handling; smooth rounded edges; ergonomic hand wheel handle
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> • ergonomic design reduces work-related repetitive motion stress issues • microprocessor control allows switching between manual, continuous, and single-stroke cutting modes with a single button • specimen positioning memory function automates workflow 	<ul style="list-style-type: none"> • balanced, lightweight operator hand wheel • progressive firmware designed for Lean workflow laboratories • universal quick-release high/low profile blade holder for disposable blades 	<ul style="list-style-type: none"> • patented hand wheel balance system • blade holder with blade removal help • 140 years of experience in microtomy

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

Part 2/2	Sakura Finetek USA Alycia Rios arios@sakuraus.com 1750 W. 214th St. Torrance, CA 90501 800-725-8723 ext. 7947 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	Thermo Scientific HM 355S Rotary Microtome
Intent of automated microtome featured in this guide	medical care, research use	medical care, research use
Specific uses for automated microtome	traditional histology microscopy	traditional histology microscopy
First-ever automated microtome install (any system)	2013	1990
Company produces and sells its own automated microtomes/Resells others	yes/no	yes/no
• For whom company is a reseller	—	—
Company sells its products through distribution partners	yes	yes
• Vendors with which company partners	Cardinal Health, VWR International, Government Scientific Source	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, with consent of installed client sites)	no (information is confidential)
Total No. of units installed in U.S./Outside U.S. (as of July 2014)	—	—
Automatic programmable start/Shutdown	yes/no	no/no
Configuration of microtome	fully automated drive by wire microtome with Bluetooth remote control	rotary
Mechanics of microtome	continuous mode; single-section mode; rock mode; trim mode; Sakura AutoAlign, AutoTrim, and AutoSection technology	continuous mode, single-section mode, rock mode, trim mode, interval mode
• Cutting range	0.5–100 µm	0.5–100 µm
• Cutting speed	10–450 µm/sec.	—
• Display monitors	yes	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	quick release for regular tissue cassettes, motorized 3D chuck with automatic block face alignment to the blade	quick release for regular tissue cassettes, standard clamp for irregular cassettes, clamp for large blocks, small clamps for resin and minute samples
• Adjustment mechanism	electronic button	electronic button
• Block home position clearly identified	yes	yes
Microtome senses ID of each block as placed for cutting	no	no
Sectioning thickness		
• Cutting range	0.5–100 µm	0.5–100 µm
• Trimming range	1–200 µm	5–500 µm
• Type of adjustment mechanism	electronic button	electronic button
• Sectioning modes	single section; continuous sections; rock mode; 16 programmable sectioning protocols, each having 15 steps	single section, continuous sections, rock mode, interval mode
Type of microtome blades	disposable (high- and low-profile blades)	disposable (high- and low-profile blades) or reusable steel/carbide knives
• Cutting angle adjustment	no adjustment needed (fixed blade holder; block aligns to blade)	adjust with lever
Required user maintenance	daily, annually	weekly
Required maintenance by vendor's service personnel	annually	annually
• Maintenance records kept onboard	no	no
User training and installation		
• User training included with purchase	yes	yes
• Total time for standard installation and basic training	4 hours	2–4 hours
• Training site	on site	on site
• Approximate length of training per typical user	3 hours	1 hour
• Follow-up training available	yes, train the trainer	yes, on an as-needed basis
• Extra charge for follow-up training	no	no
Warranty	yes	yes
• Length of warranty coverage before purchasing service contract	1 year	1 year
Service contract	warranty provided by manufacturer only	warranty provided by manufacturer only
• Cost of annual service contract (as of July 2014)	—	—
Instrument list price (as of July 2014)	—	—
Primary instrument safety features	blade guard, emergency stop button, wheel locks	blade guard, emergency stop button, wheel locks
Primary Lean workflow features	AutoAlign aligns block to blade; AutoTrim removes pre-defined amount of paraffin from block in 10 seconds; 16 programmable sectioning programs	easily adjustable zero position head; wraparound waste tray
Primary productivity processing features	fixed blade holder; 3D 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	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 while preserving tissue quickly and efficiently face blocks in 10 seconds with AutoTrim optimizes and standardizes sectioning for each tissue type with programmable sectioning 	<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

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AUTOMATED STAINING INSTRUMENTS

Part 1/6	Agilent Technologies, Dako Doug Felten doug.felten@dako.com 6392 Via Real Carpinteria, CA 93013 800-235-5743 www.dako.com	Agilent Technologies, Dako Debra Cobb debra.cobb@dako.com 6392 Via Real Carpinteria, CA 93013 800-235-5743 www.dako.com	Agilent Technologies, Dako Christopher Marino chris.marino@dako.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	Autostainer Link 48	Dako Artisan Link Pro	Dako CoverStainer
