AUTOMATED TISSUE PROCESSORS

Part 1/3 **See captodayonline.com/productguides for an interactive version of guide**	**General Data** **Jackie Malblanc** jmalblanc@general-data.com **4043 McMann Rd.** **Cincinnati, OH 45245** **513-752-7978** www.general-data.com/hc	**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
Name of automated tissue processor	RTP	ASP6025	PELORIS II
Intent of automated tissue processor Type of tissue processing performed	clinical use, research use conventional	clinical use, research use conventional, rapid	clinical use, research use conventional, rapid
First-ever installation of this tissue processor Total No. of units installed in U.S./Outside U.S. (as of June 2017)	2013 30/—	— —	— —
Company sells this product through distribution partners • Vendors with which company partners	yes —	yes North Central Instruments	yes North Central Instruments
Names of other automated tissue processors sold by company	—	ASP300, PELORIS II, TP1020	ASP300, ASP6025, TP1020
Provide list of client sites to potential customers on request	yes (partial list of comparable sites)	no (information is confidential)	no (information is confidential)
Model type • Dimensions (H × W × D) • Weight empty/Weight fully loaded	floor standing 28.5 × 46.25 × 29.5 in. 440 lbs./540 lbs.	floor standing 150 × 68 × 75 cm 463 lbs./—	floor standing 59 × 33.7 × 28.4 in. 730 lbs. (dry)/950 lbs. (with reagents)
Automatic programmable start/Automatic programmable shutdown	yes/yes	yes/yes	yes/—
Reagent configuration	open reagent system	open reagent system	open reagent system
Tissue processor can interface to an LIS • Type of interface to LIS Tissue processor can interface to a specimen-tracking system	no — no	yes unidirectional yes	yes unidirectional yes
User interface	touchscreen, keyboard with mouse	touchscreen	touchscreen
Mechanics of tissue processor Fume control	vacuum, heat, fluid mixing, pressure onboard filters, vented	vacuum, heat, fluid mixing, pressure, reagent exchange, reagent dilution onboard filters, vented	vacuum, heat, fluid mixing, pressure, reagent exchange, reagent dilution onboard filters, vented
Specimen retort: • Maximum block capacity per retort • No. of retorts per instrument	 360 1	 300 1	 300 2
Type of specimen cassettes recommended • Recommended cassette inserts • Prohibited cassette inserts • Minimum No. of cassettes per process run • Maximum No. of cassettes per process run • Cassette throughput per hour	standard, biopsy — none 1 360 360 in 2 hours	standard, biopsy sponges, wraps, tissue specimen bags — 1 600 dependent on protocol (up to 300)	standard, biopsy sponges, wraps, tissue specimen bags — 1 600 dependent on protocol (up to 600)
Fluids that can be kept on tissue processor	4 L formalin, 4 L alcohol, 4 L xylene, 4 L paraffin	5 L formalin, 5 L alcohol, 5 L xylene, 5 L paraffin	5 L formalin, 5 L alcohol, 5 L xylene, 5 L paraffin
Reagent mode	xylene, xylene-free	xylene, xylene-free	xylene, xylene-free
Specimen-processing time: • Minimum–maximum processing time for biopsy specimens Recommended minimum–maximum specimen thickness/size • Minimum–maximum processing time for resection specimens Recommended minimum–maximum specimen thickness/size • Minimum–maximum processing time for bone specimens Recommended minimum–maximum specimen thickness/size	 2.5 hours to 3 hours 1 mm to 2 mm 8 hours to 10 hours 3 mm to 5 mm 6 hours to 10 hours 3 mm to 4 mm	 dependent on customer validation 0.05 mm to 2 mm dependent on customer validation 2.5 mm to 5 mm dependent on customer validation 2 mm to 5 mm	 dependent on customer validation 1 mm to 5 mm dependent on customer validation 1 mm to 5 mm dependent on customer validation 1 mm to 5 mm
Types of quality control • Onboard quality control for processing program	temperature, downloadable run reports, fill-level sensing, pressure/vacuum —	temperature, downloadable run reports, fill-level sensing, pressure/vacuum, alcohol concentration measurement no	temperature, fill-level sensing, pressure/vacuum no
Management of waste	manually by user	manually by user or automated collection onboard instrument (autorotation can discard alcohol/xylene waste in waste bottle)	manually by user or automated collection onboard instrument
Required user maintenance • User maintenance records kept on instrument Required maintenance by vendor's service personnel • Vendor maintenance records kept on instrument	daily, weekly some records (records of reagent-management system for use of reagents and paraffin) annually no	daily, weekly yes annually yes	daily, weekly yes annually yes
User training and installation: • User training included with purchase • Total time for standard installation and basic training • Where training is held • Follow-up training available • Extra charge for follow-up training	 yes 3 days at vendor and customer sites yes (for new employees) yes (travel expenses for company's technical representative paid by customer)	 yes 48 hours at vendor and customer sites yes yes	 yes 48 hours at vendor and customer sites yes yes
Instrument list price (as of June 2017)	—	—	—
Warranty provided with tissue processor • Length of warranty coverage before purchasing service contract • Warranty provider Users can be trained onsite as service personnel Client or a third-party maintenance company can purchase inventory of replacement parts • Cost of annual service contract (as of June 2017)	yes 1 year manufacturer no yes $6,500	yes 1 year manufacturer no no —	yes 1 year manufacturer no no —
Primary instrument safety features	—	battery backup; safe mode; reagent substitution	event codes if power lost; battery backup available for purchase; instrument resumes runs when power restored
Primary productivity processing features	—	autorotation; paraffin top-off/exchange; xylene exchange; densitometer for accurate alcohol concentration reading; remote fill/drain; RTU bottles interchangeable	rapid tissue processing; reagent management; high capacity/throughput
Other distinguishing product features (supplied by company) *Note: a dash in lieu of an answer means company did not answer question or question is not applicable*	• reagent-management system that can be defined by user • user-friendly touchscreen	• reagent management and density meter to ensure proper concentrations • paraffin top-off/exchange • rapid tissue processing	• high-throughput processing to increase lab productivity • high system efficiency—reagent management • allows specimen segregation—no special grossing instructions

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Product guide editors: Raymond D. Aller, MD, Hal Weiner, and William DeSalvo, BS, HTL(ASCP)

AUTOMATED TISSUE PROCESSORS

Part 2/3 **See captodayonline.com/productguides for an interactive version of guide**	**Sakura Finetek USA** **Joshua Greenlee** jgreenlee@sakuraus.com **1750 W. 214th St.** **Torrance, CA 90501** **310-972-7870** www.sakura-americas.com	**Sakura Finetek USA** **Joshua Greenlee** jgreenlee@sakuraus.com **1750 W. 214th St.** **Torrance, CA 90501** **310-972-7870** www.sakura-americas.com	**Thermo Fisher Scientific** **Robert Jacox** robert.jacox@thermofisher.com **4481 Campus Drive** **Kalamazoo, MI 49008** **269-544-5651** www.thermofisherscientific.com
Name of automated tissue processor	Tissue-Tek VIP 6 AI Vacuum Infiltration Processor	Tissue-Tek Xpress x120 Rapid Tissue Processor	Thermo Scientific Excelsior AS Tissue Processor
Intent of automated tissue processor	clinical use, research use	clinical use, research use	clinical use, research use
Type of tissue processing performed	conventional	rapid, microwave	conventional
First-ever installation of this tissue processor	2016	2012	2013
Total No. of units installed in U.S./Outside U.S. (as of June 2017)	—	—	—
Company sells this product through distribution partners	yes	yes	yes
• Vendors with which company partners	Cardinal Health, VWR International, Henry Schein Medical, Government Scientific Source	Cardinal Health, VWR International, Henry Schein Medical, Government Scientific Source	Fisher Scientific, VWR International in the United States; others outside the United States
Names of other automated tissue processors sold by company	Tissue-Tek Xpress x50 Rapid Tissue Processor, Tissue-Tek Xpress x120 Rapid Tissue Processor	Tissue-Tek Xpress x50 Rapid Tissue Processor, Tissue-Tek VIP 6 AI Vacuum Infiltration Processor	Thermo Scientific STP 120
Provide list of client sites to potential customers on request	yes (partial list of comparable sites, with consent of reference client sites)	yes (partial list of comparable sites, with consent of reference client sites)	yes (partial list of comparable sites)
Model type	floor standing	floor standing	floor standing
• Dimensions (H × W × D)	52 × 24 × 27 in.	64 × 67 × 28 in.	28 × 54 × 23 in.
• Weight empty/Weight fully loaded	175 lbs./—	1,023 lbs./—	363 lbs./551 lbs.
Automatic programmable start/Automatic programmable shutdown	yes/yes	yes/yes	yes/yes
Reagent configuration	open reagent system	closed/proprietary reagent system	open reagent system
Tissue processor can interface to an LIS	no	no	yes
• Type of interface to LIS	no interface	no interface	unidirectional
Tissue processor can interface to a specimen-tracking system	no	no	—
User interface	touchscreen	touchscreen	touchscreen
Mechanics of tissue processor	vacuum, heat, fluid mixing, pressure, reagent exchange	vacuum, heat, fluid mixing, pressure, low-wattage safe microwave technology	heat, pressure, reagent exchange
Fume control	onboard filters, vented	onboard filters, vented	onboard filters (charcoal and potassium permanganate)
Specimen retort:			
• Maximum block capacity per retort	300	40	300
• No. of retorts per instrument	1	4	1
Type of specimen cassettes recommended	standard, biopsy, specialty (mega cassettes and Tissue-Tek Paraform Sectionable Cassette System)	standard, biopsy, specialty (Tissue-Tek Paraform Sectionable Cassette System)	standard, biopsy, specialty (capable of running teratology)
• Recommended cassette inserts	—	—	—
• Prohibited cassette inserts	—	metal lids, sponges	—
• Minimum No. of cassettes per process run	1	1	—
• Maximum No. of cassettes per process run	300	40	300
• Cassette throughput per hour	dependent on protocol	120 (on standard protocol)	—
Fluids that can be kept on tissue processor	formalin, alcohol, xylene, paraffin, reagent substitutes (volumes dependent on protocol)	6 L paraffin, 1.8 L Tissue-Tek Xpress pre-processing solution, 7.6 L Tissue-Tek Xpress processing reagent	5 L formalin (2 bottles), 5 L alcohol (6 bottles), 5 L xylene (3 bottles), 5.6 L × 3 paraffin
Reagent mode	xylene, xylene-free	xylene-free	xylene, xylene-free
Specimen-processing time:			
• Minimum–maximum processing time for biopsy specimens	dependent on protocol	60 min. to 120 min.	less than 2 hours to a user-defined maximum
Recommended minimum–maximum specimen thickness/size	no minimum/no maximum	no minimum to 2 mm	not specified
• Minimum–maximum processing time for resection specimens	dependent on protocol	60 min. to 120 min.	—
Recommended minimum–maximum specimen thickness/size	no minimum/no maximum	no minimum to 3 mm	—
• Minimum–maximum processing time for bone specimens	dependent on protocol	120 min.	less than 2 hours to a user-defined maximum
Recommended minimum–maximum specimen thickness/size	no minimum/no maximum	no minimum to 3 mm	not specified
Types of quality control	temperature, downloadable run reports, pressure/vacuum, fill-level sensing	temperature, downloadable run reports, pressure/vacuum, fill-level sensing	temperature, dilution, downloadable run reports, pressure/vacuum, alcohol concentration measurement, fill-level sensing
• Onboard quality control for processing program	yes	yes	yes
Management of waste	manually by user or automated collection onboard instrument (can drain reagents to external bottle or waste bottle on instrument via solution-manager program)	manually by user or automated collection onboard instrument (Tissue-Tek Xpress reagent bottles loaded on instrument are used for disposal of same reagent)	manually by user
Required user maintenance	daily, weekly, monthly	weekly, monthly	daily
• User maintenance records kept on instrument	some (maintenance schedules can be set on instrument)	no	yes
Required maintenance by vendor's service personnel	—	—	annually
• Vendor maintenance records kept on instrument	no	no	yes
User training and installation:			
• User training included with purchase	yes	yes	yes
• Total time for standard installation and basic training	1.5 days	4 days	1 day
• Where training is held	at vendor and customer sites (training during installation at customer site; super-user training at Sakura Finetek)	at vendor and customer sites (training during installation at customer site; super-user training at Sakura Finetek)	customer site
• Follow-up training available	yes (upon customer request)	yes (upon customer request)	yes (upon customer request)
• Extra charge for follow-up training	no	no	yes (but not under most circumstances)
Instrument list price (as of June 2017)	$69,988	$210,000	—
Warranty provided with tissue processor	yes	yes	yes
• Length of warranty coverage before purchasing service contract	1 year	1 year	1 year
• Warranty provider	manufacturer	manufacturer	manufacturer
Users can be trained onsite as service personnel	no	no	yes
Client or a third-party maintenance company can purchase inventory of replacement parts	yes	yes	yes
• Cost of annual service contract (as of June 2017)	—	—	—
Primary instrument safety features	sensors to prevent retort overheating; automatic bottle check prior to program start; fume control; optional UPS for protection during power outage; more	low-wattage microwave; Tissue-Tek iSupport for remote monitoring; no xylene or formalin onboard; optional UPS to bridge power outages; more	fans and filters to protect users from fumes; battery backup; waste paraffin removed by discarding a plastic tray; more
Primary productivity processing features	onboard mixing of reagents for improved defatting of fatty tissues; in-process automatic reagent exchange using bulk reagents; customizable protocols	rapid tissue processing of all tissue types in 60 or 120 min.; continuous load/unload of magazines with up to 40 cassettes; quick, error-free reagent exchange; more	alcohol quality measurement and automatic reagent rotation extend reagent life; single bottle reagent replacement; draws new reagents into processor directly from supplier's bottle; more
Other distinguishing product features (supplied by company)	• onboard mixing of xylene and alcohol from bulk reservoir for processing of fatty tissues • mean time between repair of more than 52 weeks • automatic rotation of paraffin into paraffin waste container saves time and prevents spills	• four independent retorts for fully automated, continuous, rapid tissue processing • standardized processing with formalin- and xylene-free reagents • all specimen types can be processed in same run	• alcohol quality measurement extends reagent life and provides significant cost savings • cassette baskets gently rotated inside circular chamber for effective agitation • waste paraffin can be removed by discarding a plastic tray—no paraffin spills and burns
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AUTOMATED TISSUE PROCESSORS

Part 3/3 **See captodayonline.com/productguides for an interactive version of guide**	**Thermo Fisher Scientific** **Robert Jacox** robert.jacox@thermofisher.com **4481 Campus Drive** **Kalamazoo, MI 49008** **269-544-5651** www.thermofisherscientific.com
Name of automated tissue processor	Thermo Scientific STP 120 Spin Tissue Processor
Intent of automated tissue processor Type of tissue processing performed	clinical use, research use conventional
First-ever installation of this tissue processor Total No. of units installed in U.S./Outside U.S. (as of June 2017)	— —
Company sells this product through distribution partners • Vendors with which company partners	yes Fisher Scientific, VWR International in the United States; others outside the United States
Names of other automated tissue processors sold by company	Thermo Scientific Excelsior AS Tissue Processor
Provide list of client sites to potential customers on request	yes (partial list of comparable sites)
Model type • Dimensions (H × W × D) • Weight empty/Weight fully loaded	floor standing 19.6 × 33.5 in. (circular unit) 154 lbs./—
Automatic programmable start/Automatic programmable shutdown	yes/yes
Reagent configuration	open reagent system
Tissue processor can interface to an LIS • Type of interface to LIS Tissue processor can interface to a specimen-tracking system	no — —
User interface	keypad
Mechanics of tissue processor Fume control	heat onboard filters
Specimen retort: • Maximum block capacity per retort • No. of retorts per instrument	 120 or 240 —
Type of specimen cassettes recommended • Recommended cassette inserts • Prohibited cassette inserts • Minimum No. of cassettes per process run • Maximum No. of cassettes per process run • Cassette throughput per hour	standard, biopsy — — — 240 —
Fluids that can be kept on tissue processor	formalin, alcohol, and xylene all user-defined up to 9 × 1.8 L; 1.8 L × 3 paraffin
Reagent mode	xylene, xylene-free
Specimen-processing time: • Minimum–maximum processing time for biopsy specimens Recommended minimum–maximum specimen thickness/size • Minimum–maximum processing time for resection specimens Recommended minimum–maximum specimen thickness/size • Minimum–maximum processing time for bone specimens Recommended minimum–maximum specimen thickness/size	 less than 2 hours to a user-defined maximum not specified — — less than 2 hours to a user-defined maximum not specified
Types of quality control • Onboard quality control for processing program	downloadable run reports, fill-level sensing yes
Management of waste	manually by user
Required user maintenance • User maintenance records kept on instrument Required maintenance by vendor's service personnel • Vendor maintenance records kept on instrument	daily yes annually yes
User training and installation: • User training included with purchase • Total time for standard installation and basic training • Where training is held • Follow-up training available • Extra charge for follow-up training	 yes 1 day at customer site yes (upon customer request) yes (but not under most circumstances)
Instrument list price (as of June 2017)	—
Warranty provided with tissue processor • Length of warranty coverage before purchasing service contract • Warranty provider Users can be trained onsite as service personnel Client or a third-party maintenance company can purchase inventory of replacement parts • Cost of annual service contract (as of June 2017)	yes 1 year manufacturer yes yes —
Primary instrument safety features	reagent vessel tops and charcoal-enhanced ventilation help control processing vapors; battery backup system in case of power failure; more
Primary productivity processing features	immediate and delayed start processing modes; programmable spinning speed of 60 or 70 rpm; spinning can be programmed off; programmable immersion time in each station; basket capacity of 120 or 240 cassettes
Other distinguishing product features (supplied by company)	• basket capacity of 120 or 240 cassettes • programmable spinning speed of 60 or 70 rpm; spinning can also be programmed off • battery backup system in case of power failure

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TISSUE-EMBEDDING INSTRUMENTS

Part 1/2

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Name of tissue-embedding instrument	TEC II	Arcadia	Tissue-Tek AutoTEC a120 Automated Embedding System
Intent of tissue-embedding instrument	clinical use, research use	clinical use, research use	clinical use, research use
First-ever installation of this tissue-embedding instrument	2010	2015	2015
Total No. of units installed in U.S./Outside U.S. (as of June 2017)	25/—	—	—
Company sells this product through distribution partners	yes	no	yes
• Vendors with which company partners	—	—	Cardinal Health, VWR International, Government Scientific Source
Names of other tissue-embedding instruments sold by company	—	EG1150	Tissue-Tek TEC 5 Tissue Embedding Console System
Provide list of client sites to potential customers on request	yes (partial list of comparable sites)	yes (complete list but prospective client must sign a nondisclosure agreement)	yes (partial list of comparable sites, with consent of reference client sites)
Tissue-embedding method	semi-automated	manual	fully automated
Automatic programmable start/Automatic programmable shutdown	yes/yes	yes/yes	yes/yes
Tissue-embedding instrument can interface to an LIS	no	no	yes
• Type of computer interface to LIS	—	no interface	unidirectional
Tissue-embedding instrument can interface to a specimen-tracking system	no	no	yes
Tissue-embedding station can automatically capture block identifier as block is presented to instrument	no	no	yes (via barcode)
Options for reading cassettes before they are placed on instrument	—	—	one- or two-dimensional open barcode
User interface	keypad	touchscreen	touchscreen
Dimensions of complete tissue-embedding instrument (H × W × D)	—	—	70 × 47 × 30 in.
• If modular, dimensions of dispensing console (H × W × D)	405 × 345 × 641 mm	600 × 560 × 385 mm	—
• If modular, dimensions of cold plate (H × W × D)	395 × 335 × 623 mm	155 × 80 × 100 mm	—
Weight of complete tissue-embedding instrument when empty	45 kg	—	1,168 lbs.
• If modular, weight of dispensing console when empty	20.5 kg	—	—
Paraffin chamber	yes	yes	yes
• Capacity of paraffin chamber	5 L	4 L	5 L
• Temperature range of paraffin chamber	40–70°C	50–75°C	65°C
• Types of paraffin that can be used in chamber	all paraffin types	all paraffin types	Tissue-Tek Paraform Processing/Embedding Medium, Formula 3 (#7052)
Paraffin-dispensing mechanism	semi-automated	semi-automated	fully automated
Thermal tissue-storage chambers:			
• Total No. of thermal tissue-storage chambers	2	2	4
• Cassette capacity of storage chambers	up to 360	100	80
• Recommended method for holding tissue	molten paraffin or dry	molten paraffin or dry	dry; continuous loading of magazine containing up to 20 Tissue-Tek Paraform cassette systems
• Temperature range of storage chambers in input area/In output area	40–70°C/40–70°C	50–70°C/50–70°C	75°C/ambient
Cooling functionality	cooling plates, cooling area	cooling area	24 TEC-controlled base molds
Embedding molds:			
• Molds built in to unit	no	no	yes
• No. of molds per storage compartment if not built in	300	100	—
• Recommended mold material if not built in	standard metal or disposable plastic	standard metal or disposable plastic	—
Management of waste	manually by user	manually by user	manually by user or automated collection onboard instrument
Required user maintenance	daily	daily	daily, weekly, monthly
• User maintenance records kept on instrument	no	no	some records (maintenance schedules can be set onboard)
Required maintenance by vendor's service personnel	annually	—	biannually
• Vendor maintenance records kept on instrument	no	no	no
User training and installation:			
• User training included with purchase	yes	yes	yes
• Total time for standard installation and basic training	1 hour	—	4 days
• Where training is held	at vendor and customer sites	at customer site	at vendor and customer sites (training during installation at customer site; super-user training offsite)
• Follow-up training available	yes (for new employees)	no	yes (upon customer request)
• Extra charge for follow-up training	yes (travel expenses for company's technical representative paid by customer)	no	no
Instrument list price (as of June 2017)	$12,000	—	$210,000
Warranty provided with tissue-embedding instrument	yes	yes	yes
• Length of warranty coverage before purchasing service contract	1 year	1 year	1 year
• Warranty provider	manufacturer	manufacturer	manufacturer
Users can be trained onsite as service personnel	no	yes	no
Client or a third-party maintenance company can purchase inventory of replacement parts	yes	yes	no
Cost of annual service contract (as of June 2017)	$2,400	—	—
Primary instrument safety features	—	—	temperature sensors; door locks; counter-height paraffin reservoir; onboard detection and return of cassettes with errors; more
Other distinguishing product features (supplied by company)	• foot pedal operation • modular components for user flexibility • can accommodate all types of tissue-processing baskets	• simple operation—easy to clean and maintain; one-stop-shop touchscreen; big and consistent cold plate • smooth workflow—symmetric design; large surface; automatic start; easy-to-open lids; adjustable paraffin flow • precise control—ergonomic wrist pad; magnifier can be easily tucked away	• continuous, fully automated tissue-embedding system with a throughput of up to 120 cassettes/hour • tissue orientation and integrity preserved from grossing through microtomy to prevent errors and tissue loss • onboard barcode reading to track cassettes through the embedding process