Intent of automated staining instrument	medical care, research use	medical care	medical care, research use
Type of staining conducted on instrument featured in this guide	immunohistochemical/in situ	histochemical/special stains	hematoxylin and eosin
Recommended applications	histology, cytology	special staining	histology
First-ever automated staining instrument install (any system)	1997	1997	1997
Company produces and sells its own automated staining instruments/Resells others	yes/no	yes/no	yes/no
• For whom company is a reseller	—	—	—
Company sells its products through distribution partners	yes (outside the U.S. and Canada)	yes (outside the U.S. and Canada)	yes (outside the U.S. and Canada)
• Vendors with which company partners	—	—	—
Names of other automated staining instruments sold by company	Dako Omnis, Dako CoverStainer, Dako Artisan Link Pro	Dako Autostainer Link 48, Dako Omnis, Dako CoverStainer	Dako Omnis, Dako Autostainer Link 48, Dako Artisan Link Pro
Provide list of client sites to potential customers on request	no (information is confidential)	no (information is confidential)	no (information is confidential)
Total No. of units installed in U.S./Outside U.S. (as of July 2014)	3,070 (worldwide)	1,162 (worldwide)	30/100 (in Europe and Asia)
Automatic programmable start/Shutdown	yes/no	yes/yes	no/no
Minimum–maximum slide capacity of instrument	1–48	1–48	1–240 per hour
Instrument platform	modular	modular	individual
Staining host computer can be interfaced to an LIS	yes (to major vendors' LISs)	yes (to major vendors' LISs)	yes (to more than 30 systems, including Cerner and Sunquest)
• Type of computer interface to LIS	bidirectional	bidirectional	bidirectional
Stainer can interface to a specimen-tracking system	yes	yes	yes
Model type	benchtop	benchtop	floor standing
• Dimensions (H × W × D)	27 × 35 × 26 in.	20.5 × 32 × 26 in.	50 × 65 × 26 in.
• Weight	147 lbs.	150 lbs.	385 lbs. (dry)/506 lbs. (loaded)
Reagent type	open reagent system	closed/proprietary system	combination of open and closed system
Instrument reagent application	reagents applied to patient slides individually	reagents applied to patient slides individually	patient slides submerged in shared reagents
Uses for bulk reagents	deparaffinization, rinsing, antigen retrieval	deparaffinization, rinsing	—
No. of tests or slides one reagent/kit can handle	600	50 or 100 test kits	3,000
Staining configuration	user programmable	set by manufacturer	user programmable
How slides on runs are handled	batch load (12 slides per rack/4 racks per run)	batch load (48 slides per rack/1 rack per run)	batch load (10 slides per rack/up to 24 racks per run) or continuous load
Options for reading slides placed on instrument	one-dimensional and two-dimensional open barcode	barcode with proprietary format	two-dimensional open barcode
Method of heating or drying slides	offline drying system	online drying system	online drying system
Solution for rinsing slides	buffer	Artisan wash solution	water (inlet or onboard system)
Online coverslipping integrated into system	no	no	yes (glass)
Fume control	—	onboard filters, vented	vented
User interface	keyboard	touchscreen or keyboard	touchscreen
Onboard quality control	yes	yes	yes
• Onboard quality control for individual reagents	yes	no	no
• Types of quality control	reagent management	temperature, dilution	—
• Onboard quality control for staining program	yes	yes	yes
Management of waste	automated collection onboard instrument	automated collection onboard instrument	automated collection onboard instrument
Required user maintenance	every 150–200 slides	weekly, monthly	daily, biweekly
Required maintenance by vendor's service personnel	annually	annually	annually
• Maintenance records kept onboard	yes	yes	no
User training and installation			
• User training included with purchase	yes	yes	yes
• Total time for standard installation and basic training	32 hours	3 days	3–7 days
• Training site	on site, off site	on site, off site	on site, off site
• Approximate length of training per typical user	8 hours	6 hours	2 work days (16 hours)
• Follow-up training available	yes, for new users, staff turnover, or if customer purchases additional training slots	yes, for new lab personnel, staff turnover, or if customer purchases an additional training program	yes, on-site training at no charge; full-scale training at Dako Academy incurs additional cost once initial training slots have been used
• Extra charge for follow-up training	no	no	no
Warranty	yes	yes	yes
• Length of warranty before purchasing service contract	1 year	1 year	1 year
Service contract	warranty provided by manufacturer only; users can purchase parts	warranty provided by manufacturer only; users can purchase parts	warranty provided by manufacturer only; users can purchase parts
• Cost of annual service contract (as of July 2014)	—	—	—
Instrument list price (as of July 2014)	\$109,725	\$95,000	\$120,000
Primary user safety features	separation of hazardous waste	run stops when door is opened	less than 38 db when running; ventilated—no fumes; option to use xylene-free and toluene-free solutions