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Product guide editors: Raymond D. Aller, MD, Hal Weiner, and William DeSalvo, BS, HTL(ASCP)

TISSUE-EMBEDDING INSTRUMENTS

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Name of tissue-embedding instrument	Tissue-Tek TEC 5 Tissue Embedding Console System	Thermo Scientific HistoStar Embedding Workstation
Intent of tissue-embedding instrument	clinical use, research use	clinical use, research use
First-ever installation of this tissue-embedding instrument Total No. of units installed in U.S./Outside U.S. (as of June 2017)	1999 —	2006 —
Company sells this product through distribution partners • Vendors with which company partners	yes Cardinal Health, VWR International, Henry Schein Medical, Government Scientific Source	yes Fisher Scientific, VWR in the United States; others outside the United States
Names of other tissue-embedding instruments sold by company	Tissue-Tek AutoTEC a120 Automated Embedding System	—
Provide list of client sites to potential customers on request	yes (partial list of comparable sites, with consent of reference client sites)	yes (partial list of comparable sites)
Tissue-embedding method	semi-automated (instrument-controlled temperatures and regulated dispensing of paraffin using a press plate or foot pedal)	manual
Automatic programmable start/Automatic programmable shutdown	yes/yes	yes/yes
Tissue-embedding instrument can interface to an LIS • Type of computer interface to LIS Tissue-embedding instrument can interface to a specimen-tracking system Tissue-embedding station can automatically capture block identifier as block is presented to instrument	no — no no	no — — —
Options for reading cassettes before they are placed on instrument User interface	— keypad	— touchscreen
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)	15 × 36 × 25 in. 15 × 23 × 25 in. 15 × 13 × 24 in.	16.1 × 42.6 × 23.6 in. 16.1 × 25.6 × 23.6 in. 16.1 × 17.0 × 23.6 in.
Weight of complete tissue-embedding instrument when empty • If modular, weight of dispensing console when empty	105 lbs. 57 lbs.	99.2 lbs. 55.1 lbs.
Paraffin chamber • Capacity of paraffin chamber • Temperature range of paraffin chamber • Types of paraffin that can be used in chamber Paraffin-dispensing mechanism	yes 4 L 50–75°C all paraffin types (recommend Tissue-Tek Paraform Processing/Embedding Medium, Formula 3 [#7052]) semi-automated	yes 5 L 50–70°C all paraffin types semi-automated
Thermal tissue-storage chambers: • Total No. of thermal tissue-storage chambers • Cassette capacity of storage chambers • Recommended method for holding tissue • Temperature range of storage chambers in input area/In output area	 2 160 molten paraffin or dry 50–75°C/–10–0°C	 1 300 molten paraffin or dry 50–70°C/50–70°C
Cooling functionality	cooling plates, cooling area	cooling plates, cooling area
Embedding molds: • Molds built in to unit • No. of molds per storage compartment if not built in • Recommended mold material if not built in	 no 160+ base molds, depending on sizes standard metal or disposable plastic	 no up to 600 standard metal or disposable plastic
Management of waste	manually by user	manually by user
Required user maintenance • User maintenance records kept on instrument Required maintenance by vendor's service personnel • Vendor maintenance records kept on instrument	daily no — no	daily no annually yes
User training and installation: • User training included with purchase • Total time for standard installation and basic training • Where training is held • Follow-up training available • Extra charge for follow-up training	 yes 4 hours at customer site yes (upon customer request) no	 yes 2 hours or less at customer site yes (upon customer request) no
Instrument list price (as of June 2017)	$17,713	—
Warranty provided with tissue-embedding instrument • Length of warranty coverage before purchasing service contract • Warranty provider Users can be trained onsite as service personnel Client or a third-party maintenance company can purchase inventory of replacement parts Cost of annual service contract (as of June 2017)	yes 1 year manufacturer no yes —	yes 1 year manufacturer yes yes —
Primary instrument safety features	user-defined automatic start-up and automatic shut-down; built-in LED light and magnifier lens; optional heated forceps to prevent tissue loss and cross contamination	automatic shut-off; smooth and insulated user contact points; constructed to eliminate pressure points and uncomfortable heat conditions
Other distinguishing product features (supplied by company)	• mean time between repair of more than 52 weeks • ergonomic design for fast and comfortable embedding in either a left- or right-handed orientation • precisely metered and adjustable paraffin pump delivers the right amount of paraffin quickly	• 5-L paraffin capacity; cold plate area for 72 base molds; large heated workspace and heated specimen holding area • user-adjustable LED lighting uniformly illuminates the workspace, eliminating the need for remote lamps • heated wax trimmer built in to the workspace

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MEDICAL TECHNOLOGIST
Cook County Health & Hospitals System – Chicago, IL, United States

Technical Director Laboratory
ACL Laboratories – Rosemont, IL, United States

Hematopathologist Surgical Pathologist
Tulane University Health Sciences Center – New Orleans, LA, United States

Pathology Medical Center Line Professorate
Stanford School of Medicine – Stanford, CA, United States

Pathology Physician-Scientists
Stanford School of Medicine – Stanford, CA, United States

Pathologist
Central Regional Pathology Laboratories, P.A. – St. Paul, MN, United States

Lab Technician
New York Cancer and Blood Specialist – Long Island, NY, United States

Pathologist Opportunities
Southern California Permanente Medical Group – Kaiser Permanente Southern California – North Hollywood, CA, United States

Cytopathologist
Tufts Medical Center – Boston, MA, United States

Clinical Chemist/Clinical Pathology
University of Utah – Salt Lake City, UT, United States

Toxicologist/Clinical Chemist
University of Utah – Salt Lake City, UT, United States

Community Pathologist - Private Practice, Florida panhandle
Bay Pathology Associates – Panama City, FL, United States

Cytotechnologist
Beebe Healthcare – Lewes, DE, United States

Laboratory Technologist - Immunohistochemistry - Days
NewYork-Presbyterian Hospital – New York, NY, United States

Curation Scientist
Boston Children's Hospital – Boston, MA, United States

Assistant Professor, Research Faculty Appointment
The University of Texas M.D. Anderson Cancer Center – Houston, TX, United States

Pathologist with fellowship training in gastrointestinal pathology
PeaceHealth – Vancouver, WA, United States

Pathologist with subspecialty certification (or eligibility) in Cytopathology
PeaceHealth – Vancouver, WA, United States

HISTOLOGY TECHNOLOGIST
BAPTIST SOUTH – Central Alabama, AL, United States

Northwestern University Feinberg School of Medicine
Academic Pulmonary Pathologist – Chicago, IL, United States

Pathologist
UNIVERSITY OF ALABAMA AT BIRMINGHAM – Birmingham, AL, United States

Academic AP/CP Pathologist
MidHudson Regional Hospital – Poughkeepsie, NY, United States

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AUTOMATED MICROTOMES

Part 1/2 **See captodayonline.com/productguides for an interactive version of guide**	**General Data** **Jackie Malblanc** jmalblanc@general-data.com **4043 McMann Rd.** **Cincinnati, OH 45245** **513-752-7978** www.general-data.com/hc	**Leica Biosystems** **Ryan Gresavage** ryan.gresavage@leicabiosystems.com **1700 Leider Lane** **Buffalo Grove, IL 60089** **847-848-3230** www.leicabiosystems.com	**pfm medical ag** **Ronald Kusters** ronald.kusters@pfmmedical.com **Wankelstrasse 60** **Cologne, Germany 50996** **+49 2236 9641 99-660** www.pfmmedical.com
Name of automated microtome	Artis A	RM2255 Fully Automated Rotary Microtome	pfm Rotary 3006 EM
Intent of automated microtome Specific uses for automated microtome	clinical use, research use traditional histology microscopy	clinical use, research use traditional histology microscopy, electron microscopy	clinical use, research use traditional histology microscopy
First-ever installation of this automated microtome Total No. of units installed in U.S./Outside U.S. (as of June 2017)	2016 2/—	— —	2014 —/200+ (Europe, Australia, Asia, Middle East, Africa)
Company sells this product through distribution partners • Vendors with which company partners	— —	yes North Central Instruments	yes Cancer Diagnostics (for U.S. sales)
Names of other automated microtomes sold by company	—	Leica RM2265 Fully Automated Rotary Microtome	pfm Rotary 3005 E, pfm Slide 4005 E
Provide list of client sites to potential customers on request	yes (partial list of comparable sites)	no (information is confidential)	no (information is confidential)
Configuration of microtome	rotary	rotary	rotary
Automatic programmable start/Automatic programmable shutdown	no/no	no/no	no/no
Mechanics of microtome: • Cutting modes • Cutting range • Cutting speed • Display monitors	 continuous mode, single-section mode, trim mode 1–100 µm variable yes	 continuous mode, single-section mode, rock mode, trim mode, step mode (start/stop with foot pedal) 0.5–100 µm 1–600 µm/sec. yes	 continuous mode, single-section mode, partial-section mode, trim mode, manual mode 0.5–100 µm 0–300 mm/sec. yes
Driving mechanism of microtome	retracting (5–100 µm)	retracting (5–100 µm in manual mode, which can be turned off; varies with sectioning speed in motorized mode, which can be turned off)	retracting (0–100 µm); ratchet; backlash- and maintenance-free horizontal and vertical crossed roller bearings (oversized)
Specimen orientation: • Type of specimen holder or clamp • Adjustment mechanism • Home position for block clearly identified	 quick release for regular tissue cassettes, clamp for large blocks manual dial yes	 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 manual dial yes	 quick release for regular tissue cassettes, standard clamp for irregular cassettes, clamp for large blocks, small clamps for resin and minute samples, round clamps, foil clamp, more manual dial yes
Microtome senses ID of block as it is placed for cutting	—	no	no
Microtome senses slide identifier as slide is created	—	no	no
Sectioning thickness: • Cutting range • Trimming range • Type of adjustment mechanism • Sectioning modes	 1–100 µm 1–600 µm electronic button single section, continuous sections	 0.5–100 µm 1–600 µm electronic button single section, continuous sections, partial sections, rock mode, step mode with optional foot pedal	 0.5–100 µm 0–500 µm in variable increasing steps electronic button single section, continuous sections, partial sections, manual mode
Type of microtome blades • Cutting angle adjustment	disposable (high- and low-profile blades; separate holder required for each blade) adjust with wrench	disposable (high- and low-profile blades; separate holder required for each blade), reusable steel/carbide knives, diamond and glass knives adjust with wrench	disposable (high- and low-profile blades; separate holder required for each blade), reusable steel/carbide knives adjust with lever
Required user maintenance • User maintenance records kept on instrument Required maintenance by vendor's service personnel • Vendor maintenance records kept on instrument	daily, weekly no annually no	daily no annually no	daily cleaning no annually some records (number of sections cut)
User training and installation: • User training included with purchase • Total time for standard installation and basic training • Where training is held • Follow-up training available • Extra charge for follow-up training	 yes 2 hours at vendor and customer sites yes (for new employees) yes (travel expenses for company's technical representative paid by customer)	 yes 1 hour at customer site yes (upon customer request) no	 yes 2–3 hours advanced microtomy workshops held in central locations; user training at customer site during installation yes (if necessary or upon customer request) —
Instrument list price (as of June 2017)	$18,500	—	—
Warranty provided with microtome • Length of warranty coverage before purchasing service contract • Warranty provider Users can be trained onsite as service personnel Client or a third-party maintenance company can purchase inventory of replacement parts Cost of annual service contract (as of June 2017)	yes 1 year manufacturer no yes $2,000	yes 1 year manufacturer — — —	yes 1 year manufacturer or secondary source no yes —
Primary instrument safety features	blade guard; blade ejector; emergency stop button; wheel locks	blade guard; blade ejector; emergency stop button; wheel locks; centering of handle of handwheel for safety	blade guard; emergency stop button; wheel locks; handwheel locking at every position, removable handle
Primary Lean workflow features	—	zero position on orientation; quick clamp exchange; patented handwheel balance system; lateral displacement of blade holder to prolong blade life; more	object orientation with tangible zero-point identification and visual marking for specimen orientation; foot switch for start/stop function; touchscreen; memory for auto-return to start position
Primary productivity processing features	—	three predefined positions on blade holder; clearance angle will not change once set with allen key	range of accessories to cut paraffin blocks, resin embedded tissue, and hard materials; motorized course feed of 1.7 mm/sec.; set position for knife angle
Primary ergonomic features	user-operated and user-controlled foot pedal and hand pad	one-piece plastic housing allows comfortable access to controls and fast and easy cleaning; fewer clamping levers permits unencumbered access to the cutting area; ergonomically designed handwheel handle	touchscreen operation; foot switch; fully anodized housing for easy cleaning; handwheel for manual operation; waste tray well designed around blade holder
Other distinguishing product features (supplied by company)	• user-controlled foot pedal to reduce or eliminate repetitive-motion symptoms • integrated light source for easy identification of specimens in blocks • position memory recall to expedite facing of blocks	• patented handwheel balance system • blade holder with blade removal • owns workflow from biopsy to diagnosis	• robust design with backlash- and maintenance-free horizontal and vertical crossed roller bearing system for extended-life use • ergonomic design and fully anodized housing for easy cleaning • 100% designed, developed, and manufactured in Germany

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

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Product guide editors: Raymond D. Aller, MD, Hal Weiner, and William DeSalvo, BS, HTL(ASCP)

AUTOMATED MICROTOMES

Part 2/2 See captodayonline.com/productguides for an interactive version of guide	**Sakura Finetek USA** **Alyicia Rios** arios@sakuraus.com **1750 W. 214th St.** **Torrance, CA 90501** **800-725-8723 ext. 2317** www.sakura-americas.com	**Thermo Fisher Scientific** **Amber Carson** amber.carson@thermofisher.com **4481 Campus Drive** **Kalamazoo, MI 49008** **269-544-5679** www.thermofisherscientific.com
Name of automated microtome	Tissue-Tek AutoSection Automated Microtome	Thermo Scientific HM 355S Automated Rotary Microtome
Intent of automated microtome Specific uses for automated microtome	clinical use, research use traditional histology microscopy	clinical use, research use traditional histology microscopy
First-ever installation of this automated microtome Total No. of units installed in U.S./Outside U.S. (as of June 2017)	2013 —	2005 —
Company sells this product through distribution partners • Vendors with which company partners	yes Cardinal Health, VWR International, Government Scientific Source	yes Fisher Scientific, VWR International in the United States; others outside the United States
Names of other automated microtomes sold by company	—	—
Provide list of client sites to potential customers on request	yes (partial list of comparable sites, with consent of reference client sites)	yes (partial list of comparable sites)
Configuration of microtome	electronic fully automated drive-by-wire technology	rotary
Automatic programmable start/Automatic programmable shutdown	no/no	yes/no
Mechanics of microtome: • Cutting modes	continuous mode, single-section mode, trim mode, Sakura AutoAlign, AutoTrim, AutoSection technology and retraction, programmable sectioning	continuous mode, single-section mode, partial-section mode, rock mode, trim mode, multi-section mode
• Cutting range • Cutting speed • Display monitors	0.5–100 µm 10–450 µm/sec. yes	0.5–100 µm 0–430 mm/sec. yes
Driving mechanism of microtome	retracting (20–100 µm [can also be set to nonretracting])	retracting (60 µm [horizontal feed range: max. of 28 mm; vertical specimen stroke: max. of 64 mm])
Specimen orientation: • Type of specimen holder or clamp	quick release for regular tissue cassettes	quick release for regular tissue cassettes, standard clamp for irregular cassettes, clamp for large blocks, small clamps for resin and minute samples
• Adjustment mechanism • Home position for block clearly identified	electronic button yes	manual dial —
Microtome senses ID of block as it is placed for cutting Microtome senses slide identifier as slide is created	no no	no no
Sectioning thickness: • Cutting range • Trimming range • Type of adjustment mechanism • Sectioning modes	0.5–100 µm 1–200 µm electronic button single section; continuous sections; 16 programmable sectioning protocols, each having up to 15 steps	0.5–100 µm 5–500 µm electronic button single section, continuous sections, partial sections, rock mode, multi-section mode
Type of microtome blades • Cutting angle adjustment	disposable (high- and low-profile blades) no adjustment needed (fixed blade holder; device aligns block face to blade)	disposable (high- and low-profile blades), reusable steel/carbide knives adjust with lever
Required user maintenance • User maintenance records kept on instrument Required maintenance by vendor's service personnel • Vendor maintenance records kept on instrument	daily no annually no	daily — annually —
User training and installation: • User training included with purchase • Total time for standard installation and basic training • Where training is held • Follow-up training available • Extra charge for follow-up training	yes 4 hours at customer site yes (upon customer request) no	yes 1 day at customer site yes (upon customer request) yes
Instrument list price (as of June 2017)	$29,995	—
Warranty provided with microtome • Length of warranty coverage before purchasing service contract • Warranty provider Users can be trained onsite as service personnel Client or a third-party maintenance company can purchase inventory of replacement parts Cost of annual service contract (as of June 2017)	yes 1 year manufacturer no yes —	yes 1 year manufacturer yes yes —
Primary instrument safety features	blade guard; emergency stop button; wheel locks; safety LED lights; large speaker for alarms; more	blade guard; emergency stop button; wheel locks
Primary Lean workflow features	AutoAlign features align block face to blade edge; AutoTrim removes predefined amount of paraffin from blocks in 10 seconds; 16 programmable sectioning programs; Bluetooth wireless remote for rapid change of sectioning parameters	select from single, multiple, interval, and continuous sectioning modes; multifunction knobs control sample advance, section thickness, rapid switching between trim and section functions and stop/start operation; quick-release mechanism; more
Primary productivity processing features	fixed blade holder; three-dimensional chuck and sensing plate automatically align block to blade; standardized, programmable sectioning	72-mm vertical cutting stroke to section blocks; tachogenerator-controlled motorized cutting stroke regulates torque; parallel guide rails and crossed roller bearings preserve stability of knife holder
Primary ergonomic features	fully automated microtome prevents repetitive motion disorders, replacing handwheel with touchscreen and programmable sectioning; Bluetooth wireless remote accommodates left- and right-handed personnel	large wraparound waste tray; detachable and repositionable control panel; multifunction knobs that can be configured for left- or right-handed operation; handwheel equipped with crossed roller bearings
Other distinguishing product features (supplied by company)	• AutoAlign automatically aligns block face to blade • programmable sectioning standardizes all tissue types for all technicians in the laboratory • AutoTrim quickly and efficiently faces blocks in 10 seconds	• integrates technological innovation and ergonomic design to meet the sectioning requirements of laboratories • exceptional quality sections across an extensive range of specimens—highly versatile • advanced safety and product features

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

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SEPTEMBER

13 SEP — BLEEDING & THROMBOSING DISEASES CONFERENCE & WORKSHOP
MAYO MEDICAL LABORATORIES, SEPTEMBER 13-15, 2017, ROCHESTER, MINNESOTA
Event Type: Live Event
Specialty: Pathology
CME: Yes
City, State: Minnesota, Rochester

15 SEP — THORACIC PATHOLOGY
SEPTEMBER 15-17, 2017 NEW YORK CITY
Specialty: Thoracic Pathology
CME: Yes
City, State: New York, New York

OCTOBER

1 OCT — PATHOLOGY VISIONS CONFERENCE 2017
Event Type: Annual Meetings/Tradeshows
City, State: San Diego, CA

8 - 11 OCT — CAP17
THE PATHOLOGIST MEETING™
Event Type: Annual Meetings/Tradeshows

9 OCT — DERMATOPATHOLOGY COURSE
BIG ISLAND, HI: OCTOBER 9-12, 2017
Event Type: Live Event
Specialty: Dermatopathology
CME: Yes
City, State: Big Island, HI

16 OCT — HOT TOPICS IN SURGICAL PATHOLOGY OF THE BREAST, GENITOURINARY SYSTEM, HEAD AND NECK AND LUNGS MAUNA LANI BAY RESORT,
KOHALA COAST, BIG ISLAND OF HAWAII: OCTOBER 16 - 19, 2017
Specialty: Breast Pathology, Head and Neck and Lungs, Surgical Pathology
CME: Yes
City, State: Big Island, HI

21 OCT — PNWSP / WSSP JOINT FALL 2017 MEETING
OCT. 21-22, 2017 FRED HUTCHINSON CANCER RESEARCH CENTER, SEATTLE
Specialty: Pathologists
CME: Yes
City, State: Seattle

NOVEMBER

6 NOV — TUTORIAL ON PATHOLOGY OF THE GI TRACT, PANCREAS AND LIVER
WESTIN NEW ORLEANS CANAL PLACE IN NEW ORLEANS, LA
NOVEMBER 6 - NOVEMBER 10, 2017
Event Type: Live Event
Specialty: Pathology
CME: Yes
City, State: New Orleans, Louisiana

10 NOV — THE AMERICAN SOCIETY OF CYTOPATHOLOGY 65TH ANNUAL SCIENTIFIC MEETING!
ARIZONA GRAND RESORT, PHOENIX, AZ
Event Type: Annual Meetings/Tradeshows, Live Event
Specialty: Pathologists
CME: Yes
City, State: Phoenix, AZ

JANUARY

22 JAN — TUTORIAL ON NEOPLASTIC HEMATOPATHOLOGY
MARRIOTT MIAMI BISCAYNE BAY MIAMI, FL
JANUARY 22ND - JANUARY 26TH, 2018
Event Type: Live Event
Specialty: Pathology
CME: Yes
City, State: FL, Miami

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AUTOMATED STAINING INSTRUMENTS