Primary Lean workflow features	instrument can accommodate up to 48 slides with 42 reagent positions; reduced turnaround time with multiple runs with the parallel processing design due to offline pretreatment	individual slide heating enables staining of multiple protocols alongside one another with 48 slide positions and 50 reagent positions	fully automated process; does the job of three instruments—oven, stainer, coverslipper—without having to transfer between them
Primary productivity processing features	runs 48 slides in less than 3 hours or a patient-case workflow by staining 24 slides in as little as 2 hours	algorithms for run scheduler	up to 240 slides per hour with Dako standard protocol
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> • parallel processing achieves high productivity by pretreating and staining slides simultaneously • separation of hazardous waste • open system—adjust any protocol; use lab-developed protocols; introduce and validate new reagents; apply any visualization 	<ul style="list-style-type: none"> • environmentally safe deparaffinization solution • large special stain menu, with 31 stains • waste is separated into 4 categories: nonhazardous, hazardous, alcohol, metal 	<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; 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 2/6	Agilent Technologies, Dako Doug Felten doug.felten@dako.com 6392 Via Real Carpinteria, CA 93013 800-235-5743 www.dako.com	Biocare Medical Rhonda Henshall-Powell rhenshallpowell@biocare.net 4040 Pike Lane Concord, CA 94520 800-799-9499 www.biocare.net	Biocare Medical Rhonda Henshall-Powell rhenshallpowell@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	medical care, research use	medical care, research use	medical care, research use
Type of staining conducted on instrument featured in this guide	immunohistochemical/in situ	immunohistochemical/in situ	immunohistochemical/in situ
Recommended applications	histology, ISH	histology, cytology	histology
First-ever automated staining instrument install (any system)	1997	2004	2004
Company produces and sells its own automated staining instruments/Resells others	yes/no	yes/yes	yes/yes
• For whom company is a reseller	—	TBS, a division of General Data	TBS, a division of General Data
Company sells its products through distribution partners	yes (outside the U.S.)	yes	yes
• Vendors with which company partners	—	international distributors	international distributors
Names of other automated staining instruments sold by company	Dako Autostainer Link 48, Dako Artisan Link Pro, Dako CoverStainer	ONCORE, PUREstain H&E Slide Stainer	intelliPATH, PUREstain H&E Slide Stainer
Provide list of client sites to potential customers on request	no (information is confidential)	yes (partial list)	yes (partial list)
Total No. of units installed in U.S./Outside U.S. (as of July 2014)	—	—	—
Automatic programmable start/Shutdown	yes/—	yes/yes	yes/yes
Minimum–maximum slide capacity of instrument	1–60	1–50	1–36
Instrument platform	modular	modular	individual
Staining host computer can be interfaced to an LIS	yes (to major vendors' LISs)	yes (to LISs compatible with XML and L-7 messaging standards)	yes (to LISs compatible with XML and L-7 messaging standards)
• Type of computer interface to LIS	bidirectional	unidirectional, bidirectional	—
Stainer can interface to a specimen-tracking system	yes	yes	no
Model type	floor standing	benchtop	benchtop
• Dimensions (H x W x D)	60.4 x 57.1 x 31.2 in.	24 x 40 x 25 in.	22 x 35 x 24 in.
• Weight	1,168 lbs. (dry)/1,312 lbs. (loaded)	145 lbs.	110 lbs.
Reagent type	combination of open and closed system	open reagent 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	deparaffinization, rinsing, target retrieval	rinsing	deparaffinization, rinsing, antigen retrieval
No. of tests or slides one reagent/kit can handle	600	100	varies: 70, 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	batch load (5 slides per rack/6 racks per run) or continuous load	batch load (up to 10 slides per rack/5 racks per run) or continuous load	batch load (1 slide per rack/36 racks per run) [†]
Options for reading slides placed on instrument	two-dimensional open barcode	two-dimensional open barcode	two-dimensional open barcode
Method of heating or drying slides	offline drying system	offline drying system	online drying system
Solution for rinsing slides	water (onboard system), buffer	water (onboard system), buffer	buffer
Online coverslipping integrated into system	no	no	no
Fume control	onboard filters	—	not needed/required
User interface	combination of touchscreen and keyboard	keyboard	keyboard
Onboard quality control	yes	yes	yes
• Onboard quality control for individual reagents	yes	yes	yes
• Types of quality control	temperature	temperature	temperature, RFID
• Onboard quality control for staining program	yes	yes	yes
Management of waste	manually by user, automated collection onboard instrument, direct to drain (combination of methods)	automated (separated hazardous/nonhazardous waste)	automated (separated hazardous/nonhazardous waste)
Required user maintenance	daily, biweekly, monthly	daily, weekly, monthly	daily, weekly, monthly, quarterly, semi-annually