Part 1/7 See captodayonline.com/productguides for an interactive version of guide	Biocare Medical 60 Berry St. Pachecho, CA 94553 800-799-9499 www.biocare.net	Biocare Medical 60 Berry St. Pachecho, CA 94553 800-799-9499 www.biocare.net	BioGenex Tal Varsano t.varsano@biogenex.com 49026 Milmont Drive Fremont, CA 94538 800-421-4149 www.biogenex.com
Name of automated staining instrument	IntelliPATH FLX	ONCORE	i6000 Elite
Intent of automated staining instrument	clinical use, research use	clinical use, research use	clinical use, research use
Type of staining conducted on instrument	immunohistochemical/in situ	immunohistochemical/in situ, fluorescence in situ hybridization	immunohistochemical/in situ, histochemical/special stains
Recommended applications	histology	histology	histology, cytology, special staining, IHC, IF
First-ever installation of this staining instrument	2008	2014	2000
Total No. of units installed in U.S./Outside U.S. (as of June 2017)	—	—	97/172 (China, Japan, U.K., Italy, Germany, Turkey, India, Taiwan, more)
Company manufactures this automated staining instrument	yes	yes	yes
Company sells this product through distribution partners	yes	yes	yes
• Vendors with which company partners	international distributors	international distributors	MBL (Japan), Launched Diagnostics (U.K.), DCS Innovative Diagnostik-Systeme (Germany), Hong Jing (Taiwan), Gamidor (Turkey), and 70 more
Names of other automated staining instruments sold by company	ONCORE Autostainer	IntelliPATH FLX	Xmatrx ELITE, Xmatrx Infinity, Xmatrx NANO, Xmatrx MINI
Provide list of client sites to potential customers on request	yes	yes	yes (partial list of comparable sites)
Model type	benchtop	benchtop	benchtop
• Dimensions (H × W × D)	24 × 40 × 25 in.	22 × 35 × 24 in.	18.5 × 40.5 × 24 in.
• Weight empty/Weight fully loaded	—/145 lbs.	—/110 lbs.	130 lbs./140 lbs.
Automatic programmable start/Automatic programmable shutdown	yes/yes	yes/yes	yes/yes
Maximum slide capacity of instrument	50	36	60
Instrument platform	modular (up to 4 units controlled by 1 computer [2 with research software]) or individual	individual	individual
Stainer control computer can be interfaced to an LIS	yes (to LISs compatible with XML and HL7 messaging standards)	yes (to LISs compatible with XML and HL7 messaging standards)	yes (to Sunquest; others may be compatible)
• Type of computer interface to LIS	unidirectional, bidirectional	unidirectional, bidirectional	bidirectional
Staining instrument can interface to a specimen-tracking system	yes	no	yes
Barcode used to read slides placed on staining instrument	yes (two-dimensional open barcode)	yes (two-dimensional open barcode)	yes (barcode with proprietary format)
• When barcode is read, stainer obtains stains to be done from host computer/LIS	yes	no	yes
• Information included in barcode	specimen identifier, stains to be done (proprietary code)	specimen identifier, stains to be done (proprietary code)	stains to be done (proprietary code)
• How barcode information is conveyed	open barcode	open barcode	company's proprietary barcode system
RFID used to read slides placed on staining instrument	—	—	—
• When RFID is read, stainer obtains stains to be done from host computer/LIS	—	—	—
User interface	keyboard with mouse	keyboard with mouse	keyboard with mouse
Reagent configuration	open reagent system	combination of open and closed system	combination of open and closed system
Instrument reagent application	reagents applied to patient slides individually	reagents applied to patient slides individually	reagents applied to patient slides individually
Uses for bulk reagents	rinsing	deparaffinization, rinsing, antigen retrieval	rinsing
No. of tests or slides one reagent/test kit can handle	20	70, 90,180 (variable)	50 or 200 (IHC), 50 (special stains)
Staining configuration	set by manufacturer or user programmable (user's choice)	set by manufacturer	user programmable
How slides on runs are handled	batch and continuous load (10 slides per rack/5 racks per run)	batch load (1 slide per rack/36 racks per run)	continuous load (12 slides per rack/5 racks per run)
Method of heating or drying slides	offline drying system	online drying system	online drying system
Solution for rinsing slides	distilled water, buffer	buffer	distilled water, tap water, buffer, alcohol, DEPC
Online coverslipping integrated into system	no	no	no
Fume control	not needed/not required	not needed/not required	nontoxic, fume-free reagents offered
Onboard quality control	yes	yes	no
• Onboard quality control for individual reagents	no	yes	no
• Types of quality control for reagents	—	temperature, radio-frequency identification	—
• Onboard quality control for staining program	yes	yes	yes
Management of waste	automated collection onboard instrument	automated collection onboard instrument (separates hazardous/nonhazardous waste)	automated collection onboard instrument
Required user maintenance	weekly	weekly, semi-annually	cleaning as needed
• User maintenance records kept on instrument	no	no	no
Required maintenance by vendor's service personnel	annually	semi-annually, annually	annually
• Vendor maintenance records kept on instrument	no	no	no
User training and installation:			
• User training included with purchase	yes	yes	yes
• Total time for standard installation and basic training	2–3 days	2–3 days	2–3 days
• Where training is held	at vendor and customer sites (initial training onsite; extensive training at headquarters)	at vendor and customer sites (initial training onsite; extensive training at headquarters)	at vendor and customer sites (per customer preference and contract terms)
• Follow-up training available	yes (upon customer request)	yes (upon customer request)	yes (upon customer request)
• Extra charge for follow-up training	no	no	yes (charges depend on circumstances)
Instrument list price (as of June 2017)	—	—	$63,750–$86,000
Warranty provided with staining instrument	yes	yes	yes
• Length of warranty before purchasing service contract	1 year	1 year	1 year
• Warranty provider	manufacturer	manufacturer	manufacturer
Users can be trained onsite as service personnel	no	no	no
Client or a third-party maintenance company can purchase inventory of replacement parts	yes	yes	yes
Cost of annual service contract (as of June 2017)	—	—	—
Primary user safety features	door lock; bulk carboy sensors	door lock; minimal hazardous/nonhazardous waste generation	emergency stop; magnetic latch lock that pauses run if lid is opened; visual and audio alerts; no need for xylene and harmful chemicals; automated waste collection
Primary productivity processing features	true continuous random-access slide processing; simultaneous multiplex IHC capability; LIS interface; reagent/inventory tracking	slide baking, deparaffinization, antigen retrieval, and antibody detection for IHC and multiplex IHC applications onboard; can run different protocols simultaneously	multifunctional system for IHC, IF, multiplex, and special stains; continuous random-access slide processing with unattended overnight run option; high throughput; more
Other distinguishing product features (supplied by company) *Note: a dash in lieu of an answer means company did not answer question or question is not applicable*	• 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 • simultaneous multiplex IHC capability	• capabilities on board include slide baking, deparaffinization, antigen retrieval • walk-away automation • simultaneous multiplex IHC capability	• high throughput: 60 slides and 53 antibodies per run • multiple slide-processing options—random, continuous, and STAT, as well as unattended overnight run option • fast processing; reagent dispense volumes of 100 µL to 900 µL; liquid-level sensor for reagent dispensing

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AUTOMATED STAINING INSTRUMENTS

Part 2/7 **See captodayonline.com/productguides for an interactive version of guide**	**BioGenex** **Tal Varsano** t.varsano@biogenex.com **49026 Milmont Drive** **Fremont, CA 94538** **800-421-4149** www.biogenex.com	**BioGenex** **Tal Varsano** t.varsano@biogenex.com **49026 Milmont Drive** **Fremont, CA 94538** **800-421-4149** www.biogenex.com	**Dako, an Agilent Technologies company** **Kathy Bowden** kathy.bowden@agilent.com **5301 Stevens Creek Blvd.** **Santa Clara, CA 95051** **302-567-7667** www.agilent.com
Name of automated staining instrument	Xmatrx ELITE	Xmatrx NANO	Dako Autostainer Link 48
Intent of automated staining instrument	clinical use, research use	clinical use, research use	clinical use, research use
Type of staining conducted on instrument	immunohistochemical/in situ, histochemical/special stains, fluorescence in situ hybridization	immunohistochemical/in situ, fluorescence in situ hybridization	immunohistochemical/in situ, fluorescence in situ hybridization
Recommended applications	histology, cytology, special staining, IHC, ISH, FISH, IF, in situ PCR, CTCs	histology, cytology, ISH, FISH, IF, in situ PCR	histology, cytology
First-ever installation of this staining instrument	2006	2015	1997
Total No. of units installed in U.S./Outside U.S. (as of June 2017)	90/81 (China, Japan, U.K., Germany, Italy, Turkey, India, Taiwan, more)	5/17 (Spain, Netherlands, Hong Kong, Italy, Argentina, Turkey, China, more)	— (U.S., Canada, Korea, Australia, Europe, China, Brazil, Japan)
Company manufactures this automated staining instrument	yes	yes	no (manufactured by Thermo Fisher)
Company sells this product through distribution partners	yes	yes	—
• Vendors with which company partners	MBL (Japan), Launched Diagnostics (U.K.), DCS Innovative Diagnostik-Systeme (Germany), Hong Jing (Taiwan), Gamidor (Turkey), more	MBL (Japan), Launched Diagnostics (U.K.), DCS Innovative Diagnostik-Systeme (Germany), Hong Jing (Taiwan), Gamidor (Turkey), more	—
Names of other automated staining instruments sold by company	i6000 Elite, Xmatrx Infinity, Xmatrx NANO, Xmatrx MINI	i6000 Elite, Xmatrx Infinity, Xmatrx ELITE, Xmatrx MINI	Dako Omnis, Artisan Pro, PT 200, Coverstainer, Dako Coverslipper
Provide list of client sites to potential customers on request	yes (partial list of comparable sites)	yes (partial list of comparable sites)	yes (partial list of comparable sites)
Model type	floor standing	benchtop	benchtop
• Dimensions (H × W × D)	59 × 46 × 29 in.	15.7 × 30 × 20 in.	27 × 35 × 26 in.
• Weight empty/Weight fully loaded	401 lbs./500 lbs.	106 lbs./120 lbs.	147 lbs./—
Automatic programmable start/Automatic programmable shutdown	yes/yes	yes/yes	yes/no
Maximum slide capacity of instrument	40	10	48
Instrument platform	individual	individual	modular
Stainer control computer can be interfaced to an LIS	yes (to Sunquest; others may be compatible)	yes (to Sunquest; others may be compatible)	yes (to Cerner, Cortex, Epic, LigoLab, Meditech, Novovision, Orchard, SCC Soft Computer, Sunquest, more)
• Type of computer interface to LIS	bidirectional	bidirectional	bidirectional
Staining instrument can interface to a specimen-tracking system	—	no	yes
Barcode used to read slides placed on staining instrument	yes (barcode with proprietary format)	—	yes (one-dimensional open barcode)
• When barcode is read, stainer obtains stains to be done from host computer/LIS	yes	—	—
• Information included in barcode	stains to be done (proprietary code)	—	specimen identifier, stains to be done (LOINC code)
• How barcode information is conveyed	company's proprietary barcode system	—	open barcode
RFID used to read slides placed on staining instrument	yes (RFID with proprietary format)	—	—
• When RFID is read, stainer obtains stains to be done from host computer/LIS	yes	—	—
User interface	keyboard with mouse	laptop computer	keyboard with mouse
Reagent configuration	combination of open and closed system	combination of open and closed system	combination of open and closed system
Instrument reagent application	reagents applied to patient slides individually	reagents applied to patient slides individually	reagents applied to patient slides individually
Uses for bulk reagents	deparaffinization, rinsing	deparaffinization, rinsing	rinsing
No. of tests or slides one reagent/test kit can handle	50 and 200 (IHC), 25 (ISH), 10 and 20 (FISH), 50 (special stains)	20 (FISH), 25 or 50 (CISH)	125–190
Staining configuration	user programmable	user programmable	set by manufacturer or user programmable (user's choice)
How slides on runs are handled	continuous load (10 slides per rack/4 racks per run)	continuous load (10 slides per rack/1 rack per run)	batch load (12 slides per rack/4 racks per run)
Method of heating or drying slides	online drying system	online drying system	offline drying system
Solution for rinsing slides	distilled water, tap water, buffer, dewax solution, alcohol, DEPC	distilled water, tap water, buffer, dewax solution, alcohol, DEPC, stringent wash	distilled water, buffer
Online coverslipping integrated into system	yes (glass)	yes (glass)	no
Fume control	nontoxic, fume-free reagents offered	nontoxic, fume-free reagents offered	onboard filters
Onboard quality control	no	—	yes
• Onboard quality control for individual reagents	no	—	yes
• Types of quality control for reagents	—	—	expiration dates, ability to test lot-to-lot on same run
• 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	cleaning as needed	cleaning as needed	daily or dependent on slide count that is tracked onboard
• User maintenance records kept on instrument	no	no	no
Required maintenance by vendor's service personnel	annually	annually	annually
• Vendor maintenance records kept on instrument	no	no	no
User training and installation:			
• User training included with purchase	yes	yes	yes
• Total time for standard installation and basic training	2–3 days	— (installed by user)	3–6 days
• Where training is held	at vendor and customer sites (per customer preference and contract terms)	— (free hotline support and validation assistance)	at vendor and customer sites
• Follow-up training available	yes (upon customer request)	yes (upon customer request)	yes (dependent on customer need)
• Extra charge for follow-up training	yes (charges depend on circumstances)	yes (charges depend on circumstances)	no
Instrument list price (as of June 2017)	$93,500–$145,000	$42,000–$49,500	—
Warranty provided with staining instrument	yes	yes	yes
• Length of warranty before purchasing service contract	1 year	1 year	1 year
• Warranty provider	manufacturer	manufacturer	manufacturer
Users can be trained onsite as service personnel	no	no	no
Client or a third-party maintenance company can purchase inventory of replacement parts	yes	yes	yes
Cost of annual service contract (as of June 2017)	—	—	—
Primary user safety features	emergency stop; magnetic latch lock that pauses run if lid is opened; visual and audio alerts; no need for xylene and harmful chemicals; automated waste collection	emergency stop; magnetic latch lock that pauses run if lid is opened; visual and audio alerts; no need for xylene and harmful chemicals; automated waste collection	separation of hazardous waste
Primary productivity processing features	multifunctional system for IHC, CISH, FISH, in situ PCR, IF, multiplex, special stains; stains up to 100 slides per day; continuous random-access slide processing; more	multifunctional system for CISH, FISH, in situ PCR, and IF; continuous random-access slide processing with unattended overnight run option; high throughput; more	48-slide capacity; split-run feature; short run times
Other distinguishing product features (supplied by company)	• automates any slide-based staining • offers complete automation from baking to final coverslip, with integrated online glass coverslipping • wide reagent dispensing volumes (10–850 µL) and proprietary microchamber technology reduce reagent consumption by 50% to 90%	• runs up to 10 FISH protocols simultaneously, reducing manual intervention to 4 simple steps and 30 min. hands-on time • completely automated glass coverslipping and sealing—eliminating need for rubber cement • uses any third-party reagents for FISH, in situ PCR, and CISH; text messages to alert on manual interventions	• flexible protocols allow user to introduce new reagents and validate them for use in lab's diagnostic routine • highly versatile; disease panels; pharmDx; IHC; visualization options; more • ability to run multiple lots at same time with split-run feature for lot-to-lot testing