Required maintenance by vendor's service personnel	annually	semi-annually (depending on usage), annually	semi-annually
• Maintenance records kept onboard	yes	no	no
User training and installation			
• User training included with purchase	yes	yes	yes
• Total time for standard installation and basic training	52 hours	10 business days	10 business days
• Training site	on site, off site	on site, off site	on site, off site
• Approximate length of training per typical user	—	80 hours	80 hours
• Follow-up training available	yes, for staff turnover or if customer purchases an additional training program	yes, on request	yes, on request
• Extra charge for follow-up training	no	yes	yes
Warranty	yes	yes	yes
• Length of warranty before purchasing service contract	1 year	1 year	1 year
Service contract	warranty provided by manufacturer only; users can purchase parts	warranty provided by manufacturer only	warranty provided by manufacturer only
• Cost of annual service contract (as of July 2014)	—	—	—
Instrument list price (as of July 2014)	\$210,000	—	—
Primary user safety features	weight-controlled volume sensing for bulk reagents; separation of hazardous waste; more	door locks and bulk carboy sensors	door lock
Primary Lean workflow features	supports continuous, overnight, or batch flow of slides, (they can be added any time and processed unattended); buffer, water, waste capacity for 24 hours; more	true continuous random-access slide processing; prioritized stat samples can be added at any time without disrupting runs; simultaneous multiplex IHC capability; more	slide baking, deparaffinization, antigen retrieval (up to 103°C), and antibody or probe detection for IHC, ISH, and multiplex IHC applications; minimal hazardous/nonhazardous waste generation; more
Primary productivity processing features	reagent capacity of 60 vials onboard at once; no waiting time to load new reagents and slides to full capacity; option to start staining process with incomplete reagent menu onboard; onboard mixing of reagents just-in-time; possible to unload dry and wet slides	true continuous random-access slide processing; prioritized stat samples can be added at any time without disrupting runs; simultaneous multiplex IHC capability; more	slide baking, deparaffinization, antigen retrieval (up to 103°C), and antibody or probe detection for IHC, ISH, and multiplex IHC applications; minimal hazardous/nonhazardous waste generation; more
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> • allows for the 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 and ability to prioritize stat samples • award-winning customer service and 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 and technical support
Note: a dash in lieu of an answer means company did not answer question or question is not applicable			[†] 36 individual slide chambers that are independent of each other

Part 3/6	Biocare Medical Rhonda Henshall-Powell rhenshallpowell@biocare.net 4040 Pike Lane Concord, CA 94520 800-799-9499 www.biocare.net	BioGenex Anthony Tong a.tong@biogenex.com 49026 Milmont Drive Fremont, CA 94538 510-824-1450 www.biogenex.com	General Data Co. Adrienne Campbell acampbell@general-data.com 4354 Ferguson Drive Cincinnati, OH 45245 800-733-5252 www.general-data.com
See captodayonline.com/productguides for an interactive version of guide			
Name of automated staining instrument	PUREstain H&E Slide Stainer	Xmatrx ELITE	SS-3030 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	hematoxylin and eosin, histochemical/special stains	immunohistochemical/in situ, histochemical/special stains	hematoxylin and eosin
Recommended applications	histology, cytology, special staining	histology, cytology, special staining	histology, cytology, special staining, histochemical stains
First-ever automated staining instrument install (any system)	2004	1994	1997
Company produces and sells its own automated staining instruments/Resells others	yes/yes	yes/no	yes/no
• For whom company is a reseller	TBS, a division of General Data	—	—
Company sells its products through distribution partners	yes	yes	yes
• Vendors with which company partners	international distributors	70+ international distributors	Biocare, Cardinal Health, VWR, Fisher
Names of other automated staining instruments sold by company	intelliPATH, ONCORE	Xmatrx ULTRA, Xmatrx Infinity, Xmatrx NANO, Xmatrx MINI, i6000 Diagnostics, i6000 Infinity	SHURStain 2030
Provide list of client sites to potential customers on request	yes (partial list)	no (information is confidential)	yes (partial list)
Total No. of units installed in U.S./Outside U.S. (as of July 2014)	—	—	48/31 (Canada, Turkey, Asia, Australia, UK, Brazil)
Automatic programmable start/Shutdown	no/no	no/yes	yes/yes
Minimum–maximum slide capacity of instrument	1–30	1–40	1–120
Instrument platform	individual	individual	individual
Staining host computer can be interfaced to an LIS	no	no	no
• Type of computer interface to LIS	—	—	—
Stainer can interface to a specimen-tracking system	no	yes	no
Model type	benchtop	floor standing	benchtop
• Dimensions (H x W x D)	31 x 36 x 30 in.	59 x 46 x 29 in.	31 x 36 x 30 in.
• Weight	125 lbs.	400 lbs.	125 lbs.