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 3/7 **See captodayonline.com/productguides for an interactive version of guide**	**Dako, an Agilent Technologies company** **Kathy Bowden** kathy.bowden@agilent.com **5301 Stevens Creek Blvd.** **Santa Clara, CA 95051** **302-567-7667** www.agilent.com	**General Data** **Jackie Malblanc** jmalblanc@general-data.com **4043 McMann Rd.** **Cincinnati, OH 45245** **513-752-7978** www.general-data.com/hc	**Leica Biosystems** **Jason F. Ong** jason.f.ong@leicabiosystems.com **1700 Leider Lane** **Buffalo Grove, IL 60089** **847-821-3583** www.leicabiosystems.com
Name of automated staining instrument	Omnis	2030	BOND-III
Intent of automated staining instrument	clinical use	clinical use, research use	clinical use
Type of staining conducted on instrument	immunohistochemical/in situ, fluorescence in situ hybridization	hematoxylin and eosin, histochemical/special stains	immunohistochemical/in situ, fluorescence in situ hybridization
Recommended applications	histology	histology, cytology, special staining	histology, cytogenetics
First-ever installation of this staining instrument	2014	2014	2009
Total No. of units installed in U.S./Outside U.S. (as of June 2017)	200+/300+ (worldwide)	30/—	4,000+ worldwide
Company manufactures this automated staining instrument	no (manufactured by Tecan)	yes	yes
Company sells this product through distribution partners	no	yes	no
• Vendors with which company partners	—	—	—
Names of other automated staining instruments sold by company	Autostainer Link 48, Autostainer, Artisan Pro, PT 200, Dako Coverslipper, Coverstainer	—	BOND-MAX, BOND RX, BOND RXm
Provide list of client sites to potential customers on request	yes (partial list of comparable sites)	yes (partial list of comparable sites)	yes (partial list of comparable sites)
Model type	floor standing	benchtop	floor standing
• Dimensions (H × W × D)	60.4 × 57.1 × 31.2 in.	14.49 × 47.24 × 17.32 in.	53.5 × 30.5 × 30.9 in.
• Weight empty/Weight fully loaded	1,150 lbs./1,323 lbs.	143 lbs./150 lbs.	542 lbs./595 lbs.
Automatic programmable start/Automatic programmable shutdown	yes/no	no/no	yes/no
Maximum slide capacity of instrument	60	30 per rack	30
Instrument platform	modular (8 units controlled by 1 computer)	individual	modular (5 units controlled by 1 computer)
Stainer control computer can be interfaced to an LIS	yes (to Cerner, Cortex, Epic, LigoLab, Meditech, Novovision, Orchard, SCC Soft Computer, Sunquest, more)	no	yes
• Type of computer interface to LIS	unidirectional and bidirectional	no interface	bidirectional
Staining instrument can interface to a specimen-tracking system	yes	no	yes
Barcode used to read slides placed on staining instrument	yes (one- and two-dimensional open barcode)	—	yes (two-dimensional open barcode)
• When barcode is read, stainer obtains stains to be done from host computer/LIS	yes	—	yes
• Information included in barcode	specimen identifier	—	specimen identifier, stains to be done
• How barcode information is conveyed	open barcode	—	open barcode
RFID used to read slides placed on staining instrument	—	—	—
• When RFID is read, stainer obtains stains to be done from host computer/LIS	—	—	—
User interface	touchscreen, keyboard with mouse	keypad	keyboard with mouse
Reagent configuration	combination of open and closed system	open reagent system	combination of open and closed system
Instrument reagent application	reagents applied to patient slides individually or patient slides submerged in shared reagents	patient slides submerged in shared reagents	reagents applied to patient slides individually
Uses for bulk reagents	deparaffinization, rinsing	deparaffinization, rinsing	deparaffinization, rinsing, epitope retrieval steps
No. of tests or slides one reagent/test kit can handle	600	90	200
Staining configuration	set by manufacturer or user programmable (user's choice)	set by manufacturer or user programmable (user's choice)	set by manufacturer or user programmable (user's choice)
How slides on runs are handled	batch and continuous load (5 slides per rack/ 12 racks per run)	batch and continuous load (30 slides per rack/ 3 racks per run)	batch and continuous load (10 slides per rack/ 3 racks per run)
Method of heating or drying slides	offline drying system	online drying system	online drying system
Solution for rinsing slides	distilled water, tap water, buffer	distilled water, tap water (inlet), buffer	buffer, deionized water
Online coverslipping integrated into system	no	no	no
Fume control	onboard filters and vented	onboard filters	not required
Onboard quality control	yes	yes	—
• Onboard quality control for individual reagents	yes	yes	yes
• Types of quality control for reagents	temperature, pH, dilution	—	temperature, dilution, volume control, incubation/time controls
• Onboard quality control for staining program	yes	no	yes
Management of waste	automated collection onboard instrument	manually by user	automated collection onboard instrument
Required user maintenance	daily, weekly	daily, weekly	daily, weekly, monthly
• User maintenance records kept on instrument	yes	no	yes
Required maintenance by vendor's service personnel	semi-annually	annually	semi-annually, annually
• Vendor maintenance records kept on instrument	yes	no	yes
User training and installation:			
• User training included with purchase	yes	yes	yes
• Total time for standard installation and basic training	5–6 days	4 hours	3 days
• Where training is held	at vendor and customer sites	at vendor and customer sites	at vendor and customer sites
• Follow-up training available	yes (for 1 year)	yes (for new employees)	yes (as needed)
• Extra charge for follow-up training	no	yes (travel expenses for company's technical representative paid by customer)	yes (for training at Leica; no charge for training at customer site)
Instrument list price (as of June 2017)	—	$28,500	—
Warranty provided with staining instrument	yes	yes	yes
• Length of warranty before purchasing service contract	1 year	1 year	1 year
• Warranty provider	manufacturer	manufacturer	manufacturer
Users can be trained onsite as service personnel	no	no	no
Client or a third-party maintenance company can purchase inventory of replacement parts	yes	yes	yes
Cost of annual service contract (as of June 2017)	—	$1,800	—
Primary user safety features	no manual mixing of DAB chromogen and substrate buffer; separation of hazardous waste	—	instrument pauses if lid is opened; will stop run to prevent hazardous waste from overfilling
Primary productivity processing features	seamless integration with LIS and LEAN workflow IT systems; 165 IHC or 45 ISH 8-hour+ overnight capacity	can run up to 5 racks at once	—
Other distinguishing product features (supplied by company)	• enough water, waste, buffer, and reagent positions for full day and overnight run (165 IHC/45 ISH) • capable of running simultaneously IHC, ISH, IF, double staining, and red chromogens • temperature-controlled reagent storage module	• open system • easy to program • flexible—can run different programs at the same time	• fast, consistent turnaround time • reliable—high quality results consistently produced, with a very low repeat rate • user-centric design—easy to learn, easy to run, easy to manage
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 4/7 **See captodayonline.com/productguides for an interactive version of guide**	**Leica Biosystems** **Ryan Gresavage** ryan.gresavage@leicabiosystems.com **1700 Leider Lane** **Buffalo Grove, IL 60089** **847-848-3230** www.leicabiosystems.com	**Leica Biosystems** **Ryan Gresavage** ryan.gresavage@leicabiosystems.com **1700 Leider Lane** **Buffalo Grove, IL 60089** **847-848-3230** www.leicabiosystems.com	**Leica Biosystems** **Ryan Gresavage** ryan.gresavage@leicabiosystems.com **1700 Leider Lane** **Buffalo Grove, IL 60089** **847-848-3230** www.leicabiosystems.com
Name of automated staining instrument	ST4020 Small Linear Stainer	ST5010 Autostainer XL	ST5020 Multistainer
Intent of automated staining instrument Type of staining conducted on instrument Recommended applications	clinical use, research use hematoxylin and eosin histology, cytology	clinical use, research use hematoxylin and eosin, histochemical/special stains histology, cytology, special staining	clinical use, research use hematoxylin and eosin, histochemical/special stains histology, cytology, special staining
First-ever installation of this staining instrument Total No. of units installed in U.S./Outside U.S. (as of June 2017)	2010 —	1992 —	2001 —
Company manufactures this automated staining instrument	no	yes	yes
Company sells this product through distribution partners • Vendors with which company partners	yes North Central Instruments	yes North Central Instruments	yes North Central Instruments
Names of other automated staining instruments sold by company	ST5010 Autostainer XL, BOND-MAX, BOND-III	ST4020 Small Linear Stainer, ST5020 Multistainer, BOND-MAX, BOND-III	ST5010 Autostainer XL, ST4020 Small 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)
Model type • Dimensions (H × W × D) • Weight empty/Weight fully loaded	benchtop 10 × 24 × 8 in. 35 lbs./—	benchtop 20 × 43 × 26 in. 143 lbs./—	benchtop 42 × 28 × 22 in. 209 lbs./—
Automatic programmable start/Automatic programmable shutdown	no/no	no/no	yes/yes
Maximum slide capacity of instrument	72	330	250
Instrument platform Stainer control computer can be interfaced to an LIS • Type of computer interface to LIS Staining instrument can interface to a specimen-tracking system	individual no no interface no	individual no no interface no	individual no no interface no
Barcode used to read slides placed on staining instrument • When barcode is read, stainer obtains stains to be done from host computer/LIS • Information included in barcode • How barcode information is conveyed RFID used to read slides placed on staining instrument • When RFID is read, stainer obtains stains to be done from host computer/LIS	— — — — — — —	— — — — — — —	— — — — — — —
User interface	keypad	keypad	touchscreen
Reagent configuration Instrument reagent application Uses for bulk reagents No. of tests or slides one reagent/test kit can handle	open reagent system patient slides submerged in shared reagents deparaffinization, rinsing —	open reagent system patient slides submerged in shared reagents deparaffinization, rinsing —	open reagent system patient slides submerged in shared reagents deparaffinization, rinsing —
Staining configuration	set by manufacturer or user programmable (user's choice)	set by manufacturer or user programmable (user's choice)	set by manufacturer or user programmable (user's choice)
How slides on runs are handled Method of heating or drying slides Solution for rinsing slides Online coverslipping integrated into system	continuous load (4 slides per rack/18 racks per run) offline drying system distilled water, tap water (inlet) no	continuous load (30 slides per rack) online drying system distilled water, tap water (inlet) yes (glass)	continuous load (30 slides per rack) online drying system distilled water, tap water (inlet) yes (glass)
Fume control	—	onboard filters	onboard filters
Onboard quality control • Onboard quality control for individual reagents • Types of quality control for reagents • Onboard quality control for staining program	no no — no	no no — no	no no — no
Management of waste	manually by user	manually by user	manually by user
Required user maintenance • User maintenance records kept on instrument Required maintenance by vendor's service personnel • Vendor maintenance records kept on instrument	weekly no annually no	weekly no annually no	weekly no annually no
User training and installation: • User training included with purchase • Total time for standard installation and basic training • Where training is held • Follow-up training available • Extra charge for follow-up training	 yes 3 hours at customer site yes (upon customer request) —	 yes 3 hours at customer site yes (upon customer request) —	 yes 3 hours at customer site yes (upon customer request) —
Instrument list price (as of June 2017)	—	—	—
Warranty provided with staining instrument • Length of warranty before purchasing service contract • Warranty provider Users can be trained onsite as service personnel Client or a third-party maintenance company can purchase inventory of replacement parts Cost of annual service contract (as of June 2017)	yes 1 year manufacturer — — —	yes 1 year manufacturer — — —	yes 1 year manufacturer — — —
Primary user safety features	—	—	significantly reduces fume exposure with easy load and unload drawers that hold up to 120 slides
Primary productivity processing features	can run a wide range of protocols and tissue types; adjust staining speed between 2 and 300 seconds per station	high specimen throughput supports laboratory workflows with up to 11 racks of 30 slides at a time	flexibility with the multiple bath layout with 40 stations, including up to 6 wash stations and up to 4 ovens/slide drying stations
Other distinguishing product features (supplied by company)	• small (50-mL) container for reagent savings • 3 optional running water stations for crisp, clear staining • continuous loading to accelerate turnaround time	• 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	• 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

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AUTOMATED STAINING INSTRUMENTS

Part 5/7 **See captodayonline.com/productguides for an interactive version of guide**	**Roche Diagnostics** **Kristin Lampe** kristin.lampe@roche.com **9115 Hague Rd.** **Indianapolis, IN 46250** **317-521-3591** www.usdiagnostics.roche.com	**Roche Diagnostics** **Kristin Lampe** kristin.lampe@roche.com **9115 Hague Rd.** **Indianapolis, IN 46250** **317-521-3591** www.usdiagnostics.roche.com	**Roche Diagnostics** **Shivani Passey** shivani.passey@roche.com **9115 Hague Rd.** **Indianapolis, IN 46250** www.usdiagnostics.roche.com
Name of automated staining instrument	BenchMark ULTRA	BenchMark XT	VENTANA HE 600 System
Intent of automated staining instrument Type of staining conducted on instrument Recommended applications	clinical use immunohistochemical/in situ histology, cytology	clinical use immunohistochemical/in situ histology, cytology	clinical use hematoxylin and eosin histology
First-ever installation of this staining instrument Total No. of units installed in U.S./Outside U.S. (as of June 2017)	1991 —	1991 —	2015 80/60
Company manufactures this automated staining instrument	yes	yes	yes
Company sells this product through distribution partners • Vendors with which company partners	no —	no —	no —
Names of other automated staining instruments sold by company	BenchMark XT, DISCOVERY ULTRA, DISCOVERY XT, BenchMark Special Stains, SYMPHONY, VENTANA HE 600	BenchMark ULTRA, DISCOVERY ULTRA, DISCOVERY XT, BenchMark Special Stains, SYMPHONY, VENTANA HE 600	BenchMark ULTRA, BenchMark XT, BenchMark Special Stains
Provide list of client sites to potential customers on request	yes (partial list of comparable sites)	yes (partial list of comparable sites)	yes (partial list of comparable sites)
Model type • Dimensions (H × W × D) • Weight empty/Weight fully loaded	floor standing 62.4 × 44.0 × 33.1 in. 650 lbs./—	floor standing 60.25 × 35 × 26 in. 385 lbs./—	floor standing 79.5 × 57 × 27.5 in. 1,300 lbs./1,451 lbs.
Automatic programmable start/Automatic programmable shutdown	yes/yes	yes/yes	yes/yes
Maximum slide capacity of instrument	30	30	180–200 slides per hour
Instrument platform Stainer control computer can be interfaced to an LIS • Type of computer interface to LIS Staining instrument can interface to a specimen-tracking system	modular (8 units controlled by 1 computer) yes bidirectional yes	modular (8 units controlled by 1 computer) yes bidirectional yes	individual yes (but must have VENTANA VANTAGE workflow solution or VENTANA Connect software) bidirectional yes
Barcode used to read slides placed on staining instrument • When barcode is read, stainer obtains stains to be done from host computer/LIS • Information included in barcode • How barcode information is conveyed RFID used to read slides placed on staining instrument • When RFID is read, stainer obtains stains to be done from host computer/LIS	yes (one- and two-dimensional open barcode) yes specimen identifier, stains to be done open barcode — —	yes (one- and two-dimensional open barcode) yes specimen identifier, stains to be done open barcode — —	yes (two-dimensional open barcode) no specimen identifier company's proprietary barcode system yes (RFID with proprietary format) no
User interface	keyboard with mouse	keyboard with mouse	touchscreen, keyboard with mouse
Reagent configuration Instrument reagent application Uses for bulk reagents No. of tests or slides one reagent/test kit can handle	combination of open and closed system reagents applied to patient slides individually deparaffinization, rinsing 50 or 250	combination of open and closed system reagents applied to patient slides individually deparaffinization, rinsing 50 or 250	closed/proprietary system reagents applied to patient slides individually deparaffinization, rinsing variable
Staining configuration	user programmable	user programmable	user programmable
How slides on runs are handled Method of heating or drying slides Solution for rinsing slides Online coverslipping integrated into system	continuous load online drying system buffer no	batch load (30 slides per rack/1 rack per run) online drying system buffer no	continuous load (20 slides per tray/up to 10 trays at once) online drying system VENTANA HE 600 wash solution yes (glass)
Fume control	—	—	onboard filters and vented
Onboard quality control • Onboard quality control for individual reagents • Types of quality control for reagents • Onboard quality control for staining program	yes yes temperature, pH, dilution yes	yes yes temperature, pH, dilution yes	no no — —
Management of waste	automated collection onboard instrument	automated collection onboard instrument	automated collection onboard instrument, direct to drain
Required user maintenance • User maintenance records kept on instrument Required maintenance by vendor's service personnel • Vendor maintenance records kept on instrument	daily, weekly, monthly, quarterly yes annually yes	daily, weekly, monthly, quarterly yes annually yes	not required (all user maintenance automated) yes semi-annually yes
User training and installation: • User training included with purchase • Total time for standard installation and basic training • Where training is held • Follow-up training available • Extra charge for follow-up training	 yes 2 days at customer site yes (upon customer request) no	 yes 2 days at customer site yes (upon customer request) no	 yes 3 days at vendor and customer sites yes no
Instrument list price (as of June 2017)	—	—	—
Warranty provided with staining instrument • Length of warranty before purchasing service contract • Warranty provider Users can be trained onsite as service personnel Client or a third-party maintenance company can purchase inventory of replacement parts Cost of annual service contract (as of June 2017)	yes 1 year manufacturer — — —	yes 1 year manufacturer — — —	yes 1 year manufacturer no no —
Primary user safety features	ready-to-use reagents; alarms and remote monitoring; automated waste collection; instrument pauses operation when hood is opened; more	ready-to-use reagents; automated waste collection; alarm functions; ergonomic design	elimination of alcohol and xylene to reduce technician exposure to harmful chemicals
Primary productivity processing features	single-piece flow processing; overnight run capability; simultaneous processing of IHC/ISH; intuitive visual user interface; barcoding of slides and reagents; more	overnight run capability; barcoding of slides and reagents; protocol flexibility and simultaneous processing of IHC/ISH; more	continuous slide loading through three tray portals; 40–45 min. time to first result and 180–200 slides per hour (depending on selected protocol); more
Other distinguishing product features (supplied by company)	• 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	• 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	• individual slide staining to virtually eliminate tissue cross-contamination and produce high quality, consistent stains • improved technician safety by eliminating use of alcohol, xylene, and DI water • automated load-and-go workflow allows technicians to complete value-adding tasks in the lab

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AUTOMATED STAINING INSTRUMENTS