Reagent type	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	rinsing	deparaffinization, rinsing, staining	deparaffinization, rinsing, dehydration
No. of tests or slides one reagent/kit can handle	variable	200	variable
Staining configuration	user programmable	set by manufacturer or user programmable (user's choice)	user programmable
How slides on runs are handled	batch load (30 slides per rack/1 rack per run)	batch load (10 slides per rack/4 racks per run) or continuous load	continuous load
Options for reading slides placed on instrument	—	one-dimensional open barcode	—
Method of heating or drying slides	online drying system	online drying system	online drying system
Solution for rinsing slides	water (inlet or onboard system), buffer	water (onboard system), buffer	water (inlet); distilled water hook up
Online coverslipping integrated into system	no	yes (glass)	no
Fume control	onboard filters	vented	onboard filters
User interface	touchscreen	keyboard	touchscreen
Onboard quality control	yes	yes	no
• Onboard quality control for individual reagents	yes	no	no
• Types of quality control	temperature	temperature	temperature
• Onboard quality control for staining program	—	no	yes
Management of waste	manually by user	automated collection onboard instrument	manually by user
Required user maintenance	weekly, monthly, quarterly	daily, monthly, annually	daily, weekly, monthly, annually, as needed depending on workload and water quality in lab
Required maintenance by vendor's service personnel	annually	annually	annually
• Maintenance records kept onboard	—	yes	no
User training and installation	—	yes	yes
• User training included with purchase	—	5 days	3 hours
• Total time for standard installation and basic training	—	on site, off site	on site
• Training site	—	2 hours	1 hour
• Approximate length of training per typical user	—	yes, for additional applications	yes, for new users, issues, or misunderstanding
• Follow-up training available	—	yes	yes
• Extra charge for follow-up training	—	—	—
Warranty	yes	yes	yes
• Length of warranty before purchasing service contract	1 year	1 year	1 year
Service contract	warranty provided by manufacturer only; users can purchase parts	warranty provided by manufacturer only	warranty provided by manufacturer or available through secondary source; users can be trained on site as service personnel; users can purchase parts
• Cost of annual service contract (as of July 2014)	—	—	\$1,712 one year extended after factory warranty; discounts apply when bundling subsequent years
Instrument list price (as of July 2014)	—	—	\$31,796.10
Primary user safety features	slide loading station	—	internal filtration system
Primary Lean workflow features	—	33 manual steps reduced to 3 (load, click, and view); reduces hands-on time from 7.5 hours to 30 minutes for FISH applications	continuous-feed, load-sensing drawers that recall previously selected protocols; 2 built-in drying wells and 2 unloading stations
Primary productivity processing features	batch processing; multiple runs at once	multiple slide-processing options—random, continuous, and stat; high throughput at 100 slides per day (60 slides in 8-hour shift and 40 slides in delayed overnight run)	compact footprint; user-friendly touchscreen; continuous-feed, load-sensing drawers that recall previously selected protocols; 2 built-in drying wells and 2 unloading stations; optional special stain baskets and wells; more
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> compact footprint user-friendly touchscreen easy protocol management and reporting 	<ul style="list-style-type: none"> performs final coverslipping reagent dispense volume can be as low as 10 µL individual temperature control on every slide position 	<ul style="list-style-type: none"> smaller platform (36 in. compact size) separate or independent rinse stations, including 1 distilled water and 4 tap water stations continuous-feed, load-sensing drawers recall previously selected protocols for quick automation

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

AUTOMATED STAINING INSTRUMENTS

Part 4/6	Leica Biosystems Allison Schenck allison.schenck@leicabiosystems.com 1700 Leider Lane Buffalo Grove, IL 60089 815-451-7565 www.leicabiosystems.com	Leica Biosystems Allison Schenck allison.schenck@leicabiosystems.com 1700 Leider Lane Buffalo Grove, IL 60089 815-451-7565 www.leicabiosystems.com	Leica Biosystems Allison Schenck allison.schenck@leicabiosystems.com 1700 Leider Lane Buffalo Grove, IL 60089 815-451-7565 www.leicabiosystems.com
See captodayonline.com/productguides for an interactive version of guide			
Name of automated staining instrument	ST4020	ST5010 Autostainer XL	ST5020 MultiStainer
Intent of automated staining instrument	medical care	medical care, research use	medical care, research use
Type of staining conducted on instrument featured in this guide	hematoxylin and eosin	hematoxylin and eosin, histochemical/special stains	hematoxylin and eosin, histochemical/special stains
Recommended applications	histology, cytology, frozen sections	histology, cytology, special staining	histology, cytology, special staining
First-ever automated staining instrument install (any system)	1992	1992	1992
Company produces and sells its own automated staining instruments/Resells others	yes/no	yes/no	yes/no
• For whom company is a reseller	—	—	—
Company sells its products through distribution partners	yes	yes	yes
• Vendors with which company partners	North Central Instruments	North Central Instruments	North Central Instruments
Names of other automated staining instruments sold by company	ST5020 MultiStainer, ST5010 AutoStainer XL, Bond-Max, Bond-III	ST5020 MultiStainer, ST4020 Linear Stainer, Bond-Max, Bond-III	ST5010 AutoStainer XL, ST4020 Linear Stainer, Bond-Max, Bond-III
Provide list of client sites to potential customers on request	no (information is confidential)	no (information is confidential)	no (information is confidential)
Total No. of units installed in U.S./Outside U.S. (as of July 2014)	—	—	—
Automatic programmable start/Shutdown	no/no	no/no	yes/yes
Minimum–maximum slide capacity of instrument	1–60	1–400	1–250
Instrument platform	individual	individual	individual
Staining host computer can be interfaced to an LIS	no	no	yes (to multiple LISs)
• Type of computer interface to LIS	—	—	bidirectional
Stainer can interface to a specimen-tracking system	no	yes	yes
Model type	benchtop	benchtop	benchtop
• Dimensions (H × W × D)	10 × 24 × 8 in.	20 × 43 × 26 in.	42 × 28 × 22 in.
• Weight	77 lbs.	143 lbs.	209 lbs.
Reagent type	open reagent system	open reagent system	open reagent system
Instrument reagent application	patient slides submerged in shared reagents	patient slides submerged in shared reagents	patient slides submerged in shared reagents
Uses for bulk reagents	deparaffinization, rinsing	deparaffinization, rinsing	deparaffinization, rinsing
No. of tests or slides one reagent/kit can handle	—	2,500 H&E slides	2,500 H&E slides; variable for special stain kits
Staining configuration	set by manufacturer or user programmable (user's choice)	user programmable	user programmable
How slides on runs are handled	continuous load	continuous load	continuous load
Options for reading slides placed on instrument	—	—	—
Method of heating or drying slides	offline drying system	online drying system	online drying system
Solution for rinsing slides	water (inlet)	water (inlet)	water (inlet), buffer
Online coverslipping integrated into system	no	yes (glass)	yes (glass)
Fume control	—	onboard filters	onboard filters
User interface	keyboard	keyboard	touchscreen
Onboard quality control	no	no	no
• Onboard quality control for individual reagents	no	—	—
• Types of quality control	—	—	—
• Onboard quality control for staining program	—	—	—
Management of waste	manually by user, automated collection onboard instrument, direct to drain (combination of methods)	manually by user	manually by user, automated collection onboard instrument, direct to drain (combination of methods)
Required user maintenance	weekly	weekly	weekly
Required maintenance by vendor's service personnel	annually	annually	annually
• Maintenance records kept onboard	no	no	yes
User training and installation			
• User training included with purchase	yes	yes	yes
• Total time for standard installation and basic training	3 hours	3 hours	3 hours
• Training site	on site	on site	on site
• Approximate length of training per typical user	1 hour	3 hours	3 hours
• Follow-up training available	yes, on customer request	yes, on customer request	yes, on customer request
• Extra charge for follow-up training	no	no	no
Warranty	yes	yes	yes
• Length of warranty before purchasing service contract	1 year	1 year	1 year
Service contract	warranty provided by manufacturer only	warranty provided by manufacturer only	warranty provided by manufacturer only
• Cost of annual service contract (as of July 2014)	—	—	—
Instrument list price (as of July 2014)	—	—	—
Primary user safety features	—	—	—
Primary Lean workflow features	—	—	—
Primary productivity processing features	—	—	—
Distinguishing features (supplied by company)	<ul style="list-style-type: none"> • small (50-mL) container for reagent savings • 3 optional running water stations allow for crisp clear staining • continuous loading to accelerate turnaround time 	<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

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

Part 5/6	Roche Diagnostics David Smith david.smith.ds5@roche.com 9115 Hague Rd. Indianapolis, IN 46250 800-227-2155 www.ventana.com	Roche Diagnostics Tonya Sullivan tonya.sullivan@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 BenchMark Special Stains System	Ventana SYMPHONY System	BenchMark ULTRA
Intent of automated staining instrument	medical care, research use	medical care, research use	medical care
Type of staining conducted on instrument featured in this guide	histochemical/special stains	hematoxylin and eosin	immunohistochemical/in situ
Recommended applications	special staining	histology	histology, cytology
First-ever automated staining instrument install (any system)	1991	1991	1991
Company produces and sells its own automated staining instruments/Resells others	yes/no	yes/no	yes/no
• For whom company is a reseller	—	—	—
Company sells its products through distribution partners	no	no	no
• Vendors with which company partners	—	—	—
Names of other automated staining instruments sold by company	BenchMark ULTRA, BenchMark XT, BenchMark GX, SYMPHONY, Discovery XT, Discovery ULTRA	BenchMark ULTRA, BenchMark XT, BenchMark Special Stains, Discovery ULTRA, Discovery XT, BenchMark GX	BenchMark XT, BenchMark GX, Discovery ULTRA, Discovery XT, BenchMark Special Stains, SYMPHONY
Provide list of client sites to potential customers on request	yes (partial list)	yes (partial list)	yes (partial list)
Total No. of units installed in U.S./Outside U.S. (as of July 2014)	—	several hundred (throughout North and South America, Asia, Europe)	thousands (worldwide)
Automatic programmable start/Shutdown	yes/yes	yes/yes	yes/yes
Minimum–maximum slide capacity of instrument	1–20	1–500	1–30
Instrument platform	modular	individual	modular
Staining host computer can be interfaced to an LIS	yes (LIS-agnostic interface)	yes (to multiple LISs via Ventana Vantage system)	yes (LIS-agnostic interface)
• Type of computer interface to LIS	bidirectional	bidirectional	bidirectional
Stainer can interface to a specimen-tracking system	yes	yes	yes
Model type	benchtop or floor standing	floor standing	floor standing
• Dimensions (H × W × D)	53 × 20 × 25 in.	74 × 49 × 31 in.	62 × 44 × 33 in.