Part 6/7 **See captodayonline.com/productguides for an interactive version of guide**	**Sakura Finetek USA** **Claudio Scancich** cscancich@sakuraus.com **1750 W. 214th St.** **Torrance, CA 90501** **310-972-2303** www.sakura-americas.com	**Sakura Finetek USA** **Claudio Scancich** cscancich@sakuraus.com **1750 W. 214th St.** **Torrance, CA 90501** **310-972-2303** www.sakura-americas.com	**Sakura Finetek USA** **Douglas Yamanishi** dyamanishi@sakuraus.com **1750 W. 214th St.** **Torrance, CA 90501** **310-972-2310** www.sakura-americas.com
Name of automated staining instrument	Histo-Tek Mini Stainer, Linear Slide Stainer	Histo-Tek SL Slide Stainer	Tissue-Tek Genie Advanced Staining System
Intent of automated staining instrument	clinical use, research use	clinical use, research use	clinical use, research use
Type of staining conducted on instrument	hematoxylin and eosin	hematoxylin and eosin, histochemical/special stains	immunohistochemical/in situ
Recommended applications	histology, cytology, frozen sections	histology, cytology, special staining	histology, cytology
First-ever installation of this staining instrument	2017	2013	2017
Total No. of units installed in U.S./Outside U.S. (as of June 2017)	—	—	—
Company manufactures this automated staining instrument	no (manufactured by Rushabh Instruments)	no (manufactured by Rushabh Instruments)	yes
Company sells this product through distribution partners	yes	yes	no
• Vendors with which company partners	Cardinal Health, VWR International, Government Scientific Source	Cardinal Health, VWR International, Henry Schein Medical, Government Scientific Source	—
Names of other automated staining instruments sold by company	Tissue-Tek Prisma Automated Slide Stainer, Histo-Tek SL Slide Stainer, Tissue-Tek Genie Advanced Staining System	Tissue-Tek Prisma Automated Slide Stainer, Histo-Tek Mini Stainer, Tissue-Tek Genie Advanced Staining System	Tissue-Tek Prisma Automated Slide Stainer, Histo-Tek SL Slide Stainer, Histo-Tek Mini Stainer
Provide list of client sites to potential customers on request	yes (partial list of comparable sites, with consent of reference client sites)	yes (partial list of comparable sites, with consent of reference client sites)	yes (partial list of comparable sites, with consent of reference client sites)
Model type	benchtop	benchtop	floor standing
• Dimensions (H × W × D)	11 × 24 × 8.7 in.	18 × 32 × 32 in.	63 × 65 × 30 in.
• Weight empty/Weight fully loaded	35 lbs./38 lbs.	55 lbs./65 lbs.	1,280 lbs.
Automatic programmable start/Automatic programmable shutdown	no/no	no/no	yes/no
Maximum slide capacity of instrument	68	120	30
Instrument platform	individual	individual	modular (5 units controlled by 1 computer)
Stainer control computer can be interfaced to an LIS	no	no	no
• Type of computer interface to LIS	no interface	no interface	—
Staining instrument can interface to a specimen-tracking system	no	no	no
Barcode used to read slides placed on staining instrument	—	—	yes (two-dimensional open barcode)
• When barcode is read, stainer obtains stains to be done from host computer/LIS	—	—	yes
• Information included in barcode	—	—	specimen identifier, stains to be done (proprietary code)
• How barcode information is conveyed	—	—	open barcode
RFID used to read slides placed on staining instrument	—	—	—
• When RFID is read, stainer obtains stains to be done from host computer/LIS	—	—	—
User interface	keypad	keypad	keyboard with mouse
Reagent configuration	open reagent system	open reagent system	combination of open and closed system
Instrument reagent application	patient slides submerged in shared reagents	patient slides submerged in shared reagents	reagents applied to patient slides individually
Uses for bulk reagents	—	—	deparaffinization, rinsing, antigen retrieval
No. of tests or slides one reagent/test kit can handle	—	—	250
Staining configuration	user programmable	user programmable	set by manufacturer or user programmable (user's choice)
How slides on runs are handled	batch and continuous load (4 slides per rack/1 rack per run)	batch and continuous load (30 slides per rack/1 rack per run)	continuous load
Method of heating or drying slides	offline drying system	offline drying system	offline drying system
Solution for rinsing slides	distilled water, tap water (inlet)	distilled water, tap water (inlet)	buffer
Online coverslipping integrated into system	no	no	no
Fume control	onboard filters	onboard filters and vented	—
Onboard quality control	no	no	yes
• Onboard quality control for individual reagents	—	—	yes
• Types of quality control for reagents	—	—	temperature, expiration dates, remaining test numbers for each cartridge, fill-volume sensing of bulk reagents
• Onboard quality control for staining program	—	—	yes
Management of waste	manually by user, direct to drain	manually by user, direct to drain	manually by user, automated collection onboard instrument (hazardous waste separation)
Required user maintenance	daily, weekly, monthly	weekly, monthly	daily, weekly, monthly, quarterly
• User maintenance records kept on instrument	no	no	yes
Required maintenance by vendor's service personnel	—	— (recommend annual preventive maintenance)	annually
• Vendor maintenance records kept on instrument	no	no	yes
User training and installation:			
• User training included with purchase	yes	yes	yes
• Total time for standard installation and basic training	2 hours	4 hours	4 days
• Where training is held	at customer site	at customer site	at customer site
• Follow-up training available	yes (upon customer request)	yes (upon customer request)	yes (upon customer request)
• Extra charge for follow-up training	no	no	no
Instrument list price (as of June 2017)	$6,500	$23,994	—
Warranty provided with staining instrument	yes	yes	yes
• Length of warranty before purchasing service contract	1 year	1 year	1 year
• Warranty provider	manufacturer	manufacturer	manufacturer
Users can be trained onsite as service personnel	no	no	no
Client or a third-party maintenance company can purchase inventory of replacement parts	no	no	no
Cost of annual service contract (as of June 2017)	—	—	—
Primary user safety features	built-in charcoal filtering system to reduce exposure to xylene fumes	built-in charcoal filtering system and optional external venting system to reduce exposure to xylene fumes	ready-to-use reagents; alarms; remote monitoring; separation of hazardous and nonhazardous waste; door locks; counter-height staining stations; more
Primary productivity processing features	simple one-step programming of all stations	continuous loading of up to 30 slides per run; small footprint; up to 120 slides per hour throughput	up to 42 different antibodies onboard; onboard mixing of chromogen and substrate just in time; more
Other distinguishing product features (supplied by company)	• compact size fits any benchtop • smaller containers for reagent savings • flexible, open system	• small containers for reagent savings • flexible, open system • uses Sakura Finetek staining baskets to increase workflow efficiency on Sakura Finetek coverslippers	• 30 independent slide-staining stations with true random access for fixed and predictable turnaround time • 5 antibody and probe dispense options, including single-use capsules • advanced gap technology for uniform and reproducible staining with whole slide coverage

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 7/7 **See captodayonline.com/productguides for an interactive version of guide**	**Sakura Finetek USA** **Claudio Scancich** cscancich@sakuraus.com **1750 W. 214th St.** **Torrance, CA 90501** **310-972-2303** www.sakura-americas.com	**Thermo Fisher Scientific** **Robert Jacox** robert.jacox@thermofisher.com **4481 Campus Drive** **Kalamazoo, MI 49008** **269-544-5651** www.thermofisherscientific.com
Name of automated staining instrument	Tissue-Tek Prisma Automated Slide Stainer	Thermo Scientific Lab Vision Autostainer 480S-2D
Intent of automated staining instrument Type of staining conducted on instrument Recommended applications	clinical use, research use hematoxylin and eosin, histochemical/special stains histology, cytology, special staining	clinical use, research use immunohistochemical/in situ histology
First-ever installation of this staining instrument Total No. of units installed in U.S./Outside U.S. (as of June 2017)	2006 —	— —
Company manufactures this automated staining instrument	yes	yes
Company sells this product through distribution partners • Vendors with which company partners	yes Cardinal Health, VWR International, Government Scientific Source	yes Fisher Scientific, VWR International in the United States; others outside the United States
Names of other automated staining instruments sold by company	Histo-Tek SL Slide Stainer, Histo-Tek Mini Stainer, Tissue-Tek Genie Advanced Staining System	—
Provide list of client sites to potential customers on request	yes (partial list of comparable sites, with consent of reference client sites)	yes (partial list of comparable sites)
Model type • Dimensions (H × W × D) • Weight empty/Weight fully loaded	benchtop 24.8 × 49.2 × 28 in. 330 lbs./365 lbs.	benchtop 23 × 35 × 26 in. 119 lbs./—
Automatic programmable start/Automatic programmable shutdown	no/no	yes/yes
Maximum slide capacity of instrument	660	48 (also available in 36- and 72-slide capacity models)
Instrument platform Stainer control computer can be interfaced to an LIS • Type of computer interface to LIS Staining instrument can interface to a specimen-tracking system	individual no no interface no	individual yes bidirectional no
Barcode used to read slides placed on staining instrument • When barcode is read, stainer obtains stains to be done from host computer/LIS • Information included in barcode • How barcode information is conveyed RFID used to read slides placed on staining instrument • When RFID is read, stainer obtains stains to be done from host computer/LIS	— — — — — —	yes (two-dimensional open barcode) yes stains to be done open barcode — —
User interface	touchscreen	keyboard without mouse
Reagent configuration Instrument reagent application Uses for bulk reagents No. of tests or slides one reagent/test kit can handle	open reagent system patient slides submerged in shared reagents — —	open reagent system reagents applied to patient slides individually rinsing —
Staining configuration	user programmable	user programmable
How slides on runs are handled	batch and continuous load (20 slides per rack/3 racks per run)	batch load (12 slides per rack/4 racks per run)
Method of heating or drying slides Solution for rinsing slides Online coverslipping integrated into system	online and offline drying system distilled water, tap water (inlet and onboard system) yes (glass, tape)	— distilled water, buffer no
Fume control	onboard filters and vented	—
Onboard quality control • Onboard quality control for individual reagents • Types of quality control for reagents • Onboard quality control for staining program	no — — —	no — — yes
Management of waste	manually by user, direct to drain	automated collection onboard instrument
Required user maintenance • User maintenance records kept on instrument Required maintenance by vendor's service personnel • Vendor maintenance records kept on instrument	daily, weekly, monthly, quarterly no — (recommend annual preventive maintenance) no	daily no annually no
User training and installation: • User training included with purchase • Total time for standard installation and basic training • Where training is held • Follow-up training available • Extra charge for follow-up training	 yes 1 day at customer site yes (upon customer request) no	 yes 1 day at customer site yes (upon customer request) no
Instrument list price (as of June 2017)	$46,735	—
Warranty provided with staining instrument • Length of warranty before purchasing service contract • Warranty provider Users can be trained onsite as service personnel Client or a third-party maintenance company can purchase inventory of replacement parts Cost of annual service contract (as of June 2017)	yes 1 year manufacturer no no —	yes 1 year manufacturer yes yes —
Primary user safety features	built-in charcoal filtering system and optional external venting system to reduce exposure to xylene fumes	separation of hazardous and nonhazardous waste; barcode enabled
Primary productivity processing features	when configured as a stainer-coverslipper, user continuously loads baskets of unstained slides and unloads baskets of stained and coverslipped slides from an output station hosting up to 12 baskets	1- to 48-slide capacity, each individually programmable; user-specified protocols and choice of reagents; hands-free, walk-away operation with advanced timer functions for overnight use; more
Other distinguishing product features (supplied by company) *Note: a dash in lieu of an answer means company did not answer question or question is not applicable*	• mean time between repairs of more than 52 weeks • high throughput of 500 slides/hour • barcode-based slide tracking in both configurations: Tissue-Tek Prisma & Film and Tissue-Tek Prisma & Glas g2	• available in three sizes: 36-, 48-, and 72-slide capacity to fit any size laboratory • user-specified protocols and choice of reagents • fast flow software logic enables flexible programming, operator ease of use, and control of IHC costs

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