• Weight	165 lbs.	683 lbs.	650 lbs.
Reagent type	closed/proprietary system	closed/proprietary 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	deparaffinization, rinsing	deparaffinization, rinsing	deparaffinization, rinsing
No. of tests or slides one reagent/kit can handle	75	variable (depends on reagents and protocol)	250
Staining configuration	user programmable	user programmable	user programmable
How slides on runs are handled	batch load (20 slides per rack/1 rack per run)	continuous load	continuous load
Options for reading slides placed on instrument	barcode with proprietary format	one- and two-dimensional open barcode, barcode with proprietary format, others	one-dimensional open barcode
Method of heating or drying slides	online drying system	online drying system	online drying system
Solution for rinsing slides	buffer	water (inlet)	buffer
Online coverslipping integrated into system	no	yes (glass)	no
Fume control	onboard filters	vented	—
User interface	keyboard	touchscreen or keyboard	keyboard
Onboard quality control	yes	yes	yes
• Onboard quality control for individual reagents	yes	yes	yes
• Types of quality control	temperature	temperature, reagent lot information, reagent expiration date, reagent position, others	temperature
• Onboard quality control for staining program	yes	yes	yes
Management of waste	automated collection onboard instrument	direct to drain	automated collection onboard instrument
Required user maintenance	daily, weekly, quarterly	maintenance-free system	daily, weekly, monthly, quarterly
Required maintenance by vendor's service personnel	annually	6 months	annually
• Maintenance records kept onboard	yes	yes	yes
User training and installation			
• User training included with purchase	yes	yes	yes
• Total time for standard installation and basic training	2 days	installation is one day on site; training is one week at company headquarters	2 days
• Training site	on site	one week at company headquarters	on site
• Approximate length of training per typical user	4 hours	4 hours	4 hours
• Follow-up training available	yes, on customer request	yes, on customer request	yes, on customer request
• Extra charge for follow-up training	no	yes	no
Warranty	yes	yes	yes
• Length of warranty before purchasing service contract	1 year	1 year	1 year
Service contract	warranty provided by manufacturer only	warranty provided by manufacturer only	warranty provided by manufacturer only
• Cost of annual service contract (as of July 2014)	—	—	—
Instrument list price (as of July 2014)	—	—	—
Primary user safety features	ready-to-use reagents; ergonomic design	ready-to-use reagents; no xylene required; ergonomic loading; direct-to-drain waste; no risk of exposure to oven heat or mechanical movements of instrument	ready-to-use reagents; alarms and remote monitoring; automated waste collection; instrument pauses operation when hood is opened; more
Primary Lean workflow features	ready-to-use reagents; full integration of staining processes; can integrate with Vantage workflow solution	customized, one-touch H&E protocols; can run multiple protocols simultaneously; integrated platform (drying, staining, coverslipping, direct-to-drain waste, no mixing/preparing of reagents)	single-piece flow processing; continuous access to slides, reagents, bulks, and waste; ready-to-use reagents; full automation of staining processes; can integrate with Vantage workflow solution
Primary productivity processing features	fully automated staining processes; eliminates batch processing with individual slide heating and full random-access processing capability	customized, one-touch H&E protocols; can run multiple protocols simultaneously; integrated platform (drying, staining, coverslipping, direct-to-drain waste, no mixing/preparing of reagents)	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
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"> individual slide staining virtually eliminates cross-contamination dryer, stainer, and glass coverslipper integrated within instrument no xylene used; reduced risk of misdiagnosis due to individual slide staining 	<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

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

AUTOMATED STAINING INSTRUMENTS

Part 6/6	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-america.com	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	BenchMark XT	Tissue-Tek Prisma	Thermo Scientific Gemini AS Slide Stainer
Intent of automated staining instrument	medical care	medical care, research use	medical care, research use
Type of staining conducted on instrument featured in this guide	immunohistochemical/in situ	hematoxylin and eosin, histochemical/special stains	hematoxylin and eosin, histochemical/special stains
Recommended applications	histology, cytology	histology, cytology, special staining	histology, cytology, special staining
First-ever automated staining instrument install (any system)	1991	1986	approximately 1980
Company produces and sells its own automated staining instruments/Resells others	yes/no	yes/no	yes/no
• For whom company is a reseller	—	—	—
Company sells its products through distribution partners	no	yes	yes
• Vendors with which company partners	—	Cardinal Health, VWR International, Government Scientific Source	Fisher Scientific, VWR, Cardinal Health
Names of other automated staining instruments sold by company	BenchMark ULTRA, Discovery ULTRA, Discovery XT, BenchMark GX, BenchMark Special Stains, SYMPHONY	Histo-Tek SL	Varistain 24-4, Linistat
Provide list of client sites to potential customers on request	yes (partial list)	yes (partial list, with consent of installed client sites)	no (information is confidential)
Total No. of units installed in U.S./Outside U.S. (as of July 2014)	thousands (worldwide)	—	—
Automatic programmable start/Shutdown	yes/yes	no/no	no/no
Minimum–maximum slide capacity of instrument	1–30	1–660	1–240
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	—	—
Stainer can interface to a specimen-tracking system	yes	yes	no
Model type	floor standing	benchtop	benchtop
• Dimensions (H × W × D)	60 × 35 × 26 in.	24.8 × 49.2 × 28 in.	35 × 28 × 31 in.
• Weight	385 lbs.	330 lbs.	192 lbs.
Reagent type	combination of open and closed 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/kit can handle	250	—	variable (depends on reagents used)
Staining configuration	user programmable	user programmable	set by manufacturer or user programmable (user's choice)
How slides on runs are handled	batch load (30 slides per rack/1 rack per run)	batch load (20 slides per rack/3 racks per run) or continuous load	continuous load
Options for reading slides placed on instrument	one-dimensional open barcode	optional barcode reader	none
Method of heating or drying slides	online drying system	online drying system	online drying system
Solution for rinsing slides	buffer	water (inlet)	water (inlet); can connect to DI or regular tap water supply
Online coverslipping integrated into system	no	yes (glass, tape)	no
Fume control	—	onboard filters, vented	onboard filters, vented
User interface	keyboard	touchscreen	touchscreen
Onboard quality control	yes	no	yes
• Onboard quality control for individual reagents	yes	—	yes
• Types of quality control	temperature	—	number of racks stained
• Onboard quality control for staining program	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, monthly, quarterly	monthly, bimonthly	daily, monthly
Required maintenance by vendor's service personnel	annually	recommend annual preventive maintenance	annually
• Maintenance records kept onboard	yes	no	yes
User training and installation			
• User training included with purchase	yes	yes	yes
• Total time for standard installation and basic training	2 days	1 day	2 days
• Training site	on site	on site	on site
• Approximate length of training per typical user	4 hours	3–4 hours	4 hours
• Follow-up training available	yes, on customer request	yes, as needed	yes, by negotiation as required
• Extra charge for follow-up training	no	no	yes
Warranty	yes	yes	yes
• Length of warranty before purchasing service contract	1 year	1 year	1 year
Service contract	warranty provided by manufacturer only	warranty provided by manufacturer only	warranty provided by manufacturer only; users can be trained on site as service personnel
• Cost of annual service contract (as of July 2014)	—	—	\$5,435
Instrument list price (as of July 2014)	—	—	\$32,300
Primary user safety features	ready-to-use reagents; automated waste collection; alarm functions; ergonomic design	for laboratories using xylene: built-in charcoal filtering system and optional external venting system to minimize exposure to xylene fumes	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 Lean workflow features	batch processing of any IHC or ISH slides in any position; ready-to-use reagents; full automation of staining processes; can integrate with Vantage workflow solution	when configured as a stainer-coverslipper system, user continuously loads baskets of unstained slides and unloads baskets of stained and coverslipped slides from an output station hosting up to 12 baskets	built-in LED lighting for accuracy and ease of reagent replacement; intuitive touchscreen interface; slides can be loaded in small batches to achieve single-piece flow; can manage 12 slide racks simultaneously; more
Primary productivity processing features	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	continuous loading of up to 300 slides simultaneously	5 independent heated ovens for high throughput; load doors are programmable so each can be allocated to a specific protocol; 26 reagent stations
Distinguishing features (supplied by company)	<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 	<ul style="list-style-type: none"> • configurable with a film coverslipper or glass coverslipper • high throughput of 500 slides/hour • barcode-based slide tracking in both configurations: Tissue-Tek Prisma & Film and Tissue-Tek Prisma & Glas g2 	<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, for optimal workflow, next to sectioning • 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